S. HRG. 107–868

NEW SOURCE REVIEW POLICY, REGULATIONS AND ENFORCEMENT ACTIVITIES

JOINT HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

AND THE

COMMITTEE ON THE JUDICIARY UNITED STATES SENATE

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

ON

JULY 16, 2002

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NEW SOURCE REVIEW POLICY, REGULATIONS AND ENFORCEMENT ACTIVITIES

TUESDAY, JULY 16, 2002

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The committees met, pursuant to notice, at 10 a.m. in room 106, Senate Dirksen Building, Hon. Patrick J. Leahy (chairman of the Committee on the Judiciary) and Hon. James M. Jeffords (chairman of the Committee on Environment and Public Works) presiding.

Present for the Committee on the Judiciary: Senators Leahy, Biden, Durbin, Edwards, Schumer, Sessions and Specter.

Present for the Committee on the Environment and Public Works: Senators Jeffords, Bond, Carper, Chafee, Clinton, Corzine, Inhofe, Lieberman, Smith, Voinovich and Warner.

OPENING STATEMENT OF HON. PATRICK LEAHY, U.S. SENATOR FROM THE STATE OF VERMONT

Senator LEAHY. We welcome everybody here. Thank you for attending this joint hearing of the Senate Environment and Public Works Committee and the Senate Judiciary Committee.

Before we start the hearing, I would note that the record will be kept open for 2 weeks so that Senators can ask followup questions, and they are sent to committee staff within the next week, but also give the witnesses a chance to look at their answers should they want to add anything to them. Obviously, this is unusual and I want to extend thanks to my fellow co-chair, Senator Jeffords, who is also my colleague from Vermont. I thank him for helping to put this together, and Senator Bob Smith, who is the ranking Republican, and of course the ranking Republican on the Judiciary Committee, Senator Orrin Hatch. We will have statements by myself and Senator Jeffords and Senator Hatch and Senator Smith. The two appropriate subcommittee chairmen and ranking members are Senator Lieberman and Senator Voinovich, and Senator Biden and Senator Grassley.

I am disappointed that Administrator Christie Whitman was unable to join us today. We tried to make things easier by having two major committees with jurisdiction here, but she is not here. I would like to thank the Administration for having a couple of representatives who are willing to take time to be with us.

I also want to thank the State attorneys general who traveled long distances to be present. I would like to recognize among them

my good friend, Vermont's Attorney General William Sorrell, a highly respected attorney general. We pay attention to that, because we have another highly respected former attorney general from Vermont, Jim Jeffords. I never made it beyond the ranks of being a State's attorney. I also see Attorney General Spitzer here and Attorney General Pryor and others.

Our committees have come together because of the issues we are discussing, the Administration's proposed revision to the Clean Air Act's New Source Review regulation, or NSR. Now, it does not just go into the question of quality of air, it goes into the question of enforcing our laws and the quality of air. Back in 1977, New Source Review was a part of an agreement to give corporate energy companies a temporary, and I emphasize a temporary, grace period before they adopted modern Clean Air Act standards at their facilities. I was here at the time, and I remember the negotiations that went on between both Democrats and Republicans, the industry and the Administration. We worked out a compromise, and the understanding of the compromise was that everybody would keep their word, including whoever might be in the Administration. The Clean Air Act exempted or grandfathered pre-1977 industrial facilities from immediate installation of modern pollution controls, requiring them to do so only when they made significant modification to their sites. It was a fair and generous concession that gave corporate energy companies the benefit of the doubt.

Now, several of the largest corporate energy companies did not keep their word. They completely abused our trust in upgrading old, dirty plants on the cheap. They ignored required air pollution controls—controls required by the New Source Review regulation. For more than 25 years, these irresponsible polluters who did not keep their word have chosen to save money by allowing their 1950's-era plants to belch hundreds of thousands of tons of excess pollution into the air, including harmful toxins such as mercury. Vermont and other States have paid the price with decades of acid rain and mercury deposits in our soils, our lakes and our rivers.

Some of us here were among the strongest supporters of the action by former President Clinton's Environmental Protection Agency and the Department of Justice. They recognized and documented this corporate abuse. They cracked down on our Nation's most flagrant NSR violators in 1999. The owners of these facilities happen to be some of the largest and wealthiest corporate energy giants in the country, especially those in the utility sector, as we show on our chart over here on the side. This shows the incredible amount of annual emissions emitted by eight of these companies. American Electric Power, Southern Company, and Tennessee Valley Authority exceed the corporate average emission for the Nation's top 100 utility companies' emissions by five to eight times. The lawsuits brought by the last Administration were landmark enforcement cases against the largest corporate air polluters. They set the stage for a multi-billion dollar settlement by those companies and hundreds of thousands of tons of annual pollution reductions.

For the children in my State, having the pollution go down is worth a lot more than having the money in fines. But I would point out that unless these companies face the fines, our children are going to continue to breathe the pollutants. We have paved the way

for numerous settlements with refineries around the country, and these are smaller in cases—fines and pollution reductions—but they are significant for the communities who live there.

But as you might imagine, the largest of these corporate polluters did not like being caught, especially when it meant billions of dollars in fines. So what did they do? Instead of paying the fines or cutting the pollution, they went last year to the new Bush Administration for relief—relief from a regulation they had circumvented for more than a quarter of a century. Somebody finally called them on it, and told them they had to keep their word, they had to obey the law, and now they want to get away with it. Lobbyists for the biggest corporate polluters complained these lawsuits were in error. They had done nothing wrong. The explanation for why they continued to operate ancient pollution-spewing facilities was simply they had never performed major maintenance—only routine maintenance, which of course would not trigger the NSR. Their justification is so transparent that one would think it would not even pass the lab test, but the Administration saw it differently.

Meeting behind closed doors in secret meetings that have yet to be fully disclosed to Congress or to the American public, Vice President Cheney's Energy Policy Task Force created this document. They sent it to the President in May 2001. Tucked within its pages is a short paragraph recommending a review of the NSR by the Department of Justice and the Environmental Protection Agency. That is a huge victory for corporate polluters. The path was clear for corporate energy lawyers to get their clients off the hook.

As quoted in the New York Times earlier this year, one energy lawyer revealed the strategy. The thinking was, how can you do things that will influence the NSR issue in the pending litigation? The Administration recants NSR provisions and the lawsuits fall apart. They knew exactly what to do. They could say, go ahead and pollute, because the Administration doesn't give a hoot. That is exactly what happened. Last month, the Environmental Protection Agency proposed sweeping revisions and despite pledges by the Administration officials that these revisions would not change the course of pending litigation against NSR violators, we are already seeing the effects of this roll-back. Two of the largest utility cases have been settled in principle. Cinergy and VEPCO remain stalled to this day. Those cases would have required $2.6 billion in fines, but more importantly the reduction of 800,000 tons of pollutants. As soon as they heard that the Administration was backing off, those cases became stalled.

The bellwether case that set precedent for all litigation, *U.S.* v. *Tennessee Valley Authority*, was recently sent to mediation. That was a surprise to all involved. It is a much weaker outcome than expected, but it was following what was being said on the NSR revisions. Early estimates of the case might have been in settlement, and it would have, and TVA would have been responsible for over $1 billion in fines to the American people.

Now, this is not an obscure regulatory battle. Relaxation of the Clean Air Act has made headlines for months. In fact, it is the lead story in today's Post. I believe the American people will be listening for this Administration to explain itself. The dismantling of

these lawsuits did not happen by themselves. The gutting of them is done in a calculated and planned manner, or it is completed in confidence. Either way, it is now allowable.

Recalling the American people in every single poll say have tougher action against corporate abuse. There is no way we can accept this roll-back of our Nation's clean air laws to benefit the wealthiest, largest, dirtiest corporate polluters, and sadly at the health and safety of our children.

[The prepared statement of Senator Leahy follows:]

STATEMENT OF HON. PATRICK LEAHY, U.S. SENATOR FROM THE STATE OF VERMONT

Good morning to all of you and thank you for attending this joint hearing of the Senate Environment and Public Works Committee and the Senate Judiciary Committee.

Before I move to the hearing itself, let me take a moment to mention that the record for this hearing will be open for 2 weeks from today and that any follow-up questions that Senators wish to post: to our witnesses today will be accepted if sent to committee staff within the next week.

I want to extend my sincere thanks to my co-chair and fellow Vermonter, Senator Jim Jeffords, for his help in putting this hearing together as well as to my good friend from the Granite State, Ranking Republican Bob Smith. And of course, I would like to thank this committee's Ranking Republican Member, Orrin Hatch.

While I am disappointed Administrator Christie Whitman did not join us today, I would very much like to thank the Administration's representatives for taking time to be here and the State attorney; general who have each traveled long distances to be present. In particular, I would like to recognize my good friend, Vermont's Attorney General William Sorrell. Thank you so much for being here. Finally, I would like to thank the many witnesses that acre present to testify today—your time is much appreciated by both committees."

Our committees have come together for this special session today because the issue we are discussing—the Administration's proposed revisions to the Clean Air Act's New Source Review regulation (or NSR)—is not just about the future of our air quality, it is about enforcing the law.

Written in 1977, New Source Review was a part of an agreement to give corporate energy companies a temporary grace period before they adopted modem Clean Air Act standards at their facilities.

The Clean Air Act exempted, or "grandfathered," pre-1977 industrial facilities from immediate installations of modern pollution controls, requiring them to do so only when they made significant modifications to their sites and increased emissions.

This was a fair—and, generous—concession that gave corporate energy companies the benefit of the doubt acid trusted that they would use future modification upgrades to not only extend the life of their plants, but also to clean up the air.

Sadly, several of the largest corporate energy companies completely abused our trust, upgrading old, dirty plants on the cheap, and ignoring the required air pollution controls—controls required by the New Source Review regulation.

For more than 25 years, these irresponsible polluters have chosen to save money by allowing their 1950's era plants to belch hundreds of thousands of tons of excess pollution into the air, including harmful toxins such as mercury. Vermont and other States have paid the price, with decades of acid rain and mercury deposits in our soils, our lakes, and our rivers.

Some of us here were among the strongest supporters of the actions by former President Clinton's Environmental Protection Agency and Department of Justice that recognized and documented this corporate abuse, cracking down on our nation's most flagrant NSR violators in 1999.

The owners of these facilities happened to be some of the largest, and wealthiest, corporate energy giants in the country, especially those in the utility sector.

On the chart behind me, you can see for yourself the incredible amount of annual emissions emitted by eight of these companies. Three of them—American Electric Power, Southern Company, and Tennessee Valley Authority—exceed the corporate average emissions for the nation's top 100 utility companies' emissions by five to eight times.

The Clinton lawsuits were landmark enforcement cases against the largest corporate air polluters—especially those in the utility sector—and set the stage for a multi-billion dollar settlements by those companies and hundreds of thousands of

tons of annual pollution reductions. These, in turn, paved the way for numerous settlements with refineries around the country. While these were smaller cases in terms of fines and pollution reductions, they were and are significant cases for those communities living under the cloud of refinery smog.

Yet, as you may imagine, the largest of these corporate polluters did not like being caught—especially when it meant billions of dollars in fines.

So, last year, they went to the new Bush Administration for relief—relief from a regulation they had circumvented for more than a quarter of a century. Lobbyists for the biggest corporate polluters complained that the Clinton Administration's lawsuits were in error and that they had done nothing wrong.

Their explanation for why they continued to operate ancient, pollution-spewing facilities was simply that they have never performed major maintenance—only "routine maintenance"—to their facilities for the past 25 years. As you might guess, "routine maintenance" does not trigger the pollution controls of NSR.

This justification is so transparent that one would think it would not, should not, even pass the laugh test. Yet this Administration obviously saw it differently.

Meeting behind closed doors in secret meetings that have yet to be fully disclosed to Congress or to the American public, Vice President Cheney's Energy Policy Task Force created this document and sent it to the President in May 2001.

Tucked within its pages is a short paragraph, recommending a "review" of the NSR regulation by the Department of Justice and the Environmental Protection Agency.

It cannot be understated that this recommendation to review NSR by Vice President Cheney's Task Force was a huge victory for corporate polluters. With it, the path was clear for corporate energy lawyers to get their clients off the hook. As quoted in the New York Times earlier this year, one energy lawyer—who chose to remain anonymous—revealed the strategy:

"The thinking was," he said, "how can you do things that will influence the NSR issue and the pending litigation? If the Administration recants NSR provisions, the lawsuits fall apart."

And that is exactly what has happened. Last month, the Environmental Protection Agency proposed sweeping revisions to the New Source Review regulation—revisions that could have been written in corporate energy boardrooms or by the legal teams for corporate NSR violators.

And despite pledges by Bush Administration officials that these revisions would not change the course of bending litigation against NSR violators, we are already seeing the effects of this rollback.

Two of the largest utility cases that had been settled "in principle" in early 2000 under the Clinton Administration—Cinergy and VEPCO—remain stalled to this day. Those cases would have required $2.6 billion in fines and the reduction of more than 800,000 tons of pollution.

And the case that has been called the "bellwether" case to set the precedent for all litigation against illegal pollution from coal-fired powerplants—*U.S.* vs. *Tennessee Valley Authority*—was recently sent to mediation. This action by the judge was a surprise to all involved and is a much weaker outcome than had been expected before the NSR revisions were publicized.

By all accounts, the mediation ruling occurred because of publicity surrounding EPA's revision to the NSR regulation.

As you can see on the chart behind me, early estimates of this case might have ended in settlement and would have held TVA responsible for well over $1 billion in fines to the American people.

This issue is not an obscure regulatory battle—the relaxation of the Clean Air Act has made headlines for months and was a lead story in today's Washington Post, with the headline "Bush Plan to Ease Clean Air Rules Roils Court Cases Against Utilities."

We will hear much more about the details of this issue in today's hearing.

I believe the American people will be listening for this Administration to explain itself. The dismantling of these lawsuits did not happen by itself. The gutting of these lawsuits was either done in a calculated and planned manner or it was a product of complete Administration incompetence and lack of foresight.

At a time when the American people ware calling for tougher government vacation against corporate abuse, this Administration needs to be held accountable for its rollback of our nation's clean air laws for the benefit of the wealthiest, largest, dirtiest corporate polluters and, sadly, at the expense of the American people.

Senator Jeffords.

OPENING STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

Senator JEFFORDS. I am pleased also to be here with my colleagues and co-chair from Vermont. I believe this is the first joint Judiciary-EPW hearing ever held, but the gravity of the Administration's actions on New Source Review, or NSR, requires scrutiny of both legal and environmental grounds.

I am also glad to see one of my successors—Vermont Attorney General William Sorrell is here today. I appreciate his willingness to testify along with others. I wish we were meeting jointly on a happier occasion, but these changes in NSR regulations appear to be the biggest regulatory roll-back in the history of the Clean Air Act. They seem designed to subvert the Federal Government's own enforcement actions that would otherwise remove millions of tons of pollutants from the public air space.

They also seem intended to give away the billions of dollars worth of health benefits that NSR provides every year. Under these proposals, far fewer plants and maybe 50 percent or less will have to apply pollution controls. The basic concept of NSR is one of constant improvement. That means industry should emit less and less pollution as time passes, as investments occur, and as technology develops. The Clean Air Act does not provide loopholes for non-routine maintenance or picking decade-old baselines or any of the other loopholes that this Administration is trying to finalize.

When any physical change as a stationary source increases the amount of any air pollutant by that source, "then pollution controls must be applied." That is simple. It is straightforward and it is the law. Unfortunately, aside from the dubious legality of the public health cost of these proposed NSR changes, the Administration's poor handling of this matter has created an atmosphere of distrust. Even if these proposals were legal or justified, I would be suspicious. To my knowledge, no attempt was made to reach consensus among the various stakeholders or consult with the committees of jurisdiction before issuing the reform package.

Overall, this has been a much different, much less open rulemaking process than the one used by the Clinton Administration. This Administration seems to have largely ignored comments from public health advocates and the States, while listening mainly to industry. The Senate Environment and Public Works Committee's legitimate request for information on this matter and others have been treated disrespectfully and disdainfully by the White House.

While the EPA has recently begun to provide information in response to our December request, 90 percent of which is already in the public docket, the Department of Energy has been very unresponsive. We will be reviewing the additional material that EPA has promised to deliver by the end of this week, then we will decide whether a subpoena is necessary. I hope it does not come to that, but this White House may give the committee and Congress little choice.

I will note, however, that I do not recognize any validity in the Agency's claim, made largely by the White House insistence, that the documents we are requesting cannot be shared before the rules become final. There is no precedent or protection provided by statute or case law to defend that position. I am saddened by what the

White House is doing to the Environmental Protection Agency. It seems intent on gagging and binding this independent agency. This prevents us from working together in any kind of productive and cooperative manner. Even communication at the staff level has been intentionally stifled.

More than a year ago, the President directed the Agency to prepare a three-pollutant legislative proposal. The Agency developed and analyzed a proposal that it thought was defensible from air quality and public health perspectives. That straw proposal from August 2001 disappeared almost as soon as it was floated. Then in February of this year, a new version of targets and timetables was announced, one that looked quite different and substantially less protective, but no environmental or economic justification for those numbers had been provided to Congress or the public to see. We still do not have legislative language or any comprehensive analysis or demonstration on it.

NSR fits into a similar pattern. The Clinton Administration did a draft regulatory impact analysis in 1996 with its proposed regulations. Many years of stakeholder discussions took place, with lots of commentary and the analysis was shared. That Administration ended without a final rulemaking because of the many concerns, including environmental and legal questions. In June of this year, this Administration announced the NSR reform package. It did not conduct stakeholder meetings on the rulemaking passage. It provided no final regulatory impact analysis or any environmental or public health assessment. Worse yet, the Agency staff indicated that no qualitative analysis had been done or would be forthcoming.

That does not seem to comport very well with the requirement of the Executive Order on regulatory relief or with EPA's own internal documents. The NSR reform package is a recipe for litigation. If these changes become final, they will be overturned by the courts or perhaps by the Congress. The Agency will not be due any deference in court on its expert opinion because it has not justified how these changes can improve and protect the public health.

Except for a brief period, Congress has counted on EPA to be the "green" eyeshades people for 30 years. The Agency job is to make sure that pollution is accounted for and reduced. The EPA is supposed to keep corporate polluters honest and look out for the public good. But given these NSR changes and the White House anti-disclosure policy on information, it is hard not to think that the executives are overruling the green eyeshades people and trying to cook the books. Instead of greenbacks, we are talking about millions of tons of pollution that severely damages the health and welfare of the public.

Thank you, Mr. Chairman.

[The prepared statement of Senator Jefford follows:]

STATEMENT OF HON. JAMES JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

I am pleased to be here with my colleague and co-chair from Vermont. I believe this is the first joint Judiciary-EPW hearing ever held. But, the gravity of the Administration's actions on New Source Review, or NSR, requires scrutiny on both legal and environmental grounds.

I am also glad to see one of my successors, Vermont Attorney General William Sorrell, is here today. I appreciate his willingness to testify along with the other distinguished witnesses.

I wish we were meeting jointly on a happier occasion. But these changes in NSR regulations appear to be the biggest regulatory rollback in the history of the Clean Air Act. They seem designed to subvert the Federal Government's own enforcement actions that would otherwise remove millions of tons of pollutants from the public's air space.

They also seem intended to give away the billions of dollars worth of health benefits that NSR provides every year. Under these proposals, far fewer plants, maybe 50 percent or less, would have to apply pollution controls.

In exchange for these giveaways, what would the public get? More premature deaths, more lung disease, and more polluted landscapes. That doesn't seem like a fair trade to me.

I'd like to place in the Record a letter from Ben Rose of the Green Mountain Club and the Hikers for Clean Air. Their letter clarifies that such NSR changes will foul the air, "shroud our State and national parks in haze," and acidify our lakes and streams.

The basic concept of NSR is one of constant improvement. That means industry should emit less and less pollution as time passes, as investments occur and as technology develops. The Clean Air Act doesn't provide loopholes for non-routine maintenance or picking decades-old baselines or any of the other loopholes that this Administration is trying to finalize.

When "any physical change in a stationary source increases the amount of any air pollutant by that source" then pollution controls must be applied. That's simple and straightforward. And, it's the law.

Unfortunately, aside from the dubious legality and the public health costs of these proposed NSR changes, the Administration's poor handling of this matter has created an atmosphere of distrust.

Even if these proposals were legal or justified, I would be suspicious.

To my knowledge, no attempt was made to reach consensus among the various stakeholders or consult with the committees of jurisdiction before issuing this reform package. Overall, this has been a much different, much less open rulemaking process than the one used by the Clinton Administration.

This Administration seems to have largely ignored comments from public health advocates and the States, while listening mainly to industry. The Senate Environment and Public Works Committee's legitimate requests for information on this matter and others have been treated disrespectfully and disdainfully by this White House.

While the EPA has recently begun to provide information in response to our December request, 90 percent of which is already in the public docket, the Department of Energy has been very unresponsive.

We will be reviewing the additional material that EPA has promised to deliver by the end of this week. Then we will decide on whether a subpoena is necessary. I hope it doesn't come to that, but this White House may give the Committee and Congress little choice.

I will note, however, that I do not recognize any validity in the Agency's claim, made largely at the White House's insistence, that the documents we are requesting cannot be shared before the rules become final. There is no precedent or protection provided by statute or case law to defend that position.

I am saddened at what the White House is doing to the Environmental Protection Agency. It seems intent on gagging and binding this "independent" agency. This prevents us from working together in any kind of productive and cooperative manner. Even communication at the staff level has been intentionally stifled.

More than a year ago, the President directed the Agency to prepare a three-pollutant legislative proposal. The Agency developed and analyzed a proposal that it thought was defensible from an air quality and public health perspective. That "straw proposal" from August 2001 disappeared almost as soon as it was floated.

Then, in February of this year, a new version of targets and timetables was announced, one that looked quite different and substantially less protective. But no environmental or economic justification for those numbers had been done for the Congress or the public to see. We still don't have legislative language or any comprehensive analysis or documentation on it.

NSR fits into a similar pattern. The Clinton Administration did a draft regulatory impact analysis in 1996 with its proposed regulations. Many years of stakeholder discussions took place where lots of commentary and analysis was shared. That Administration ended without a final rulemaking because of many concerns, including environmental and legal questions.

In June of this year, this Administration announced its NSR reform package. It did not conduct stakeholder meetings on this rulemaking package. It provided no final regulatory impact analysis or any environmental or public health assessment. Worse yet, the Agency's staff indicated that no quantitative analysis had been done or would be forthcoming. That doesn't seem to comport very well with the requirements of the Executive Order on regulatory review, or with the EPA's own internal documents.

This NSR reform package is a recipe for litigation. If these changes become final, they will be overturned by the courts or perhaps by Congress. The Agency will not be due any deference in court on its expert opinion, because it has not justified how these changes can improve and protect public health.

Except for a brief period, Congress has counted on EPA to be the "green" eyeshades people for 30 years. The Agency's job is to make sure that pollution is accounted for and reduced. The EPA is supposed to keep corporate polluters honest and look out for the public good.

But given these NSR changes and the White House's anti-disclosure policy on information, it is hard not to think that the executives are overruling the "green" eyeshades people and trying to cook the books. Instead of greenbacks, we're talking about millions of tons of pollution that severely damages the health and welfare of the public. Thank you.

Senator LEAHY. Thank you very much.

We go next to Senator Bob Smith of New Hampshire, and then Senator Hatch, and then Senator Lieberman as the subcommittee chair and Senator Voinovich as ranking member, then Senator Biden and Senator Grassley, and then the witnesses.

OPENING STATEMENT OF HON. BOB SMITH, U.S. SENATOR FROM THE STATE OF NEW HAMPSHIRE

Senator SMITH. Thank you very much, Mr. Chairman.

Goodness gracious, I wonder if there might be a priest in the house and I could go to confession for being a Republican after listening to all of that. Man. I guess it is an election year. Politics is in the air.

Senator LEAHY. You got that right.

Senator SMITH. I wonder, though, really how in the world this kind of discussion can be productive in terms of addressing the problems that we face in this country. Remember these terrible people are the ones that have produced the power to run this country through the last 100 years, including the Cold War—the machinery that they produced to win the Cold War and to keep a free Nation. So if we just get that on there, just to get a little balance.

NSR, in my view, is a nightmare that does little to protect the environment. In fact, it often is the mechanism that delays the upgrades that would provide for cleaner air. This discussion has ignored the new technology that is being produced every day, that will in fact clean up the air. If they will just be given the opportunity to unleash that technology and not be restricted from doing so by some of the actions that we take here, the results would be beneficial to the environment.

Lest some people think that it is all one-way with me, in 1999 just days after I became chairman of the Environment and Public Works Committee, I opposed a rider that many on my side supported that would have ended NSR enforcement cases. I opposed that rider because I believe that we need to set clear environmental rules and prosecute violators. I opposed it, and at the same time I recognized the merits of the amendment and why they sought it. It was to avoid yet another round of litigation that would not clean up anything and just make lawyers rich. That is all we would ac-

complish with that—provide less clean air and make more lawyers wealthy.

There is a better way, to be frank. NSR, which is anything but clear, has been the subject of near-continuous litigation and revision since its enactment in 1977—continuous revision and litigation. It is no wonder. A few pages of Federal law, led to a 20-page regulation that needed to be, "clarified" by more than 4,000 pages of guidance. Let me repeat that. A few pages of Federal law led to a 20-page regulation that needed to be clarified by 4,000 pages of guidance documents. This should not be a partisan issue. I don't know of anybody that wants to breathe dirty air. I don't. I will speak for myself. I don't think any of my colleagues down here on this side of the table want to breathe dirty air. But it is worth reminding my colleagues on both sides that the Clinton Administration realized the problems with NSR. That Democratic Administration in a proposal by Vice President Gore proposed the NSR reforms that are now in the Bush proposal and brought forth some of the same proposals that are now being roundly criticized on the other side.

I do not believe regulatory efforts alone are enough of an answer. I do not fault President Bush in the least for trying to create order out of this jumbled heap of nonsense and chaos that some generously call an environmental program. Unfortunately, while we have yet to even see drafts of the final or proposed rules, we have already heard threats of future lawsuits. We haven't seen a draft yet, and now future lawsuits are being threatened. That is in addition to the cries—the biggest roll-back of the Clean Air Act since its inception. Biggest roll-back? On what data and analysis is the biggest roll-back based? I haven't seen any data. It was just in the last week that this committee, the Environment and Public Works Committee, received 13 boxes of information and analysis from the Administration's NSR review, long after claims of a roll-back were splashed across our Nation's newspapers and TV news. The majority has even indicated that 13 boxes are not enough. They may decide to issue a subpoena to get some more boxes.

If we do not have enough analysis yet, how can we conclude that this is a roll-back of the Clean Air Act? If you haven't got all the boxes they want, how do you know what is in the boxes? Maybe we do not need a roll-back of the Clean Air Act. If there is enough information to support such a conclusion, why do we need another subpoena?

It seems that again environmental politics is trumping real environmental policy. Good environmental politics is not good environmental policy, believe me, and it is now going to lead to cleaner air. Believe me on that, too. Real environmental progress would be working together to enact consensus, multi-emissions legislation for electrical utilities. Real environmental progress would be working together to build on the success of the acid rain program which worked, frankly, not at a cost of $5 billion as many said, but less than $1 billion, rather than to fight to keep a program that has reduced maybe a pound of emissions per lawyer involved.

Well, the President is trying to move forward on this, just like his predecessor did, but politics dictates that we must oppose a consensus approach. We cannot have a consensus approach because

that would not have a political debate, and then we cannot call all Republicans polluters. That is the bottom line, folks, and that has served as an employment service for Clean Air Act lawyers and has produced very little in terms of environmental benefits. What we need is a legislative solution. That is what we are here for—a legislative solution. Isn't it about time we sit down and do it? Why don't we go in the back and stop all this rhetoric out here in the front and sit down and work it out? You know that solution is? It is a market-based cap and trade program modeled on the acid rain program.

I spent weeks talking to Carol Browner about it in the Clinton Administration and she supported it—a program with clear admission reduction levels and compliance dates set in law, allowing cap and trade. And yes, putting NSR on the table—a program that avoids needless litigation and delay; a program that provides industry with incentives to make deeper and faster reductions that would employ their new technology. That is my goal. That is where I am coming from. That is what I think we all should be working to achieve—the most reductions with the least litigation, and we ought to get started this morning. Unfortunately, that is not going to happen.

Thank you, Mr. Chairman.

[The prepared statement of Senator Smith follows:]

STATEMENT OF SENATOR BOB SMITH, U.S. SENATOR FROM THE STATE OF NEW HAMPSHIRE

Thank you Mr. Chairman.

This must be an election year, because there is definitely politics in the air.

NSR is a nightmare that does little to protect the environment; in fact it often is the mechanism that delays upgrades that would provide for cleaner air. None-the-less, in 1999, just days after I became chairman of the Environment and Public Works Committee, I opposed a rider that would have ended NSR enforcement cases. I opposed the rider because it is my belief that we need to set clear environmental rules and prosecute violators.

At the same time, I recognized the merits of the amendment. It sought to avoid yet another round of litigation. Lawsuits make lawyers richer, but do little to provide for cleaner air—there is a better answer.

NSR—which is anything but clear—has been the subject of near-continuous litigation and revision since its enactment in 1977. And it's no wonder—a few pages of Federal law led to a 20-page regulation that needed to be "clarified" by more than 4,000 pages of guidance documents.

This shouldn't be a partisan issue either—its worth reminding my colleagues on both sides of the aisle that the Clinton Administration realized the problems with NSR. That Democratic Administration—led by Vice President Gore—proposed NSR reforms that are now included in the Bush proposal that is being so roundly criticized.

Although I do not believe regulatory efforts alone are enough of an answer, I do not fault President Bush in the least for trying to create order out of this jumbled heap of nonsense some generously call an environmental program. Unfortunately, while we have yet to see even drafts of the final or proposed rules, we have already heard threats of future lawsuits.

That's in addition to all the cries of this being "the biggest rollback of the Clean Air Act." Biggest rollback? On what data and analysis are those claims based?

It was just in the last week and a half that the committee received 13 boxes of information and analysis from the Administration's NSR review—long after claims of a "rollback" were splashed across our nation's newspapers and television news shows. And the majority has indicated that even 13 boxes are not enough—they may decide to issue a subpoena to get more.

If we don't have enough analysis yet, how can we conclude that this is a rollback of the Clean Air Act?

If there is enough information to support such a conclusion, why would we need to issue a subpoena?

It seems that, again, environmental politics is trumping a real environmental debate that could lead to cleaner air. Real environmental progress would be working together to enact consensus multi-emissions legislation for electric utilities. Real environmental progress would be working together to build on the success of the Acid Rain Program, rather than fighting to keep a program that has reduced maybe a pound of emissions per lawyer involved.

Well that's what I've tried to do. That's what the President has proposed doing. But politics dictate that the majority must oppose a consensus approach. While NSR has served as an employment service for Clean Air Act lawyers, it has produced very little in terms of environmental benefits.

What we need is a legislative solution.

That solution is a market-based, cap-and-trade program modeled on the Acid Rain Program—a program with clear emission reduction levels and compliance dates set in law—a program that avoids needless litigation and delay—and a program that provides industry with incentives to make deeper and faster reductions than required.

That's my goal, and that's what I think we all should be working to achieve—the most reductions with the *least* litigation and delay.

Senator LEAHY. Thank you.

Senator Lieberman is the chairman of the Clean Air, Wetlands and Climate Change Subcommittee, the Committee on Environment and Public Works—quite a mouthful.

[Laughter.]

OPENING STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S. SENATOR FROM THE STATE OF CONNECTICUT

Senator LIEBERMAN. It is a mouthful.

Thanks, Chairman Jeffords and Chairman Leahy. This is an all-Vermont-led hearing. I feel as if I have enlisted in the Green Mountain Boys here today, but it is an honor to be marching alongside behind you. I thank you for convening this hearing, which is aimed at shining a spotlight on these proposals to amend the New Source Review provisions of the Clean Air Act.

This is a very important hearing because the Bush Administration is on the brink of gutting these New Source Review provisions and replacing them with nothing, or with an alternative that is so weak it is essentially nothing. That would be devastating to the quality of air in Connecticut and all across the country. There is a good deal of attention that we are paying in the Senate these days, and the whole country is to so-called "corrupt corporate accounting." I am not saying that the accounting being done here is corrupt, but I am saying that with regard to New Source Review, the environmental accounting that is being done is at best deceptive.

The Administration asserts, for instance, that an increase of thousands of tons of emitted pollutants by a power plant would not be an increase under the law. Why? Because a decade ago, the plant polluted at the higher level. As a result of this change alone, some in EPA have estimated that over 50 percent of the polluters currently required to install pollution controls would, under the President's plans, get to escape regulation and breathe a little easier.

Not so for the rest of us. The more noxious pollutants in the air, the more the American people will have to grapple with more asthma, more cardiac disease and more cancer. That is just not my conclusion. In 1999, EPA sued eight utility companies that it believed

has violated the New Source Review provisions and according to EPA's own analysts, these eight utilities alone, a fraction of all those that are subject to the New Source Review regulations, produced emissions responsible for 14,000 cases of acute bronchitis, 140,000 asthma attacks, and 5,900 premature deaths every year. It is those lawsuits that these rule changes would under-cut, and those health problems that would be a prelude, I am afraid, to many more to come if the Administration's proposed rule change goes through.

In an effort to understand the full environmental and public health consequences of these Administration's actions, as has been indicated here today, last December I was proud to join Chairman Jeffords and other colleagues on the Environment Committee in requesting EPA's analysis of the impacts of these rule changes. Since then, I would say we have been slow-walked and have not truly received answers to our questions. This is subject to two interpretations, I would say. The first is either that the Agency has not done the analyses we have requested, and therefore is gutting the Clean Air Act without adequate evaluation of the consequences. Or second, the Agency has done the analyses and does not want to release them.

Either way, it says that these amendments are not built on a strong foundation. The divergence between EPA's proposal and the position of the United States in these lawsuits is stunning. In legal briefs that were actually signed by Mr. Sansonetti, who is a witness on the first panel, and submitted to Federal courts, the United States argued that any exemption from the New Source Review provisions should be, "narrowly construed," that utilities, "indisputably had notice of EPA's interpretation," of the New Source Review rules and that EPA's interpretation has been held constant for at least the past decade.

These legal arguments directly contradict the EPA proposals we are looking at in this hearing today, which seek to carve out what I would call a cavernous exemption for routine maintenance and which announce a need to clarify previous interpretations of these provisions. Why would there need to be any clarification if, as the Justice Department asserts, the interpretation has not varied for a decade, and industry has had fair notice? I hope that from the witnesses today, we will be able to clarify the Administration's true position on these provisions.

Mr. Chairman, there is room for improvement in the New Source Review program. That is clear. I think it would best be done, however, in concert with the legislation that you and I and others have sponsored, which would limit the emissions of all four major pollutants from power plants, and that legislation was passed out of our committee last month. The reason I think any alteration of New Source Review would best be done in concert with new pollution protections is that otherwise we are going to be replacing the existing environmental regime with nothing, or with something that promises even more pollution, and that is not good for the health and well-being of the American people.

So I congratulate both of you for your leadership. I thank you for convening this hearing. I always preserve the hope that out of this

kind of dialog, even confrontation, will emerge a path to cooperation in the interest of the health and safety of the American people.

Thank you very much.

Senator LEAHY. Thank you.

Senator Voinovich.

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Senator VOINOVICH. Mr. Chairman, first of all I object to the majority's gross negative sinister characterization of the Administration's initiative to clarify New Source Review. It reminds me of the old bogeyman, and that is characterize something as bad before you know what it is or it has been finalized. That being said, Mr. Chairman, thank you for calling today's hearing on New Source Review.

[Laughter.]

Senator LEAHY. Strong message to follow.

Senator VOINOVICH. Yes.

The program has been around since 1977. It requires new facilities to install the best demonstrated technology to control emissions. The program also requires older facilities to update their equipment to state-of-the-art as they undergo major modifications. I think it is important to point out at the very beginning that it is a fallacy to say that any plants are so-called "grandfathered" from the Clean Air Act. On the contrary, every major facility is regulated by the Clean Air Act and must meet defined permit levels, all of them. Every plant must abide by the ozone and PM standards, the MACT standards, the NOx and SIP Call, and every regulatory program applicable to each industry.

It is important to note, particularly for me as the former Governor of Ohio, that our utilities have spent more money to reduce pollution than all of the utilities in the northeastern part of the United States of America. We have reduced pollution significantly since the Clean Air Act, which never seems to be mentioned in any of these hearings.

It is also a fallacy to assume that NSR only applies to utilities and refiners. It applies to every stationary source in the country as evidenced by the testimony you will hear today from Intel. The EPA issued first NSR regulations back in 1980—a 20-page document. Since then, they have produced, as Senator Smith said, over 4,000 pages of guidance documents in an attempt to explain and reinterpret the regulations. I think it is important for this committee to understand that the lawsuits blossoming all over the country were triggered by an EPA guidance in 1998 which changed the definition of routine maintenance. That is a guidance. It was not a regulation. Somebody came out with a new guidance and said that the way we define routine maintenance is wrong, and subjected these utilities to these lawsuits because they said they violated New Source Review. This has led to confusion and misunderstanding by the Agency, the States and the regulated community.

Mr. Chairman, this chart, which I have used once before at a Governmental Affairs Committee hearing, shows by companies are reluctant to subject themselves to NSR permits. Only a fool would put themselves into this maze to do ordinary repair and mainte-

nance of a generating facility. Look at that chart. It is no wonder companies postpone making changes that would improve efficiency and the environment. We need clarification of the regulations. We need to do everything possible to encourage new investments in more efficient equipment that produces fewer noxious emissions. That is why, and I think it is really important for this committee to know that Senator Conrad and I, along with 24 of our colleagues, sent a bipartisan letter to Administrator Whitman in May, calling on her to complete the NSR review and undertake the necessary regulatory process in the future to clarify and reform the NSR program.

Our letter was bipartisan, with 9 Democrats and 17 Republicans all calling for reform. While I am sure that all of us will not necessarily agree on exactly what the reforms should ultimately look like, we did all agree we had to move forward with reform. If members of this committee have concerns with certain aspects of the proposed reforms, then this hearing should take place after the proposed changes are published. At that point, we could debate the merits of the proposed regulations and whether the reforms go far enough. In the letter, we also stated that we have heard of many situations in which confusion over the NSR program is having a dampening effect on utilities' willingness to perform energy efficiency and environmental improvement projects.

Mr. Chairman, I would just like to mention just a few of the examples I am aware of. I think it is important. There is a new technology called dense pack, which enhances the efficiency of turbine blades in coal-fired power plants, and can result in significant improvements by generating more electricity with no additional use of fuel. If one of those generating units could improve efficiency between 2 and 4 percent with this technology, which is a conservative estimate, it would result in additional output of 6,000 to 12,000 megawatts of power in the near term, and significantly reduce emissions of NOx and SOx. This is the equivalent of building 20 to 40 new power plants of 300 megawatts today, with no more emissions. It is my understanding that these dense packs would trigger NSR today. That is where we are.

Another example—the EPA concluded that a plan by the Detroit Edison Company to replace worn turbine blades with new improved blades was non-routine. The replacement would increase the efficiency of two turbines by 4.5 percent each along each unit, to produce 70 additional megawatts of additional power with no increase in fuel consumption, or to continue to producing at past levels while reducing fuel consumption and emissions.

For refiners, I am aware of one example in which tubes failed, resulting in a fire which damaged the remaining tubes. New tubes were installed and the unit was back in production within 2 weeks. However, they were in violation of NSR due to the actual potential emission test. If NSR regulations were followed, the unit should have followed the PSD permit process, resulting in the refinery being out of commission for 5 to 18 months instead of the 2-week period that it took for them to repair it. I think my colleagues should remember that the next time a refinery closes and gas prices spike.

Mr. Chairman, the 26 Senators who signed the letter are not the only ones that think NSR has prohibited reductions in emissions. According to the national coal study commissioned by the Clinton Administration, if the EPA were to return to pre-1998 NSR definitions, we would generate 40,000 new megawatts of electricity from coal-fired facilities and reduce pollution at the same time—reduce pollution at the same time.

One last point, and that needs to be made. The cost of NSR are passed on to the rate-payers. Somehow, people forget that the customer always pays. (INAUDIBLE) about the utilities, about those industries and those bad people that run them? But when it comes to utilities, it is the rate-payers that ultimately have to pay the cost of this.

We have an interesting mix of witnesses today. I am particularly eager to hear from the Administration because those opposed to NSR reform have put a negative spin on their announcement. Isn't that why we are here today?

Thank you, Mr. Chairman.

Senator LEAHY. Thank you.

Senator Biden is the chairman of the Crime Subcommittee of the Senate Judiciary Committee.

Senator Biden.

OPENING STATEMENT OF HON. JOSEPH R. BIDEN, JR., U.S. SENATOR FROM THE STATE OF DELAWARE

Senator BIDEN. Mr. Chairman, thank you for the opportunity to hear these witnesses. I would like to ask unanimous consent that my entire statement be placed in the record, and I would like to abbreviate it if I may.

Senator LEAHY. Without objection, all statements can be placed in the record.

Senator BIDEN. To state the obvious, I would like to thank you and Chairman Jeffords for holding this hearing.

I would like to just say a few things at the outset. We sometimes forget the focus of the Clean Air and Clean Water Acts, which were passed when I came to the Senate in 1972. Their purposes are not to maintain the status quo or to generate more energy. They are to fundamentally change the quality of the air we breathe and the water we drink. The objective is not to stay static, but is to improve the environment; and there is a whole hell of a lot of improvement needed.

Without blaming anyone about anything, I suspect our perspectives are impacted upon by which way the wind blows. I would like for a while to have the wind blow into Ohio instead of out of Ohio. I would like the wind to blow from Delaware into Pennsylvania, rather than from Pennsylvania into Delaware. I was raised in a steel town called Claymont, DE. I lived a tenth of a mile from the Pennsylvania border, a place called Marcus Hook, PA. The Delaware River has more oil refineries—I don't know if it still the case—in any one spot than any other place in America, including Houston, TX.

The prevailing winds blow our way, not the other way. As a kid, I would wake up in the morning. My uncle would drop me off at the local school. If there was mist that day, literally he would turn

on the windshield wiper and there would be an oil slick on the window.

Now, we have improved, but it was not a joke. It was real. It is exactly how it worked.

Where we sit impacts on where we stand on this issue. I am not being critical of the State of Ohio or any other State, but if the coal plants in Ohio and Michigan and other places were 20 feet high instead of 300 feet high, they would just seep over the top and all the folks in Ohio would get the benefit of the acid rain that we get where we live.

I understand the perspective, but we should be straight with each other. Part of what is at stake and the degree to which we feel intense about this depends upon who breathes what and what happens to our constituents. In my State, it is a big deal. If I take issue slightly with my friend Senator Lieberman, is not to clarify what you think, but rather to change what you think. You guys have a chance to correct this.

I am not being facetious. I think we need to bring some focus on this. The President says that he fully is focused on this—but it is a little bit like when we started off the debate on corporate difficulties we now have. When it started, we did not alter very much at all the bill that Senator Sarbanes brought out of committee. We saw overwhelming opposition from about a third to probably a little more than that of the Members of the Senate. Then the public spoke. The public figured out what was going on and the Congress passed it overwhelmingly—not a single dissenting vote. That is my hope for this issue. You have time, fellows. Redemption is at hand. You can change this. I mean it sincerely—you do not have to go this route.

This is understandable; it happens in every Administration. A relatively small group of people who feel very strongly for one position end up having control of it, and move it. Then once the whole deal is figured out by everybody else, there are sometimes second thoughts. My hope is for second thoughts. This is all about cleaner air and cleaner water.

It is a serious issue to the people in my State. We live in a region that is in non-attainment of the Federal ozone standard. We are a tiny State. No place is wider than 55 miles; no place can you drive in a straight line longer than 113 miles. We have the highest cancer rates of any State in the Nation on average. We are one, two or three among the four cancers that are the biggest killers in America. Why in the heck is that? I don't know. We can't prove anything, but I will tell you what—we cannot build a barrier 300, 500, 700, 800, 10,000 feet high. We can't. Nothing we can do about it. Nothing we can do about it. Yet the standards are higher in Delaware than elsewhere and we cannot meet the non-attainment Federal ozone—we are in non-attainment.

The bottom line is, we don't have the ability to meet the current health-based standards. But to state the obvious, not all of our air pollution comes from Delaware. Think about this. I think maybe one of the big wake-up calls every once in a while—I have been here a long time—every once in a while, something happens that is totally unrelated to the issue at hand that sheds light on the issue like nothing else. The entire East Coast was in a fog because

of a forest fire up in North Central Canada. If you ever need a graphic description of how the air we breathe is affected by what happens in other parts of the country, I don't know what more you would need to understand that point.

I would love to do something. I would love to be able to, just for kicks, make every emission that comes out of a coal-fired plant, to have a color, literally. I mean this sincerely. I am not joking. Instead of it being what is emitted, not discernible to the naked eye, I would love to be able to literally color code what was coming out of it, just like we saw that smog and smoke coming down from thousands of miles away in Canada. We would have, as we Catholics say, "a real epiphany," a real epiphany here in America.

My friend from Ohio makes a very valid point—the rate-payers pay. I will lay you 8 to 5, if you went to the rate-payers and said, look, your rates are going to go up 2, 3, 5, 7 percent, but the air you breathe is not going to cause my son's asthma to get any worse. I will get they would pay. I bet they would pay. We don't ask them that question. We don't get there.

I will make one last and concluding point. Under the leadership of Delaware's Governor Carper, now Senator Carper, Delaware's Chrysler wanted to build a new plant—to build the Dodge Durango. They had to build a new paint plant. They debated whether or not they were going to meet the standards of New Source Review. The Delaware officials—the Governor, and our Secretary of our EPA our Secretary of Natural Resources, a guy named DiPasquale—came up with a program that is permitted in which there is a plant-wide applicability limit, the so-called PAL permit.

They did a heck of a job. Working with EPA, one of the first PAL permits was issued to the plant in 1996. The permit, the first of its kind in the automotive industry, was issued in 99 days. Everybody acknowledged we have to reform some of this—it was issued in 99 days. The plant continues to operate under flexible permit; and as an added benefit, it saved Chrysler $13 million in increased productivity and pollution prevention costs.

This can be a win-win situation. Chrysler won with a permit giving the flexibility to meet production needs. Delaware citizens won through reduced air pollution. Clearly the PAL permits are one of the many ways industry can meet its responsibility to prevent pollution, while continuing to grow and expand under New Source Review rules. The Administration says it wants to promote the use of PAL permits. As part of the NSR reform, it has proposed a new PAL rule, but the similarity between the PAL permit that you all are proposing and the one, the old PAL permit that we used, is one in name only. In the words of the bluegrass singer Guy Davis, "This permit is a two-dollar chicken on a three-dollar plate."

The Administration is using the successful Delaware PAL record to support their new version, but the new version is fundamentally different. It gives the industry fewer regulatory requirements, but it fails to get in return pollution reductions that could come from state-of-the-art pollution control technology. The new version would force States to issue those new permits without gaining the benefits derived from the old permit.

Not surprisingly, Delaware does not believe it could achieve the same pollution prevention results under the new rule. It is oppos-

ing the reform proposal. In a letter sent to Administrator Whitman, Natural Resources Secretary DiPasquale said the following:

"Fundamental differences in Delaware's approach versus EPA's apparent proposal make the use of our permit to support your proposal in appropriate. The Delaware approach ensures the use of state-of-the-art pollution control technology and lower emissions per emission unit than would otherwise be attained. Delaware believes this level of commitment from the source is needed in order to ensure those obtaining a PAL are truly environmental leaders and are capable of complying with a permit that offers streamlined regulatory requirements and flexibility along with the responsibility of self-regulation."

Don't confuse what we did in Delaware with what you are proposing now. This is serious stuff. These rules are designed to protect public health, not to protect industry from fulfilling its civic duty. If it is going to cost more, why don't we engage in a little bit of truth in lending here? I sued to be on the Banking Committee. We went through this whole truth in lending thing 28 years ago—a gigantic fight. Why don't we have a little "truth in lending" in pollution control? If in fact you all tell us it is going to cause these staggering increases in the cost of energy, tell us what they will be and let the voters choose whether or not they would rather breathe cleaner air or pay a little more money.

So I look forward to the hearing, Mr. Chairman. Thank you for your time, and I yield the floor.

Senator INHOFE. Mr. Chairman, Senator Hatch has yielded his time to me for opening statements.

Senator LEAHY. Well, he would have to yield to somebody on the Judiciary Committee.

Senator INHOFE. All right. Let me throw something else at you. Could I make an opening statement and then defer my 5 minutes, since I was the early bird at the meeting and I was the first one here?

Senator LEAHY. We are going to make sure that you are going to be one of the first to be heard and you will be able to make a statement during that time.

Senator INHOFE. Wouldn't it be easier to do it now?

Senator LEAHY. I would like to hear from Mr. Sansonetti, and we will have him——

Senator INHOFE. They have been sitting there for an hour already. I don't think another 5 minutes is going to bother them. Is it going to bother you guys?

Senator LEAHY. The chairman of your committee said to let you go, so go ahead.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. All right. Thank you very much.

As a lot of you know, in March 2001, Senator Breaux and I wrote the first congressional letter on the New Source Review program to Vice President Cheney. In our letter, "EPA's flawed and confusing NSR policies will continue to interfere with our Nation's ability to meet our energy supply needs," and I ask unanimous consent that be placed in the record at the conclusion of my remarks.

Senator LEAHY. Without objection, it will be.

[The referenced document follows:]

UNITED STATES SENATE,
Washington, DC, March 23, 2001.

Hon. RICHARD B. CHENEY,
Vice President of the United States of America,
Washington, DC.

DEAR MR. VICE PRESIDENT: In your capacity as the chairman of the National Energy Policy Development Group, we are writing to bring to your attention our concerns that, unless addressed, the prior Administration's EPA's New Source Review ("NSR") enforcement policies will continue to interfere with our nation's ability to meet our energy and fuel supply needs. We strongly urge that the Administration take into account these concerns in developing its national energy plan.

As you are very much aware, the Nation faces a potential energy supply shortage of significant dimensions. The California energy crisis is receiving the greatest attention in the media. However, major challenges exist in meeting demands for gasoline and other fuels, especially in the Midwest. More troubling, current projections suggest fuel shortages and price spikes—far exceeding last year's problem. These are due to a number of factors including: difficulties in making summer-blend Phase II reformulated gasoline; EPA hurdles to expanding refinery capacity, and the overall increase in energy demand.

Unless reviewed and addressed, EPA's implementation of NSR permitting requirements will continue to thwart the nation's ability to maintain and expand refinery capacity to meet fuel requirements. In 1998, EPA embarked on an overly aggressive initiative in which it announced new interpretations of its NSR requirements that it has applied retroactively to create a basis for alleging that actions by electric utilities. refineries and other industrial sources taken over the past 20 years should have been permitted under the Federal NSR program. We also understand that these new interpretations conflict with EPA's regulations, its own prior interpretations and actions. and State permitting agency decisions.

EPA's actions have been premised heavily on its reinterpretation of two elements of the NSR permitting requirements. First, EPA's regulations specifically exempt "routine maintenance, repair and replacement" activities from NSR permitting. EPA now claims that projects required to be undertaken by utilities and refineries over the past 20 years to maintain plants and a reliable supply of electricity and fuels were not routine and thus should have gone through the 18-month, costly NSR permitting process. EPA's enforcement officials are asserting this even though, for more than two decades, EPA staff have had full knowledge that these maintenance, repair and replacement projects were not being permitted.

A second ground for many of EPA's claims has to do with whether projects resulted in significant emissions increases. By employing a discredited method for determining whether emissions increases would result from a project-using so called "potential emissions" instead of actual emissions, EPA is asserting that numerous projects resulted in emission increases when in reality they had no effect on emissions or were followed by emissions decreases.

EPA's NSR interpretations have created great uncertainty as to whether projects long recognized to be excluded from NSR permitting can be undertaken in the coming months to assure adequate and reliable energy supplies. Electric utilities and refineries have expected that they could undertake maintenance activities, modest plant expansions, and efficiency improvements without going through lengthy and extraordinarily costly NSR permitting, as long as the project involved either routine maintenance or no significant increase in actual emissions.

Now, in light of the new interpretations, utilities and refineries find themselves in a position where they cannot undertake these very desirable and important projects. This is not an acceptable result when the Nation is faced with severe strains on existing facilities. Against this backdrop, we strongly urge that the National Energy Policy Development Group:

- give investigation of EPA's implementation of its NSR requirements a high priority;
- suspend EPA's activities until such time as there has been a thorough review of both the policy and its implications;
- clarify whether the implications of EPA's new NSR interpretations and its enforcement initiative are being reviewed by the White House Office of Energy Policy and the Secretary of Energy prior to actions that could undermine energy and fuel supply; and
- establish guidelines to assure that EPA's application and enforcement of its NSR requirements will not interfere with the Administration's enemy and fuel supply policy. Requirements should be developed, which are consistent with responsible implementation of the statutory NSR requirements.

Specifically, to assist you in assessing the implications of NSR on meeting the nation's energy and fuel supply demands, you may want to obtain the following: (1) all requests since January 1, 1998 for information under section 114 of the Clean Air Act issued to facilities and companies in any sector involved in energy and fuel supply: and (2) notices of violation issued to, and complaints tiled against, any such company and/or facility alleging NSR violations during that period. We are submitting a similar request to EPA today.

Thank you for your consideration of this matter. We look forward to working with you in the future to develop environmental policy, which further protects human health and the environment and works in concert with sound energy policy.

Sincerely,

JAMES M. INHOFE,
U.S. Senator.

JOHN B. BREAUX,
U.S. Senator.

Senator INHOFE. I would like to publicly thank the Administration for being responsive to Senator Breaux's and my concerns. It took real courage to do this, to pursue NSR reforms. It takes courage because this is always misconstrued as a sneak attack on the environment. Despite all of the partisan rhetoric we have heard today about NSR reforms and the process of developing these reforms, make no mistake, President Bush's decision will result in a cleaner environment and greater energy security.

I am not going to go into this because it has already been touched upon by Senator Smith—that is, it was the Clinton Administration that developed the draft proposals that accumulated over 130,000 comments on NSR reforms. It was Clinton's Environmental Chief, Bob Perciasepe, who wrote a letter outlining the NSR reforms, which are similar to President Bush's reforms, and called for the Bush Administration to consider formalizing the reforms. I would like to place this letter in the record also.

Senator LEAHY. Without objection, the letter will be placed in the record.

Senator INHOFE. From my tenure as the chairman of the Senate's Clean Air Subcommittee, I know that New Source Review is a major issue for the energy sector. In fact, I held the very first congressional hearing on New Source Review in your State of Ohio back in February 2000. I could not believe my ears of what I was hearing. We heard from companies who were trying to make environmentally friendly modifications to the facilities being stopped dead in their tracks, ironically by the Clean Air Act. As a result of my March 2001 letter, a number of stakeholders from all over the country have contacted me to discuss their experience with the NSR program. These examples further shocked me, so much so that Senator Specter and I sent a letter to the EPA and DOJ outlining some of the examples, and I would ask that that letter be made a part of the record.

Senator LEAHY. Without objection, the letter will be made part of the record.

[The referenced document follows:]

UNITED STATES SENATE,
Washington, DC, June 20, 2001.

HON. CHRISTINE TODD WHITMAN, *Administrator,*
U.S. Environmental Protection Agency,
Washington, DC.

DEAR ADMINISTRATOR WHITMAN: Thank you for your May 14, 2001 response to the Inhofe letter, regarding all requests for information under § 114 of the Clean Air Act and Notices of Violation (NOVs) issued to the energy sector. The information sub-

mitted was very useful and has provided us with a greater appreciation of the impact of the New Source Review program on our energy sector.

We have serious concerns that continuation of the prior Administration's New Source Review ("NSR") enforcement policies may interfere with our nation's ability to meet our energy and fuel supply needs. For that reason, we were very pleased to see that the President has included in his energy policy an Environmental Protection Agency (EPA) and Department of Energy review of the NSR program and a Department of Justice (DOJ) review of the NSR enforcement initiative.

Prior to the Inhofe letter, we knew that New Source Review was a major issue for the energy sector. However, as a result of the Inhofe letter, a number of companies from all over the country have contacted us to discuss their experience in responding to EPA's information requests, the first step EPA takes in initiating an NSR enforcement action. The information included in your response to the Inhofe letter and the information received from these companies has raised a number of issues for which we would appreciate additional information. Therefore, we respectfully request the following information:

• Information and examples submitted to our offices by companies over the past several weeks suggests that the response provided by EPA does not include all of the § 114 requests issued by EPA since 1998. Specifically, our offices have become aware of facilities that have received § 114 requests without any official cover letter. These requests were apparently not included in the information sent to Sen. Inhofe. Please explain why these requests were excluded from the information presented to Sen. Inhofe's office. In addition, please explain how often the Agency submitted § 114 requests without the appropriate cover letter, and the reason for this apparent informality.

• Additionally, it has come to our attention that, in some cases, the § 114 requests came in the form of a photo-copied document with the name of one facility scratched out and the name of another facility penciled in. We are interested in knowing how many § 114 requests are issued in this manner and the reason for using photo-copied requests with new names penciled in. Please include a copy of each of these requests and the names of the individuals in both the regional offices and headquarters who signed off on the § 114 request in this form. Are § 114 requests usually allowed to be issued in this manner?

• According to individual companies that contacted our offices, some § 114 requests asked for information which had already been produced. We are interested in understanding further how often this occurs and the rationale for asking for the same information twice. In instances where the same information is requested again, does the company have to provide the same documentation again or can the company simply refer to a previous submission?

• Similarly, some companies have also stated that § 114 requests referred to attachments that were not provided. We would request your staff to review the § 114 requests sent out over the past 2 years to determine how often the § 114 requests refer to attachments that are not provided.

• In addition, we are puzzled by the fact that upon receiving these § 114 requests, some company officials received follow-up calls apologizing for the § 114 request, requesting that the recipient "ignore" or "put on hold" the request. Please tell us how many of these calls were made and the reason for the retraction. What are the legal implications for the company of having received a § 114 request followed-up by a "disregard call?" Is the company still obligated to respond to the request? If not, how does the company adequately document that the § 114 letter is not being pursued? In light of these incidents, please provide us with information on any requests for information under section § 114, which have been submitted to a facility and, subsequently, withdrawn for any reason, including the date of the submission and withdrawal of the § 114 request.

• Given these incidents, we would also appreciate information on the procedure that EPA personnel must follow before issuing information requests under section § 114 of the Clean Air Act. Please describe this procedure and all cases of a violation of such a procedure since 1998, including the name of the facility affected, the date of the violation of the procedure, the names and titles of any Federal employees involved, the supervisors of the Federal employees involved, and the nature of the specific violation of the procedure. What quality controls procedures does EPA have in place to assure compliance with these procedures?

• Unfortunately, because of the fear of retribution, many of the parties receiving these § 114 requests have requested that we not disclose their names. None-the-less, we find it very troubling that we did not see any of these § 114 requests included in EPA's May 14, 2001 response. In your testimony before the Senate Committee on Environment and Public Works on May 15, 2001, you responded to inquires on these issues by stating that the problem is being addressed. Please explain to us

what actions you are taking to assess the magnitude of these potential procedural missteps and the measures that you are planning to take to address the problem.

- In addition, we would also like information on all requests for information since 1998, which may not explicitly cite section § 114, but derive the power of the requests from this section.
- With regard to the NOVs and complaints submitted, please provide us with a list of the types of projects cited in the NOVs and complaints.
- Finally, we would appreciate an explanation as to why EPA apparently chose not to comply with the requirements of the Paperwork Reduction Act (PRA) when it issued these § 114 requests to the electric utility companies and refineries. As you maybe aware, under the PRA and the Office of Management and Budget's (OMB's) implementing regulations, an agency such as EPA is not to conduct or sponsor the collection of information without first consulting with and obtaining approval from OMB. Under the PRA, this consultation and approval process is intended to ensure that, among other things, the agency's information collection request is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility.

As you maybe aware, the PRA applies to all information collection requests consisting of essentially identical questions or requests for information imposed on 10 or more persons. OMB's implementing regulations further specify that any collection of information addressed to all or a substantial majority of an industry is presumed to involve 10 or more persons. The information you previously submitted to Sen. Inhofe indicates that this threshold requirement has been met with respect to both the electric utility and refinery sectors.

Since the § 114 requests you previously provided to Sen. Inhofe do not display OMB control numbers, should we assume that EPA has concluded that those requests are not subject to the PRA? If so, what is the basis for EPA's conclusion? We are aware of the fact that the PRA makes an exception for requests for information submitted during the conduct of a civil action to which the United States or an agency thereof is a party, as well for requests made in conjunction with an administrative action or investigation involving an agency against specific individuals or entities. But if this is the provision of the PRA on which EPA is relying, we must remind you that OMB's implementing regulations clarify that this exception applies only after a case file or equivalent is opened with respect to a particular party. Are we to understand that EPA has opened a case file for each and every one of the electric utility companies and refineries to which EPA has submitted § 114 requests? If so, we would appreciate your formally confirming this for us. If not, then the question remains, what is the basis for EPA's apparent conclusion that the PRA does not apply? In particular, we direct your attention to the provision of the PRA that specifies that the PRA does apply to the collection of information during the conduct of general investigations undertaken with reference to a category of individuals such as a class of licensees or an entire industry.

We respectfully request this information no later than July 13, 2001. A timely response is requested, so that we can assess the impact of these enforcement policies on our energy supply. We trust that producing such information will bring to light some interesting facts for your review of the New Source Review program.

These examples concern us because they suggest a sloppy and poorly managed enforcement initiative with little regard to the impact on companies that often have to unearth and certify up to 20 years of information in 30 days. Additionally, it costs a small facility hundreds of man hours and hundreds of thousands of dollars to comply with these information requests. Because these companies face the full force of the law and must respond to any information request, the government must bear the responsibility of being judicious in undertaking these requests.

Therefore, we further request a full investigation by the EPA's Inspector General, involving procedural errors and mismanagement. Additionally, we request that you share this information and any findings with DOJ, so DOJ can use this information for their review. We will also be requesting that, during the NSR enforcement review called for by the National Energy Plan, DOJ take a serious look at the extent to which these and other procedural errors exist within the NSR enforcement initiative.

We understand that you are still working hard to place your team together, but we firmly believe that these issues must be investigated immediately. If you have any questions, please feel free to contact us or have your staff contact Louis Renjel with Sen. Inhofe's staff.

Sincerely,

JAMES M. INHOFE,
U.S. Senate.

ARLEN SPECTER,
U.S. Senate.

Senator INHOFE. As if it is not bad enough that no one really understands NSR as a policy and NSR is stopping projects which would make facilities cleaner and more efficient, under the NSR enforcement initiative, I saw outrageous examples of bureaucratic harassment. There were examples of information requests submitted to companies by EPA employees without any official authorization. There are other information examples in the form of photocopied documents with the name of one facility scratched out and the name of another facility penciled in. There are also requests which were addressed to one facility, but referred to operating units of another facility half-way across the country, just to mention a few.

I fully support strong enforcement of the Nation's clean air laws, but I am not going to stand by and watch what appears at the minimum to be a gross incompetence and carelessness by the Federal employees who appear to care nothing for the costs involved. As a former businessman, I have personally dealt with similar behavior from the government, and I often wish that more people had a background like I had so they would know what it is like to be overregulated when nothing is going to be gained from it.

I think Congress and the executive branch are going to have to understand how these various layers of regulation impact sections of the economy. We have a chart here I have used before, and this chart shows refiners who are currently working at almost 100 percent capacity, are going to be simultaneously hit with a multitude of regulations in the next few years. NSR will make it close to impossible for refiners to make these environmental upgrades. Higher energy prices affect everyone, but you know, you had, Senator Voinovich, someone come in and testify, I think his name was Tom Mullen, that it affects the poor the worst. Twenty-five percent of the people have to make a decision as to whether they want to heat their homes or have groceries. That was your constituent that made that testimony. Oklahoma is a poor State, so that percentage is much higher.

I think the NSR reforms enjoys the support of a wide range of interests. You have States' attorneys general, you have labor unions. I would like to submit two letters, one from the U.S. Chamber of Commerce and one from the International Brotherhood of Boilermakers to support the NSR reform at this point—without objection so ordered.

[The referenced documents follow:]

CHAMBER OF COMMERCE OF THE UNITED STATES OF AMERICA,
Washington, DC, July 15, 2002.

Hon. JAMES INHOFE,
U.S. Senate,
Washington, DC.

DEAR SENATOR INHOFE: I am writing on behalf of the U.S. Chamber of Commerce (U.S. Chamber), the world's largest business federation, representing more than three million businesses and organizations of every size, sector, and region, to express our support for reform of the New Source Review (NSR) program. NSR, in its current form has impeded environmental progress and energy production for decades. The revisions recently announced by the U.S. Environmental Protection Agency (EPA) are a good beginning to reforming a deeply flawed program.

The NSR program concerns the Clean Air Act (CAA) emissions standards applicable to significant new and modified stationary sources. In 1980, EPA established a regulatory exclusion for "routine maintenance." The scope of this term, however, re-

mains subject to debate. A clear administrative interpretation of "routine maintenance" would be an improvement over the present situation, which is mired in complexity and confusion.

Reducing the problems with the NSR program is vital. Governments should not unnecessarily impede the work of the private sector. The NSR program is a classic example of bureaucratic complexity. More than 20 years after the initial regulation, a plant manager cannot determine with any certainty whether planned maintenance activities will subject the facility to millions of dollars of extra costs.

The NSR program, as presently constituted, is a severe impediment to increasing domestic energy supply. Electric generating plants cannot make even minor changes to their operations without running the risk of ruinous enforcement actions that would impose huge fines and enormous compliance costs on their facility. National energy policy, indeed national security, requires the removal of every obstacle to increased domestic energy production.

The National Energy Policy Report directed EPA to review the NSR program, and report on its effect on environmental protection and energy production—EPA's review found that the NSR program has impeded or resulted in the cancellation of projects that would maintain or improve reliability, efficiency, or safety of existing power plants and refineries.

On June 13, 2002, EPA announced a set of revisions to the NSR program. Among other changes, facilities would be able to make physical changes to their plants without obtaining an NSR permit, if their emissions do not exceed a plantwide cap. Projects would be excluded from NSR requirements if they result in a net overall reduction of air pollutants. EPA would also establish a safe harbor test. Projects whose aggregate costs are below the threshold established by the safe harbor test would be exempt from NSR requirements.

These proposals promise a major improvement to the NSR program. They will lead to improvements in the environment, as regulatory certainty will allow facilities to perform routine maintenance and repairs without the fear of triggering NSR requirements. Plants have deferred routine maintenance, which would have improved safety and decreased emissions, due to the potential costs of NSR requirements. With the NSR program modifications, overall emissions will be reduced. The reforms, particularly the plantwide cap, will benefit facilities by allowing increased operational flexibility. The revised NSR program will simplify an overly complex program.

The recently announced NSR reforms are long overdue. The regulations to be made final later this year were proposed in 1996. The proposals requiring notice and comment rulemaking will not be in effect until 2004, at the earliest.

The U.S. Chamber supports reform of the NSR program. The U.S. Chamber urges the Senate to encourage these efforts to improve environmental progress and energy production.

Sincerely,

R. BRUCE JOSTEN.

STATEMENT OF ANDE ABBOTT, DIRECTOR, LEGISLATIVE DEPARTMENT, INTERNATIONAL BROTHERHOOD OF BOILERMAKERS

Chairman Jeffords, Chairman Leahy, and members of the committees, my name is Ande Abbott and I am the director of Legislation for the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers, AFL–CIO. I thank you for this opportunity to present our views.

Commonly referred to as the Boilermakers Union, we are a diverse union representing over 100,000 workers throughout the United States and Canada in construction, repair, maintenance, manufacturing, professional emergency medical services, and related industries. Boilermakers, who make and maintain industrial boilers and the pollution control equipment they use, have had a long-time commitment to a clear, effective and reasonable new source review ("NSR") policy. We support the recent efforts of this Administration to clarify the program. The efficiency of our facilities and the safety of our workers hang in the balance.

First, let me be clear today that Boilermakers do not oppose the Clean Air Act, nor do we oppose its rigorous enforcement. In fact, construction lodges of our union look forward to doing much of the actual work for the installation of new technologies and controls at utility plants and for industrial boilers across this region and the country. In reference to the NOx control program alone, our international President Charlie Jones recently wrote:

"The EPA estimates that compliance measures will cost about $1.7 billion a year. A sizable portion of that money will go to the Boilermakers who do the work necessary to make the additions and modifications required by the SCR technology."

Aside from NOx control, Boilermakers have always led the way on Clean Air Act issues. For example, Boilermakers were pioneers in installation of scrubbers and further in fuel-substitution programs at our cement kiln facilities. In short, Boilermakers have been there to meet the challenges of the Clean Air Act, to the benefit our members and all Americans that breathe clean air.

However, Boilermakers could not support the EPA's 1999 recent interpretation of its authority under the New Source Review program. NSR, correctly interpreted as we believe the Administration's clarification does, forces new sources or those undergoing major modifications, to install new technology, like the technology President Jones mentioned. We support NSR in that context.

But, when NSR is applied to the routine maintenance policies and schedules of existing facilities, very different results occur. In those cases, facilities are discouraged from undertaking routine actions for fear of huge penalties or long delays or both. By applying NSR in that way, we are pretty sure that Boilermakers won't have the opportunity to work on maintenance projects that we know are extremely important to energy efficiency. Just hearing about recent events in California is enough to make the case that facilities need to be as efficient as possible. We now have read that New York maybe facing similar problems. The New York Times reported just a few days ago that, the State "is unexpectedly facing the potential for serious power shortages over the next couple of months." Now is definitely not the time to play with the reliability of power grid.

Efficiency is not the only reason to encourage routine maintenance. Experienced professionals or Boilermakers new to the trade can both tell you: maintenance is necessary to maintain worker safety. Electric generating facilities harness tremendous forces: superheater tubes exposed to flue gases over 2000 degrees; boilers under deteriorating conditions; and parts located in or around boilers subjected to both extreme heat and pressure. Any EPA interpretation which creates incentives to delay maintenance is simply unacceptable to our workers.

Some critics of the June 13 action by the Administration have contended that the NSR decision was made with insufficient attention to public process. This simply has not been the experience of the Boilermakers or other unions working on this project. The U.S. EPA held four public hearings in each region of the country. Paul Kern, the recording secretary of our Local 105 in Piketon, Ohio, offered a statement at the hearing in Cincinnati. In addition, it is our understanding that over 130,000 rulemaking comments were received on this initiative. Given our experience with certain regulations that just seem to appear over night, the Administration's action on NSR seem pretty open and fair to us. When you compare the current clarification to the way the program changed by in 1999—without any rulemaking process whatsoever—the Administration's June 13 announcement looks all the better!

Boilermakers are not just workers; they are also consumers of electricity that work hard for their wages. One item often lost in the mess regarding NSR is that capital expenditures not justified for environmental protection are still passed along to ratepayers. Unfortunately, the less money you make, the greater the percentage of your paycheck goes to your electricity bills. According to Energy Information Administration data, those living at or near the poverty level pay 4 to 6 times the percentage of their income for power. So, advocates of misusing the NSR program hurt those least able to afford it the most!

As you can see, Boilermakers have never asked for repeal or substantial revision of the NSR program. We encourage the development and installation of new technology, and we stand ready to continue to train and apprentice workers to meet the needs of the Clean Air Act. However, when the NSR programs goes where it wasn't intended—and discourages the very maintenance, repair and replacement activities that constitute the livelihood of Boilermakers—we must strongly object. Thanks for the opportunity to make a statement.

Senator INHOFE. President Bush will not place layer after layer of regulations without considering the energy implications.

Mr. President, we now have an energy crisis in this country——

Senator LEAHY. I will settle for "Chairman," as one of the very few members of the Judiciary Committee who has never run for President.

[Laughter.]

Senator INHOFE. I see. That is true. Well, we heard some really great Presidential speeches already today, and I kind of enjoyed them. The season is starting early.

[Laughter.]

But we do have a crisis and it is not a laughing matter, and the extreme left environmental extremists do not want to drill, they do not want to refine, they do not want nuclear energy. I don't know what they want. You cannot run the most highly industrialized Nation in the history of the world on windmills.

Thank you, Mr. Chairman.

Senator LEAHY. Thank you.

Mr. Sansonetti is the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice. He is the top law enforcement official on environmental issues. He will go first, followed by Jeffrey Holmstead, who is the Assistant Administrator for Air and Radiation at the U.S. Environmental Protection Agency.

In your statement, Mr. Sansonetti, please also tell us whether you had any involvement with development of the Administration's energy policy, including specifically its Clean Air Act stance before you were confirmed to your current post as chief environmental enforcer.

Please go ahead, Mr. Sansonetti.

STATEMENT OF THOMAS L. SANSONETTI, ASSISTANT ATTORNEY GENERAL, ENVIRONMENT AND RESOURCES DIVISION, U.S. DEPARTMENT OF JUSTICE

Mr. SANSONETTI. Chairmen Leahy and Jeffords, members of the committees, I am pleased to be here today to discuss the Department of Justice's enforcement activities on behalf of the New Source Review program. We take the health impacts of air pollution seriously, and our enforcement activities in this area are an important part of the effort to clean up our air and to protect public health and the environment.

Accordingly, we are continuing to prosecute vigorously a variety of actions in connection with the NSR program. One point that I want to state at the outset is that there is much more to this program than the regulation of power plants. We are targeting a variety of industries. This approach has resulted in significant gains for public health and the environment across the United States.

In addition, the committee should be aware that the NSR litigation is only one part of the Environment and Natural Resources Division's enforcement docket. We have many other enforcement actions focusing on other environmental laws, including for instance the Clean Water Act, and we have to thank both of the Chairmen for our Vermont pure natural spring water that you supplied us with today. We are committed to vigorously enforcing all of these laws, as well as NSR violations.

In the late 1980's, the Department of Justice began bringing enforcement actions for NSR violations. Our primary goal in these actions has always been the protection of the public health and the environment by compelling facilities that are in violation of the law to install state-of-the-art pollution controls. We also seek to impose appropriate civil penalties for past violations so as to discourage

noncompliance and ensure a level playing field between those who comply with the law and those who fail to do so. Over time, working with our colleagues at EPA, we developed a strategy of targeting industries that had significant compliance problems with regard to NSR requirements that were major sources of air pollution. I would like to describe just a few or our recent successes in those areas.

Beginning in the late 1980's, we focused our first NSR enforcement efforts on the wood products industry. In a landmark settlement, we resolved an action against Louisiana Pacific in 1993 with a consent decree that required the company to install pollution controls at its facilities nationwide. Since then, we have had a string of successes in obtaining similar settlements from other major wood product manufacturers. In March, we filed a settlement with Boise Cascade that will require reductions of up to 95 percent of the emissions from the company's eight plywood and particle board plants. Boise Cascade will also pay millions in civil penalties in its supplemental controls to reduce emissions at its various plants. The State of Louisiana which joined us in bringing this action will receive a portion of that civil penalty.

We have also been very successful in reaching settlements for NSR violations with several major refiners. After prevailing at trial on the issue of liability, we joined with the EPA and the Wisconsin Department of Justice in January to announce a settlement with Murphy Oil, which will dramatically cut sulfur dioxide emissions from the company's Wisconsin refinery. Murphy Oil will also pay a civil penalty of $5.5 million, the largest ever leveled in Wisconsin in an environmental enforcement case. Also last December, we announced comprehensive environmental settlements with Conoco, Navajo Refining and Montana Refining Company that are expected to reduce harmful air emissions from seven petroleum refineries by more than 10,000 tons per year. Several States joined in those settlements.

These are only a few of the many settlements that we have reached with major refiners in the last 18 months. All together, these settlements cover 37 refineries and almost 31 percent of the Nation's domestic refining capacity, and are expected to reduce air emissions of nitrogen oxides and sulfur dioxides by more than 150,000 tons per year.

Now, what about coal-fired utilities? The Department has filed 10 enforcement actions against coal-fired utilities. So far, we have reached settlements with two companies and agreements in principle with two others. Our most recent success in this area came in January when we joined forces with the State of New Jersey to reach a settlement with PSEG, in which it will spend over $337 million to install state-of-the-art pollution controls to eliminate the vast majority of sulfur dioxide and nitrogen oxide emissions from two New Jersey coal-fired power plants. The combined effect of the pollution controls will reduce the company's sulfur dioxide emissions by 90 percent and nitrogen oxide by over 80 percent. PSEG also agreed to pay a civil penalty of $1.4 million and to spend at least $6 million on three pollution reduction projects. As Attorney General Ashcroft stated, "This important settlement reflects our

continuing commitment to enforce vigorously the Clean Air Act to protect public health and the environment."

What about the current status? We currently have 11 pending enforcement actions in which NSR violations are the main issue. Eight of those eleven involve power plants. The remaining three involve other industries. Of the eight pending power plant cases, five are currently in active discovery on liability issues, with one of these scheduled to go to trial this year in October. In the other three pending power plant cases, the parties are either engaged in settlement negotiations or discovery has been stayed because the district courts are awaiting the 11th Circuit's decision in *TVA* v. *EPA*. That case was argued in May. The 11th Circuit has not reached a decision and has recently referred that case to mediation.

Last, the Department's Office of Legal Policy has reviewed the existing enforcement actions for their consistency with the Clean Air Act and determined that the existing enforcement actions are supported by a reasonable basis in law and fact. It further stated that the Division will continue as it has during the pendency of this review to prosecute vigorously the EPA's civil actions to enforce the New Source Review provisions.

In conclusion, I would like to assure these committees that the Department of Justice takes very seriously its obligation to enforce the existing laws and to protect public health and the environment. As directed by the Attorney General, we will continue to vigorously prosecute the NSR enforcement actions and to defend the action brought by TVA against EPA.

I will be happy to answer any questions you have about my testimony.

Senator LEAHY. Mr. Sansonetti, you asked several questions yourself and answered them, but I did not hear the answer, which can be a simple yes or no.

Mr. SANSONETTI. It is a no.

Senator LEAHY. You had no involvement with development of the Administration's energy policy, including specifically its Clean Air Act stance before you were confirmed here?

Mr. SANSONETTI. That is correct, sir.

Senator LEAHY. Thank you.

Mr. Holmstead.

STATEMENT OF JEFFREY HOLMSTEAD, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. HOLMSTEAD. Good morning, Chairman Jeffords, Chairman Leahy and members of the committee. Thank you for giving me the opportunity today to discuss the changes that the EPA is planning on making to the New Source Review program.

I must admit that I have been looking forward to this opportunity because for some time now, I have been wanting to try to clear up some of the misperceptions that are circulating about the NSR program. Since I arrived at EPA almost a year and a half ago, I have spent much of my time learning about the details of this very complex program and I am eager to share with you what I have learned.

As several of you have mentioned, Congress created the New Source Review program in 1977 to allow for industrial growth without compromising our progress toward cleaner air. To accomplish this goal, the NSR program requires companies to install state-of-the-art pollution control equipment when they build a new major-emitting facility or when they modify an existing plant in a way that results in a significant emissions increase. We believe that the New Source Review program should provide a bright line for industry and regulators to follow in meeting these statutory requirements, but it does not. Over the years, the program has become increasingly complicated, often leading to protracted litigation. For example, as Tom mentioned, EPA filed several NSR-related lawsuits against power plants in 1998 and they are still far from being resolved. Now, as Tom has said and as Governor Whitman has repeatedly said, we are committed to pursuing those cases, but we do not believe that a properly designed program should need protracted and uncertain litigation to make it work. EPA is attempting to end this system of regulation by litigation by putting common sense back into this important program.

In May 2001, the President's National Energy Policy Group asked EPA to review the NSR program. During our review, we met with more than 100 public officials, industry groups and environmental and consumer groups. We held a series of public meetings and public hearings around the country, and we evaluated more than 130,000 public comments, although I should mention that probably about 1,000 of those were substantive comments; about 129,000 were postcards that were virtually identical.

The review found that NSR, as it applies to new facilities, works quite well and has provided substantial environmental benefits. As the current program applies to existing facilities, however, we found quite the opposite. It has become a source of frustration that has impeded or caused the cancellation of many projects that would have improved reliability and energy efficiency in existing plants. Now, perhaps this would be an acceptable price to pay if the program were effective in improving air quality. As it relates to existing sources, however, and again I want to state we are not talking about how the program applies to new sources, but as the program relates to existing sources, there is no evidence that it actually has improved air quality. We know that in some cases it has effectively prevented companies from making changes at their plants that would have reduced emissions.

We also know, perhaps more importantly, that it has created an artificial incentive for companies to keep their emissions high because under the current program, this is the best and in some cases the only way for a plant to preserve its operational flexibility. This is entirely consistent with the current regulations.

Now, no one should be surprised to hear that there are problems with the current NSR program. Officials from the last three Administrations, State and local government leaders, Members of Congress from both political parties and consumer and environmental groups have all acknowledged that the New Source Review program is not working as well as it should. For the past 10 years, practically half of the life of the program, EPA under both Democratic and Republican Administrations has been engaged in a for-

mal process to figure out how to make the NSR program better. I am pleased to say that we are finally moving forward on this effort.

Last month, we announced major improvements to the New Source Review program, and rather than summarize those, I would just refer you to the documents that I believe that you already have. But let me just mention that those are really two different sets of improvements. The first several, as you have mentioned, will be final rules that will adopt proposals that were first made under the Clinton Administration back in 1996. That accounts for, the way we count them, five of the eight improvements to the program that we are making.

In addition, we are now at the initial stages of going through I believe exactly what Senator Biden asked us to do, which was to put these ideas out for public comment, to take input from all of the interested stakeholders, and to decide whether these are additional changes that need to be made. Let me just emphasize that each of these changes, whether they are the changes that we are going final on, or the changes that will go through the full process, have undergone an extensive public notice and comment process.

I believe that the changes we have made and those that we will propose will make a real difference in the effectiveness of the New Source Review program. By removing unnecessary barriers to modernization and pollution prevention, we can make our power plants, refineries and factories cleaner and more energy-efficient.

Just a quick word if I can on power plants. We as an Administration, and I personally, agree with the concerns that have been raised by many of the members of the committee, especially those of you in the Northeast. We understand that in fact there are serious pollution problems that are caused by coal-burning power plants. We also know how to address those problems, and I commend Mr. Jeffords for his leadership on the issue. We have spent an enormous amount of time in my Agency over the last 18 months, and actually over the last 10 years, trying to study how we can effectively reduce those emissions. I will tell you that the answer is to do something like what you all did in 1990, which is to not have a complex program that allows facilities to decide when they are going to reduce their emissions, but to have Congress enact legislation that says you are now required to reduce your emissions by a certain amount over a certain period of time, and that is what the President's Clear Skies proposal would do, and we very much look forward to working with all of you on that proposal and passing this important piece of legislation.

One other thing, I would like to ask if I may that the reports that are already in the public record on our recommendations, as well as our report on the New Source Review program, if those could be placed in the record, I would appreciate that.

Senator LEAHY. Without objection.

Mr. HOLMSTEAD. I look forward to answering any questions you may have.

Senator LEAHY. Thank you.

Mr. Sansonetti, in January, your department issued a report which upheld the legal basis of the Clinton NSR lawsuits. In March, you were quoted as saying about the NSR cases, "We are going full stream ahead. We are actively pursuing all cases. When

companies refuse to settle, DOJ will take them to trial." Tough words; I happen to agree.

But following these kind of tough words, the press reports indicate that because of EPA's recent actions revising the NSR, defendants who were close to settlement are now walking away from the bargaining table and doing it with confidence. In fact, defendants in courts are brandishing the EPA's own documents in their court filings in support for dismissing the multi-billion dollar lawsuits. All of a sudden, everything seems to be going backward. Did you and your lawyers at DOJ see that coming?

Mr. SANSONETTI. First of all, I disagree with the interpretation from press reports, because frankly, while obviously I cannot get into the details of any of the ongoing litigation, the details of the settlements, I can tell the Senator that the folks in my division continue to work on all these pieces of litigation and the settlements——

Senator LEAHY. Without going into the particular press reports, are there cases where they were close to settlements and now they are backing away from those?

Mr. SANSONETTI. No.

Senator LEAHY. None? That is your statement here—your statement here is that there are none.

Mr. SANSONETTI. That is correct. We are going forward with our attempts to settle and we continue to negotiate with the attorneys.

Senator LEAHY. Are defendants in courts brandishing the EPA's own documents in their court filings as support for dismissing the lawsuits? Are there any such cases?

Mr. SANSONETTI. The only case that I am aware of is one that is not within my shop. I read the report on the New York State case brought with Niagara Mohawk. We are not involved in that case. To my knowledge that is the only one——

Senator LEAHY. Did you counsel EPA to refrain from publishing a revision of NSR during the ongoing enforcement actions?

Mr. SANSONETTI. Did I counsel them not to do what?

Senator LEAHY. Did you counsel them to refrain from publishing a revision of NSR during these enforcements?

Mr. SANSONETTI. No, that is not my business. I am in the law and litigation business, not policy formation.

Senator LEAHY. You don't think that their publishing that might affect in any way the settlement discussions that are underway?

Mr. SANSONETTI. May, may not. It is a case-by-case basis.

Senator LEAHY. But it is irrelevant to you whether it would or not?

Mr. SANSONETTI. Right, because the announcement does not affect my cases. I am going forward with them regardless of what ends up happening with this proposal.

Senator LEAHY. But you don't think that changing a key Clean Air Act regulation mid-stream might affect those legal cases?

Mr. SANSONETTI. It depends on the judge. One judge could say that that does affect it, and maybe they go back and make a certain decision; another judge may say "I'm sorry"——

Senator LEAHY. But as far as you are concerned, it is irrelevant to your actions?

Mr. SANSONETTI. Because, if I can use a baseball analogy, I am in the game. I have got to go to the plate and bat. And some people are saying——

Senator LEAHY. But it is irrelevant to your actions?

Mr. SANSONETTI. That is correct. I have got to go forward. I have no choice.

Senator LEAHY. In your report to the President on the pending NSR cases, the concluding line of the summary reads, "Any decision to withdraw, terminate or otherwise circumscribe them would rest in the discretion of the ENRD"—DOJ's Environment and Natural Resources Division—"which must assess the relative strength and weaknesses of a given case." But then in the same report, it concludes, "Any decision to withdraw, terminate or otherwise circumscribe them would constitute policy determination as to Clean Air Act enforcement strategy, or regulatory interpretation, determinations that properly rest with EPA, the Agency charged by statute with the responsibility to make such decisions." I just wanted to understand for the record, does responsibility for the enforcement of the Nation's environmental law lie with DOJ or with EPA?

Mr. SANSONETTI. DOJ.

Senator LEAHY. Do you believe that it is appropriate for defendants in ongoing NSR cases to use EPA's proposed NSR revisions as support for dismissal of those cases?

Mr. SANSONETTI. I have to leave that to the attorneys representing the other side. I supposed if I were on the other side and I thought that might help me, I might use that, but that is up to them.

Senator LEAHY. Do you think it is a good defense?

Mr. SANSONETTI. I do not. I think that the courts are going to look at what the existing law is at the time that the matters come before the court, and the proposals are not going to be anywhere near final by the time these trials come up.

Senator LEAHY. But you do not think that there have been any changes in the status of cases that were close to being settled because of this?

Mr. SANSONETTI. I cannot read somebody else's mind. All I can do is go forward and listen to my attorneys.

Senator LEAHY. Now, Mr. Sansonetti, that is not responsive and that is beneath you and this committee. That is not the question, nor are we asking you to be—but if you are going to be in charge of this, you have to make some judgments for tactics and otherwise. Do you get the impression that following this, there was a backing off of settlement discussions?

Mr. SANSONETTI. No. I might also note that in the testimony that was given by EPA today, it says specifically that the changes that they are making to the NSR program will be prospective in nature. EPA will continue to vigorously pursue its current enforcement actions.

Senator LEAHY. I understand their testimony, but what I am saying is, you have said you are in charge of the enforcement of this. I am asking you whether it had an effect on you and on your ability to enforce.

Mr. SANSONETTI. So far, not, but let's see how the trials come along and if the settlements end up on the courthouse steps, as

many times they are as you get close to the trial date, settlements come up. That first case is about 90 days away, a couple more in February, so we will soon know. Those trials will come up before this regulation.

Senator LEAHY. Mr. Holmstead, when EPA developed this 90-day report on NSR, did you engage the Department of Justice's NSR legal team in these deliberations?

Mr. HOLMSTEAD. At the time we were developing that report and the list of recommendations, we worked extensively, my staff worked not only with the Department of Justice, but also with our own Office of Enforcement. And so there was extensive—the answer is yes, there was extensive consultation.

Senator LEAHY. Did you go into a question of how these proposals would impact either prospective or retrospective NSR enforcement cases?

Mr. HOLMSTEAD. Yes, that was one of the primary issues that was discussed. What I can say is, based on numerous meetings that I have had, which have included staff attorneys from Tom's office as well as attorneys from our own enforcement office is we do not believe these changes will have a negative impact on the enforcement cases.

Senator LEAHY. So you were advised by DOJ that they would not have an impact?

Mr. HOLMSTEAD. I cannot say that I have had specific advice from Tom, but——

Senator LEAHY. By "Tom," you mean Mr. Sansonetti?

Mr. HOLMSTEAD. I am sorry—Mr. Sansonetti. But based on conversations between our staffs, I have been informed by our enforcement folks as well as by people in Mr. Sansonetti's office that they do not believe these will have a negative impact on the enforcement cases.

Senator LEAHY. On these multi-billion dollar cases that have been filed, your understanding from DOJ is that this would not have any effect?

Mr. HOLMSTEAD. That is correct. If I can also just mention, I was interested to read this morning in the Washington Post that there was an article that addresses this issue, and I know that—and a spokesman from Attorney General Spitzer's office said exactly the same thing. If I could just read from the article, he says, this is from Attorney General Spitzer's office, "Nothing the Bush Administration does prospectively will have any impact on the violations these plants committed in the past," said Mark Violeta, spokesman for the Attorney General's office. "We feel we are pretty solid ground." I think that represents our position on these cases as well.

Senator LEAHY. Thank you.

Senator Jeffords.

Senator JEFFORDS. Mr. Holmstead, I understand that EPA projects about 70 percent of the sources in several industry sectors have not bothered to get NSR permits when they should have. What would you estimate is the current rate of noncompliance?

Mr. HOLMSTEAD. I have no idea. I have read that statistic before. I believe that that comes also from our enforcement office, and they believe that in some industry segments that there is that sort of high rate of violation. I honestly do not know what the violation

rate may be. One of the things that I know that you are interested in, as am I, is that we have another way of regulating power plants, the Acid Rain program, where we know we have effectively 100 percent compliance, and we think that sort of a program where we get compliance and we get the reductions is a much better way of going about these things, but I do not have specific statistics on what we think the compliance rate is.

Senator JEFFORDS. If these rules go final this year, which you have proposed, when and by how much will pollution decrease? Could you tell us with respect to each rule?

Mr. HOLMSTEAD. Yes, I would be happy to. As you mentioned, there are five different rules that we plan to go final on. We have analyzed each of those extensively and let me just go through them quickly. The first one, as Senator Biden mentioned, has to do with what we call plan-wide applicability limits. We have done a number of pilot projects on these so-called PALs, and have a study that we hope to publish within the next few weeks, but it has found that in each of the cases that we have studied, you get significant reductions that you would not otherwise get under the program. It is very difficult to quantify the extent of those reductions, but we are highly confident that that reform will lead to much greater emission reductions than we currently get. We can say the same thing about something that we refer to as exclusion for pollution control projects.

So we know of a number of cases where people have not undertaken these sorts of projects, and we are going to eliminate that barrier, and we know that that will also reduce emissions. So again, quantifying exactly how much is very difficult to do, but we do know that as with the PALs, that we will get significant emission reductions.

The same is the case with respect to something we call the clean unit test, which really for the first time provides industries with an incentive to install the best available control technology. Under the current program, if you go through NSR and as a result of that you install the best available controls, you can be in the same process again 2 months later or 6 months later next time you make a change. We do not think that is the way the statute was really intended to work, and we believe that if we can give people an incentive to put on the best available controls, that will also reduce emissions.

The last two changes, one of which has to do with a change in the emissions test. Currently, the program uses something called the actual to potential emissions test, which focuses not on actual emissions, but theoretical emissions. We believe that by focusing on actual emissions, that that will allow people to go forward with projects that will reduce pollution. Again, it is very difficult to quantify, but we know it is in the right direction. And then the fifth one has to do with a change in the baseline, and we do not see that that has a difference on way or another.

So based on pretty extensive analysis of all of these reforms, we know that they will result in emissions decreases, but it is very difficult to say by how much.

Senator JEFFORDS. Well, we would like you to the best extent possible to give us some specific objectives in tons so that we can better understand the ramifications of what you are doing.

Mr. HOLMSTEAD. We would be happy to do that. I will just need to tell you it will need to be based on some assumptions and we will be clear about those assumptions. For instance, one of the things—we think PALs are a good idea and we wish States would do what some States have done, and that is require PALs for everyone. That is, for instance, what the State of Oregon does that has a very effective program. Under our program, PALs are optional and so we have to make some assumptions about how many sources would adopt PALs. But we can make those sorts of assumptions and provide that information to you, and we will be happy to do that.

Senator JEFFORDS. Thank you.

Mr. Holmstead, when will the Agency provide us with a quantitative analysis of the aggregate impact of the rules that you intend to finalize this year on quality, public health and emissions? I would note that a combination of the Congressional Review Act and the Executive Order on Regulatory Review requires such an analysis due to their significance. I would like your comments on how you would be able to accommodate us on that.

Mr. HOLMSTEAD. I am quite familiar with both the Congressional Review Act and the Executive Order which was signed by President Clinton which require what is called a regulatory impact analysis or an RIA for regulations that exceed a certain threshold in terms of their impact on the economy. Back in 1996, the Clinton Administration determined that these five regulatory changes that we are making now that none of them exceed that threshold, and so therefore a regulatory impact analysis was not required. As I know you know, under both the Executive Order and the Congressional Review Act, it is only major regulations that are subject to the RIA requirements, so we have not prepared a formal RIA. In the preamble to these final rules, we will be again discussing why we know that these will improve the environment.

In terms of quantifying the emissions reductions that I mentioned, that is hard to do. We will try to get something to you that you can see, but again what we will have to do is just make some assumptions about how many facilities will voluntarily accept PALs because that does actually put a cap on the emissions, something the current program does not do. We will make some assumptions about that, and we will be happy to provide that information to you.

Senator JEFFORDS. I think our view is that the impacts on public health are very significant, and therefore it does apply. We would appreciate it if you would look at it from that perspective.

Mr. HOLMSTEAD. We will be happy to.

Senator JEFFORDS. Mr. Holmstead, I understand that the informal interagency review of this package has begun, even before it is sent to OMB. Will you agree to docket any written comments from other agencies in this process?

Mr. HOLMSTEAD. Yes, I would be happy to. We will certainly—and in fact, I am quite sure that we are doing that already, yes.

Senator JEFFORDS. Mr. Holmstead and Mr. Sansonetti, have you had any meetings with representatives of power companies or TVA that are the subject of the NSR enforcement actions, in which they suggested modifications to the NSR regulations that would, if implemented, have prevented or precluded the filing of those enforcement actions?

Mr. SANSONETTI. In my case, no.

Mr. HOLMSTEAD. I believe that is the same for me. I am trying to think if, because TVA is a Federal Agency, I have had some discussions with TVA, but not in relation to any of the enforcement actions. I certainly understand their perspective on the NSR program on an overall basis, but I do not believe it is fair to say that they have proposed changes that would have any impact on the enforcement actions.

Senator JEFFORDS. Thank you, Mr. Chairman.

Senator LEAHY. Thank you.

Senator Voinovich.

Senator VOINOVICH. Mr. Sansonetti, how long have you been there, again?

Mr. SANSONETTI. One-hundred and ninety-six days.

Senator LEAHY. Liking it better every day.

Senator VOINOVICH. Are you familiar with when the lawsuits started to be filed under NSR—about when?

Mr. SANSONETTI. As I mentioned in my earlier testimony, I remember that the initial cases were filed in the 1980's. Many of the cases that are presently coming up for trial were filed in the 1998–1999 period.

Senator VOINOVICH. Here is what I am trying to get at. I think in 1996, President Clinton asked the EPA or the EPA in conjunction with the President, to go forward with reform of the regulations that dealt with New Source Review, and as a matter of fact some of the regulations that are being now considered are recommendations that have come out of the Clinton Administration. Is that right, Mr. Holmstead?

Mr. HOLMSTEAD. That is correct, yes.

Senator VOINOVICH. OK. Something happened prior to 1998. Some of the companies were doing routine maintenance and repair and going on and doing a lot of things. Then something triggered these lawsuits, and there were a lot of them that were filed. The issue is, what was it? What change took place at the EPA that caused these lawsuits to be filed in 1998 when many of the things that were done were being done in 1991, 1992, 1993, 1994, and at that time nothing was done about them? I suspect the people that were doing them understood that we were doing routine maintenance and repair and this was OK, and then all of a sudden, wow, a whole flurry, as I mentioned in my opening statement, blossomed—all these lawsuits. It is my understanding that it occurred because someone in the EPA issued a guidance. Could either one of you shed light on just what it was that caused the Agency to start to go after some people on things that prior to that time they were not bothering with?

Mr. SANSONETTI. I am afraid I can't. During that period of time, I was practicing law in Cheyenne, WY. So I am afraid I do not have

any personal knowledge of what was going on at EPA during that time.

Mr. HOLMSTEAD. I am sorry, I cannot really help you either. I don't know exactly what the thinking was within the EPA back in those days, but I do know, as you say, that the current round of cases was initiated I think back in the 1998–1999 timeframe, so exactly what precipitated those cases, I do not know.

Senator VOINOVICH. Well, Mr. Chairman, I would like to ask the EPA to do an investigation as to what it was that triggered these lawsuits, as I mentioned, for things that had heretofore been done by these companies and all of a sudden they now became subject of lawsuits under New Source Review. I am very, very interested. How did it happen?

Mr. Holmstead, there has been a number of—I would like to get that in the next couple of weeks.

Mr. HOLMSTEAD. Yes, sir. I am sure we can provide that.

Senator VOINOVICH. Mr. Holmstead, there have been a number of allegations in the media that the EPA has engaged in a closed process. There are some allegations here from some of the questions and statements made by members of the two committees here, that somehow it was a closed process in developing the NSR reform package; that this was done in a sinister way in the dark rooms of the White House, with big utility and other people. I would like you to comment. What kind of process did you use in trying to come up with the recommendations that you are making in terms of regulations?

Mr. HOLMSTEAD. If I can just make an initial observation. One of the most interesting things about being at the EPA is to be involved in an issue, and then read about that issue in the press and realize that there is usually no relationship between, at least in my experience, what is going on and what is reported in the press as going on. I have heard these accusations before about a secret process, a backroom process, and I have to admit I am just sort of baffled because this has been done in a very open, public way, going back to 1992. At the very end of the first Bush Administration and then on through the Clinton Administration, there was actually a formal FACA, Federal Advisory Committee Act, committee that met dozens of times to talk about NSR issues.

Senator VOINOVICH. Excuse me—were all these open hearings, were they the ones—after those hearings was what triggered the Clinton Administration's recommendations for regulations in 1996?

Mr. HOLMSTEAD. Yes. The five things that we are going final on all stem directly from that process. So there were literally dozens of public meetings. There was a formal proposal in 1996. There were public hearings on that proposal. There was a series of meetings. I think our files indicate there were something upwards of meetings with 50 different groups on those proposals. There was a supplemental notice published in the Federal Register in 1998 and again additional public comment on these very same reforms that we are talking about today.

Senator VOINOVICH. Have you changed those regulations that came in 1996 in any way, from the Clinton Administration?

Mr. HOLMSTEAD. There were a number of regulations—there were many, many things that were proposed. We are not finalizing

all of them, partly just because of manpower concerns. So we are focusing on the five most important ones. For those that were proposed, I cannot say that in every single respect they are the same, but they are quite close to what was proposed in 1996 by the Clinton Administration.

Senator VOINOVICH. I would like to see what was proposed and what you are proposing with these regulations, and make that available to this committee also.

Mr. HOLMSTEAD. That is something that we will do shortly. When we issue the final regulations, we will be able to—one of the things that of course we have to do under the Administrative Procedure Act is explain any differences between the proposal and the final rule, as well as our response to any comments. So that will all be, again, available to you very soon.

Senator VOINOVICH. So the regulations that we have been talking about here, we are speculating about what those regulations are going to be because you have not really issued them, then. Is that right?

Mr. HOLMSTEAD. That is correct. We have provided, as I think you know, an announcement where we did provide some detail about what we are planning to go final on, but again those are sort of one or two paragraphs of what are fairly complicated regulatory packages.

Senator VOINOVICH. The question I have is if these regulations have not been issued yet, how can we attribute them being so terrible when we really do not know what they are yet?

Mr. HOLMSTEAD. I think that is a good question. As the person who has been accused of gutting the Clean Air Act and rolling back the Clean Air Act and various other things, I have often asked that same question myself.

Senator VOINOVICH. So there has been a lot of speculation here in this committee about how terrible they are and how they are going to roll back the rules and regulations, and yet we still don't have those in front of our face yet so that we can really ascertain whether or not they do what some people say they are going to do.

Mr. HOLMSTEAD. That is correct. The regulations are not—we are still finalizing those within the Agency. That is correct.

Senator VOINOVICH. It might be good for this committee to get together after the regulations have been issued so we really know what we are talking about.

Mr. HOLMSTEAD. I will look forward to that.

Senator VOINOVICH. Thank you.

Senator LEAHY. Thank you.

Senator Carper.

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Thank you, Mr. Chairman, and to our witnesses, thank you for joining us today.

Like several members of this panel, I am a supporter of legislation that seeks to cap and reduce the amount of pollutants, four principal pollutants, including sulfur dioxide, nitrogen oxide, mercury and carbon dioxide. Senator Jeffords has sought to lead our

panel, Environment and Public Works panel, with legislation called Four P's, you are I am sure familiar.

We reported the bill out of committee and it is, I guess we are now positioned to go to the floor. There are those of us who are interested in looking at an approach to a Four-P bill that still sets targets and reduces pollution emissions in all four areas, but also revisits New Source Review policy at the same time.

Here is my question, and I will ask either of you to take a shot at it if you would. I want to in focusing on New Source Review ask, does it currently, as it is currently applied, does it, and this is what I think it ought to do, and then I will ask you do you think it does, and if not, how can we change it. My view of New Source Review is that it ought to protect our health and our environment. New Source Review should promote energy efficiency and reduce our consumption of energy in this country. New Source Review should provide the reliable, affordable electricity to consumers. And finally, New Source Review, in my own judgment, ought to provide some regulatory certainty for utilities. Those are really the four things I would hope it would help us to provide.

Here is my question, two-part. One, does it do those things? If not, how can we change it in order to accomplish those four goals?

Mr. HOLMSTEAD. I would like to address that if I can. Let me make sure that I understand the four factors. One is energy efficiency; one is regulatory certainty; one is energy security.

Senator CARPER. Yes.

Mr. HOLMSTEAD. And I am sorry, the fourth?

Senator CARPER. Protecting a healthy environment.

Mr. HOLMSTEAD. OK. I have to say that as some of you know, I have spent an enormous amount of time trying to understand these very questions. I think the New Source Review program has been quite effective for facilities that build brand-new sources. As the program applies to the existing sources, and people I think have misconstrued what the statute says. The statute says that New Source Review applied if a facility makes a change that would result in a significant emissions increase. So they are free to make all the changes they would like to make as long as it does not result in a significant emissions increase, and there is a lot of debate back and forth as to how you quantify that.

What we can say with some certainty on each of these four factors is first of all, with respect to protecting human health and the environment, it certainly has been a useful tool that applies to new sources, but it does not really do anything to reduce emissions from existing sources for the reasons that I mentioned. As long as they do not increase their emissions, they can keep going.

We actually have done a very extensive analysis of power plants, and our basic conclusion is this: With respect to the most harmful of these pollutants, and that is SO_2, which contributes to fine particles, the only way the New Source Review program reduces those emissions is if a facility violates the NSR program and then is subjected to a lawsuit and through settlement or otherwise has to put on controls. If they comply with the program, and again we have modeled this extensively, and we have modeled any number of changes we could make to the program, it does not get any reductions at all in SO_2 emissions. As I say, the only way it gets those

reductions is to have people violate the program and then be subject to an enforcement action. So we believe that in terms of actually reducing the emissions that many people, including ourselves, believe that are the most significant, it does not really provide us with anything.

We also believe, for reasons I can explain—I do not want to use up all of your time—but it has impeded energy efficiency. We know of many cases where changes that a facility could make that would improve its energy efficiency have been prevented or canceled because of concerns about New Source Review.

In terms of regulatory certainty, that is one of the big issues. I think that one of the things we want to do is provide that sort of certainty. The program has been in existence since 1977. We have never defined in our regulations what routine maintenance, repair and replacement is. So that is something that we are endeavoring to do now.

But if I could leave you with one thing, and I appreciate your question, from an energy perspective, from an environmental perspective, the most important thing that we can do for the utility industry and for the public health, especially in the Eastern United States, is to do something along the lines of what you have talked about and Senator Jeffords and the President's Clear Skies initiative which is to say, we know that SO_2 emissions right now are at 11 million tons. We want them brought down to 4.5 million tons and then 3 million tons, and that would provide us with certainty. It would encourage energy efficiency. It would provide health and environmental benefits that we cannot get under the current program.

So I just have to say, judged on the four criteria that you mentioned, I think the program really does not work as it relates to existing sources.

Senator CARPER. Mr. Chairman, has my time expired?

Senator LEAHY. Go ahead.

Senator CARPER. The second half of my question, how do we need to change New Source Review in the context of a four-pollutant bill, in order to better meet the four goals that I described earlier?

Mr. HOLMSTEAD. I am sorry. I did not explain that very well. In the context of a stringent cap program of the kind that I know the President has proposed or others, the New Source Review program becomes entirely redundant. It honestly has no additional benefit for the environment. So our recommendation is that once you have a cap program in place, as long as those caps are at least as stringent as what the President has proposed, then there is really no longer a role for the New Source Review program as it relates to those sources. You would still need it for—as you know, it applies to many, many other sources besides power plants—but as it relates to power plants, there is really no longer any role to be played by the NSR program. It really is counterproductive.

Senator CARPER. As we go forward, and I am still new at this here, but the idea of doing away entirely with New Source Review, as opposed to working with us to see if there is a middle ground, I am going to encourage you to try to work with us to find if there is a middle ground.

Mr. HOLMSTEAD. I appreciate your comment. And let me say, and I may get carried away with my own rhetoric here, under the President's proposal, which we hope will be introduced in both the House and the Senate fairly soon, we have retained certain features of the NSR program. For instance, under the current program there is sort of a guaranteed level of technology that any new plant would have to meet, and that would be retained. There would also be a need for new sources, a new power plant for instance, before it could be located anywhere, it would have to do modeling to show that that would not cause an air quality problem. That would be retained under the President's proposal, as would some other protections for national parks and what we call class-one areas.

So I think it would be really constructive to have a chance to sit down with you and others and talk about the features of the program that would still make sense in that context, and we would be delighted to have the opportunity to do that.

Senator CARPER. We look forward to that.

Mr. Chairman, is that my time? Is that it?

Senator LEAHY. It is.

Senator CARPER. Can I just ask one question for the record and ask for a response in writing? Thank you very much.

About 4 years ago, Mr. Holmstead, when I was privileged to be Governor of Delaware, our State submitted a section 126 petition to EPA, and we did it with regards to controlling NOx emissions from upwind power plants. I was surprised to learn the other day that EPA has not yet responded to Delaware's petition. It has been about 4 years. I understand it is also the case with petitions from the District of Columbia, New Jersey and our neighbors in Maryland. Here is my question. Don't answer them now, but I would like to have a followup if you would. When do you expect EPA to respond to Delaware's 126 petition? And what can we do in the future to help ensure that responses are more prompt?

Mr. HOLMSTEAD. We will be happy to respond to that question, yes.

Senator CARPER. Thanks very much, and thank you, Mr. Chairman.

Senator LEAHY. Senator Bond.

OPENING STATEMENT OF HON. CHRISTOPHER S. BOND, U.S. SENATOR FROM THE STATE OF MISSOURI

Senator BOND. Thank you very much, Mr. Chairman. I appreciate the opportunity to speak about the subject of the hearing today.

As we have heard I believe in the testimony from these witnesses, this is not really about clean air. It is about litigation, policies, regulations, bureaucratic landmines and a whole raft of other problems. Why are we here today? I think there may be other factors in improving air quality, and for the information of our good friends on the Judiciary Committee, I think the Environment and Public Works Committee last month scuttled further electric utility pollution cuts in NOx, SOx and mercury in order to make a political point about carbon dioxide. A four-pollutant bill is not going to go anywhere. A three-pollutant bill should go somewhere and we continue to support it.

Today, we have spent the morning discussing an obscure program that was just an afterthought in the technical amendments of 1977. As witnesses have testified, if you are really serious about dealing with air pollution and continuing to make progress, there are better ways to do it. We have not even discussed those aspects of the NSR program that have been successful, which will ensure that new facilities will not further harm regional air quality.

The Clean Air Act has brought America major air quality improvements. Since peaking in 1975, electric utility air emissions of SO_2 are now five million tons lower per year. In response to the 1990 Clean Air Act amendments, and I played a role in that with the Bond-Byrd, as we call it in Missouri, or they call it the Byrd-Bond emissions trading proposal in Washington, we have seen progress. Utilities have cut NOx by two million tons per year.

The major NSR enforcement cases begun by the last Administration in 1999 are responsible for none—let me emphasize none of these air pollution decreases. The recent enforcement cases are most striking in that they do not involve a single violation of air and air emissions permit. Many, especially in the environmental regulatory community, like to measure damage to the environment in terms of pollution discharge or emissions permit violations. If that is the test, these NSR cases are of no value to the environment.

Not one case alleges that a utility exceeded its government-permitted air emissions levels. These are all construction permits they are fighting over. Most cases involve only potential increases in emissions. Those plants which increase the actual emissions were still below the levels allowed by the government in their emissions permits. The NSR has produced bureaucratic confusion, conflicting and changing regulations that leave this littered with traps for a utility trying to improve efficiency and reduce environmental pollution. As one witness later on will testify, EPA has issued multiple and inconsistent interpretation over the years. So much for regulatory certainty.

The other point that has already been brought out here in testimony is that the debate—the greatest value to the environment in NSR reform should be energy efficiency, but this debate is leaving that out. We spent much of the spring in the Senate debating an energy bill, an important issue for environmental advocates was promoting greater energy efficiency because the more efficiently we generate and use energy, the less damage we do to the environment. However, advocates of the NSR program abandon their environmental friends' energy efficiency arguments. The fuel efficiency improvements we want for cars, trucks and air conditioners now do not seem to matter for electric utilities.

We also hear charges about rolling back environmental protections. Nothing could be further from the truth. I was interested to see a quote from a new administrator of EPA just before she took office. One of her pledges was, "examine ways to simplify and streamline the New Source Review process to reduce changes of legal challenge." That was not a statement by Governor Whitman. That was a statement by Administrator-to-be Carol Browner.

That should not be surprising since all the rules the Administration announced in June essentially were finalizing the proposed

changes initiated by the Browner EPA, either the rollbacks back in 1996 under the last Administration were the substance, or maybe the substance is not so bad at all. They just don't like the messenger. I smell a sickening odor of political campaign rhetoric, which is the greatest potential pollutant coming out of this hearing.

[Laughter.]

Senator BOND. And I think we ought to be aware of the dangers of that to the health of our democracy.

Harsh letter to follow. I will submit the rest of my statement for the record.

Thank you, Mr. Chairman.

[The prepared statement of Senator Bond follows:]

STATEMENT OF HON. CHRISTOPHER S. BOND, U.S. SENATOR FROM THE STATE OF MISSOURI

Thank you, to both of the chairmen, for holding this joint EPW and Judiciary Committee hearing on the New Source Review Clean Air program. Unfortunately, for those who actually care about clean air, and not just litigation, policies, and regulations, you will be sorely disappointed.

So why are we hear today? I think it may have more to do with factors other than improving air quality. For the information of my Judiciary Committee colleagues, the Environment Committee last month scuttled further electric utility pollution cuts in NOx, SOx, and mercury in order to make a political point about carbon dioxide.

Today, we will spend time discussing an obscure program that was just an afterthought in the technical amendments of 1977. We won't even discuss the successful part of the program which ensures that new facilities will not further harm regional air quality.

The Clean Air Act has brought America major air quality improvements. Since peaking in 1975, electric utility air emissions of SO_2 are now 5 million tons lower per year. In response to the 1990 Clean Air Act amendments, utilities cut NOx 2 million tons per year. The major NSR enforcement cases begun by the last Administration in 1999 are responsible for none of these air pollution decreases.

The recent enforcement cases are most striking in that they do not involve a single violation of an air emissions permit. Many, especially in the environmental regulation community, like to measure damage to the environment in terms of pollution discharge or emissions permit violations. If that is the test, then these cases are of no value to the environment.

Not one case alleges that a utility exceeded its government permitted air emissions levels. These are all construction permits we are fighting over. Most cases involve only *potential* increases in emissions levels. Those plants which increased their actual emissions were still below the levels allowed by the government in their emissions permits.

The other point that amazes me about this debate is how the greatest benefit of NSR reform, energy efficiency, suddenly has no value to the environment. We spent much of the Spring in the Senate debating the energy bill. One of the most important issues for environmental advocates was promoting greater energy efficiency. The more efficiently we generate and use energy, the less damage we do to the environment.

However, advocates of the NSR program abandon their environmental friends' energy efficiency arguments. Fuel efficiency improvements recommended for cars, trucks and air conditioners now shouldn't apply to electric utilities.

We will also hear charges today that the current Administration is halting enforcement suits and rolling back environmental protections. Nothing could be further from the truth.

I have a quote here from a new administrator before she took office. One of her pledges was to, "examine ways to simplify and streamline the New Source Review process [and] to reduce chances of legal challenge." No, this wasn't Governor Whitman; this was Carol Browner.

This shouldn't be surprising since all of the rules this Administration announced in June that it will finalize were proposed under the Clinton Administration by the Carol Browner EPA. Either the rollbacks began in 1996 under the last Administration or the substance isn't so bad after all. It's just the new messenger they don't like.

Meanwhile, the Bush Administration continues to bring more NSR cases. EPA announced just last week that it filed a notice of violation for alleged NSR violations against two coal-fired plants in Colorado. That is hardly taking the cop off the beat.

I urge my colleagues who are serious about improving air quality to get back to the real work at hand—passing a three-pollutant bill that will bring a new generation of air pollution cuts for nitrogen oxides, sulfur dioxides and mercury. I look forward to working with my colleagues on that measure.

Thank you.

Senator LEAHY. I thank the Senator from Missouri, as always, for being here.

[Laughter.]

Senator LEAHY. I appreciate the opportunity to be on the committee with him, as I am not a member of the committee that he is representing here.

The next would be Senator Clinton, but I understand she is willing to yield a minute to the Senator from North Carolina.

Senator EDWARDS. I think actually she is willing to go further than that and let me go ahead, Mr. Chairman, which I am very appreciate of Senator Clinton for doing.

Senator LEAHY. I thank the Senator from New York.

The Senator from North Carolina?

OPENING STATEMENT OF HON. JOHN EDWARDS, U.S. SENATOR FROM THE STATE OF NORTH CAROLINA

Senator EDWARDS. Thank you.

Let me say first, Mr. Holmstead, I agree with a lot of the others, that I think our priority here should be about reducing pollution that is killing senior citizens, causing kids to get asthma and smogging up our national parks. Personally, this is a huge issue for us in North Carolina. We have every year in North Carolina 1,800 people who die from breathing pollution and soot. I think that is actually the fourth-worst rate in the country. We have got 46,000 kids with asthma in just 17 counties. We have got clouds that are literally more acidic than vinegar.

Our State has actually made a real effort to do something about this. Governor Easley got enacted the Clean Smokestacks Act, which I think is a model and we are proud of it. The problem for us is obvious. North Carolina is not an island. Pollution travels across our mountains and across our borders, and the Cumberland TVA plant in Tennessee for example, emits about as much pollution every year as every car in North Carolina together. A lot of that pollution, unfortunately, is getting into the lungs of kids and our senior citizens.

I think we have got to do something about it. We have got to do something about it not just in North Carolina, but for the entire country. As you well know, New Source Review is an important part of that. What I am concerned about is it seems to me that what you are doing is gutting New Source Review without any kind of adequate replacement for it.

Let me just ask you a couple of questions. I listened to your testimony earlier. You talked about your rule changes and you said it is your feeling that those rule changes do not increase pollution, but you have difficulty quantifying it. Let me ask you this question, can you quantify the effect of those rule changes on human health?

Mr. HOLMSTEAD. Let me answer your question in two ways. First of all, I agree completely and the Administration agrees completely that the State of North Carolina has a significant problem that is not caused by facilities in its own State. Those problems, including premature deaths, including a negative impact on children with asthma and others, are largely the result of emissions that come in from neighboring States. We absolutely believe that those emissions need to be significantly reduced, and that is what the President is trying to do with the Clear Skies initiative. Again, just to put that in context——

Senator EDWARDS. I apologize for interrupting you, but I have gotten in front of Senator Clinton. I want to see if I can get an answer to my question. My question is, can you quantify the effect of these proposed? You are proposing changing the law. These will have the effect of laws, I understand it—these rule changes. If you are proposing to change the law for the country, can you quantify the effect of those changes on human health?

Mr. HOLMSTEAD. What I can tell you is that the changes that we are finalizing will have a positive impact on public health. They will make the air cleaner than it otherwise would be.

Senator EDWARDS. Can you quantify those changes? Can you tell us what the quantification of those changes on human health would be?

Mr. HOLMSTEAD. Senator Jeffords asked us to try to do that, and we will attempt to do that. The other thing——

Senator EDWARDS. You have proposed rule changes and you have not yet attempted to quantify what the effect on human health is?

Mr. HOLMSTEAD. Many times what we do in EPA, oftentimes is when we make regulatory changes, we analyze those changes on a number of different factors. For instance, some of the things that we are proposing to do are just designed to bring some clarity to the program and to make it work better. What we can say is we have analyzed each and every one of these changes that are the final changes that we are making, and on an overall basis they will make things better. It is difficult to quantify how much better because as I said before it depends on how many people choose these options.

But let me say one other thing which I think is important. The concerns that you have raised are largely—the health impacts in North Carolina have to do almost entirely, or let me say largely with power plant emissions. None of the changes that we are making will have any impact on power plant emissions one way or the other. Because of the way the program works, as I said before, there are other programs that regulate the power sector.

Senator EDWARDS. Can I ask you about that, what you just said?

Mr. HOLMSTEAD. Yes, please.

Senator EDWARDS. One of the things—and this is related to that—one of the things that you said earlier when you talked about the rule changes is that you said the change in the baseline for determining where there has been an increase in emissions for purposes of determining whether an NSR is triggered, that that change would have, I think you said, no effect up or down—I am paraphrasing or something to that effect.

Mr. HOLMSTEAD. Correct. Yes.

Senator EDWARDS. Now, I am having trouble making sense out of that. As I understand the current law is that the baseline for determining whether there has been an increase in emissions and whether a New Source Review is triggered is the last 24 months, unless there is another more representative period. You are changing that to say that they only have to undergo a New Source Review if they have had an increase above, and I am quoting now, the highest consecutive 24-month period within the immediately preceding 10 years. So what you have said is, they can choose the highest level of emissions over any 24-month period for the previous 10 years for determining whether they have in fact gone above that level to see if a New Source Review can occur. It just defies common sense to me that that does not improve the chances that an NSR is not going to be triggered; that a period of greater emissions can be used for purposes of determining the baseline. I would add to that at least according to press reports, there are internal EPA documents where your own career lawyers say that a change in that 10-year baseline would substantially diminish, I am quoting now, "substantially diminish the scope of the program."

Do you disagree with them?

Mr. HOLMSTEAD. Let me answer your question. First of all, and Senator Lieberman I think suffers from the same mis-impression and talks about power plants that by changing the baseline that somehow we are going to allow them to increase emissions. We are not changing the way the baseline works for power plants. The baseline issue for power plants is contained in a separate rule. That rule was promulgated in 1992 and is referred to as the WEPCO rule, and it creates a different way for power plants to calculate whether there is an emissions increase. We are not changing that. So in terms of the power plant sector, what we are doing today is irrelevant on the baseline issue.

With respect to other sectors, again there has been a great deal of misunderstanding about what we are doing. As you mentioned, under the current program the baseline that we refer to is either the average of the two most recent years or another period that is, "more representative of normal source operations." That subjective piece, what is more representative of normal operations, has caused a lot of controversy over the years for this reason. A lot of times when someone goes in for an NSR permit, it is when they are coming out of a downturn in the economy and they want to improve their facility because they realize that demand is growing. That means that the 2-years immediately preceding the change are often a period when their utilization is very low.

So they go in to the permitting authority and they sort of have this negotiation about really what is a period that is more representative of normal source operations. We would like to remove that subjective piece from the regulation altogether, and just have a hard and fast rule which says you cannot look back more than 10 years. There is no longer a question about more representative source operations. You have to choose a 24-consecutive-month period. I should mention that when the Clinton Administration—the Bill Clinton Administration, Senator—I didn't mean to confuse them——

Senator CLINTON. I did not know there was another one.

[Laughter.]

Mr. HOLMSTEAD [continuing]. When they proposed this change, they proposed a one-in-ten baseline. We were concerned that a one-in-ten baseline would allow sort of unusual periods of high emissions. So we have gone to a two-in-ten baseline. That was not the source of a great deal of concern in the public comment period, and here is why. We are allowing people to look back 10 years to 24 consecutive months, but then they have to reflect additional pollution controls that have come online since that time. You do not have to do that under the current program. So as we look at this, in some cases our change will lead to a higher baseline, as you suggest; in other cases, it will lead to a lower baseline. But we do know that in all cases it will just make the program a lot more clear and a lot more understandable to people and there won't be the subjective element anymore. So that is why I say in some cases the baseline will be higher; in other cases, it will be lower.

Senator EDWARDS. I think in fact, the power plants are a small fraction of the industries that are covered by the NSR, when I asked you the question about the change in the baseline.

Mr. HOLMSTEAD. That is correct.

Senator EDWARDS. I appreciate your explanation. I still have trouble making it make sense.

Let me just say this, and there are others who have been waiting, I think that you are not able to quantify the effects on human health of these proposed changes in the law, which is what they are. It seems to me that at a minimum when we are talking about senior citizens' lives, and we are talking about kids getting asthma, when we are talking about protecting people from the harmful effects, that if we are going to make a change in the law, we ought to be certain that it is a positive change and we ought to be able to quantify what that change is. I am glad that Senator Jeffords has asked you to do that and I would like to see whatever information you have about that. But I will tell you that I believe that what you are proposing is wrong. I intend to do everything I can to stop it in the legislative process.

Thank you, Mr. Holmstead.

Senator LEAHY. Senator Sessions.

OPENING STATEMENT OF HON. JEFF SESSIONS, U.S. SENATOR FROM THE STATE OF ALABAMA

Senator SESSIONS. Thank you, Mr. Chairman.

Well, I think the Carol Browner goal, as Senator Bond said, was a good one, that we need and have for some time needed to simplify the rules of the New Source Review to avoid litigation. Now we have attorneys general in New York and other places suing power plants all over America asserting what they think the rule means. You have the Federal Government Department of Justice leading a battle here against utilities that another agency of the Government thinks is not correct. So we have obviously serious differences of opinion.

As I understand it, the EPA sat down with seven of the major power companies and basically said either agree to what we tell you or we are going to sue you. They just could not feel like they could agree to it. And so now we are in litigation. Who knows, but

I will say this, a lawsuit in the 11th Circuit or any other Circuit in the country is not going to come out with a comprehensive rule. It is only going to answer the issues presented to the court. Isn't that correct?

Mr. SANSONETTI. That is correct, Senator.

Senator SESSIONS. So you will end up with some partial issue settled, and other issues never touched or ruled on by the court. That is not a way to establish a procedure that could cost of tens of billions, maybe $100 billion out there. So we need to do this properly.

Mr. Holmstead, when did EPA come to learn that the sources of power were violating what they now conclude to be the New Source Review rules? How long had they known about that before they filed a lawsuit?

Mr. HOLMSTEAD. I do not know the answer to that question, because I was not in the Agency at the time those suits were brought.

Senator SESSIONS. That is an important question, it seems to me. It has been going on for 18 years, or really 16 years before the lawsuit was filed. As a Judiciary Committee member, what concerns me about this solely is are we following appropriately the Federal administrative rules process and are we handling this in a legal and fair manner? I believe that grandfathered-in plants are not provided protection forever. We can through legislation or rule change alter the rules or alter the legislation, if we deem it is important to public health. But if regulations are in place, they ought to be carried out with integrity, Mr. Sansonetti, and ultimately when you file a lawsuit you are responsible for that. You represent EPA and the Department of Justice has to look a court in the eye with integrity.

One of your attorneys in the 11th Circuit, when I asked when the EPA knew about these NSR violations, the Department of Justice attorney apparently said the EPA did not know about it until they filed a lawsuit, the cop was in another block—did not see the crime occur. And the chief judge there questioned that. Surely, EPA for years has known how the power plants are updating and modernizing their facilities, haven't they? That is an important question because if they knew about it, they may well be estopped to file a lawsuit and ask for damages back to 1982.

Mr. SANSONETTI. Obviously, this was before my time as well in the department, but as I understand it the TVA case was brought after the EPA had finished its negotiations with TVA, had brought in an administrative compliance order issued by EPA. When TVA did not like the result of that, it was TVA suing EPA in that case. This is a matter of two Federal agencies after each other, and of course it is the Department of Justice's responsibility to defend EPA in this case. This one is a little bit different from the other cases we were discussing earlier where we were on the left-hand side of the versus.

Senator SESSIONS. Well, this is an important, maybe even a pivotal issue in this litigation. Is EPA estopped from pursuing a suit against TVA because they knew about these improvements and have been approving these procedures for 16 years? Isn't that a significant issue in the case?

Mr. SANSONETTI. It is a significant issue in the case.

Senator SESSIONS. Your attorney has now asserted on the record that they did not know about it. That keeps the lawsuit alive, but I wonder if you have had occasion to question that attorney and if he was in error in that regard as a matter of ethics, is he not required to correct the record?

Mr. SANSONETTI. I obviously am not aware of the situation you just described, but I sure will ask about it, yes sir.

Senator SESSIONS. I think what I am going to ask you to do is to review that simple question, and if your attorney was in error, to correct the record, because that has something to do with it.

Mr. Holmstead, why did the EPA not notice a rule change instead of commencing litigation? Why didn't they announce, have public hearings, take the public input, go through the process of just changing the rules if they thought that the things were not working out well?

Mr. HOLMSTEAD. I know that the Agency believes that it did not change the rule; that in fact what the Agency has argued is that those rules have been in place for many years and people were on notice of them. So I believe that is why they did not think it was necessary to go through a notice and comment rulemaking to do anything because they believe that those rules were well-understood for a number of years.

Senator SESSIONS. So they understood, but they just allowed it to continue, presumably?

Mr. HOLMSTEAD. Again, I know just in general that there is a lot of controversy around this issue, whether the Agency was aware that some of these changes were going on. I honestly do not know. My impression is that for the most part, these facilities were not the subject of EPA investigations or inspections, and so the Agency may not have known that these changes were going on, but I honestly do not know very much about the record in that respect.

Senator SESSIONS. I hope that whatever rules you propose you will do what you said and will make the air cleaner. I think we can definitely do that, and I would support that, but I also think we need to be careful about suing businesses for damages back 16 years for things that it is pretty obvious to anybody that is looking at their plants what has been going on.

Thank you, Mr. Chairman.

Senator LEAHY. The order we will have now will be Senator Clinton, Senator Durbin, and Senator Corzine.

OPENING STATEMENT OF HON. HILLARY RODHAM CLINTON, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator CLINTON. Thank you very much, Mr. Chairman.

Well, I think as our witnesses can tell, there are numerous questions that many of us will want to submit in writing, because clearly we do not have the time to go into all of them. I am also hoping that we will have a chance to hear from our next panels, one of which includes our Attorney General from New York, Eliot Spitzer, who has been extremely active on the legal front in trying to determine how best to enforce the rules that are in existence, that we are now hearing testimony about changing with respect to power plant emissions. A number of Senators have asked questions with respect to the EPA's prior actions, especially with respect to en-

forcement. Eric Schaeffer, who was the director of EPA's Office of Regulatory Enforcement is also scheduled to testify and I am sure that he can answer a number of the questions that have been raised.

One of the problems that we are having here, of course, is that the reason this hearing is being held is that many of the changes which are being discussed are intended to go directly to final status. Therefore, we have to comment now because we won't have the opportunity to comment if the Administration carries forward on its intention to finalize these rule changes. Now, many of us have these continuing questions and I think that it would be appropriate, Mr. Holmstead, for us to have more of an opportunity to comment than we have at the moment. Would you commit to allowing us that opportunity to comment going forward, before these rules are finalized?

Mr. HOLMSTEAD. What I will commit to is that we will satisfy all of the requirements under the Administrative Procedure Act to make sure that there has been a full and complete opportunity for the public to comment on all rules before they go final. So I can assure you that everything that we promulgate will be in full compliance with all of the public notice and comment requirements that are imposed upon the Agency, yes.

Senator CLINTON. In your testimony, you have repeatedly said that you do not intend that these changes would be retroactive. Will you commit that EPA will explicitly state in the preamble to these proposed rule changes that the NSR changes that the Agency is promulgating will not be retroactive?

Mr. HOLMSTEAD. It is certainly our intent to make these prospective only, and I believe that the preambles already make that statement, that they are not retroactive, they are prospective only, but I will go back and double-check on that to make sure that that is the case.

Senator CLINTON. Here is the problem that many of us are having, and perhaps it is because the rules are being described by some, including those within the Agency, somewhat differently than your testimony seems to describe them. I was taken aback by your testimony that your rule changes would not have any effect on power plant emissions. Did I hear you correctly?

Mr. HOLMSTEAD. What I said is, it will not have any effect on SO_2 emissions from power plants, which are by far the biggest issue, as you know, in New York because of the acid rain. We actually have for the power sector a very sophisticated computer model that allows us to look at the response in the industry to any number of different rule changes. That has been a relatively simple matter to conduct the analysis using that computer model for SO_2 emissions. We have not yet finished that for the other emission of concern, which is NOx, but our preliminary indications are that any change that we would make might have a modest impact one way or the other, but we have not finalized that analysis. When we do, we will make that public.

Senator CLINTON. Mr. Holmstead, with all due respect, others also have computer models and it is very difficult to understand how you can claim that this is either neutral, having no effect, or in some of the rest of your testimony actually claiming it would be

an improvement, when on the basis of the change in the baseline that you discussed earlier with Senator Edwards, there would be, as I understand your testimony, the opportunity for a refinery to substitute its current emission baseline, which is now equal to the average of the last 2 years' emissions, with a new baseline consisting of the average of the 2-years of highest emissions within the last 10 years. Now, based on modeling that others have done, this would allow significant increases in SO_2 emissions and I have before me some of the specific plants—a plant in Detroit, MI; the Marathon Oil plant, current baseline 1,984.42 tons up to 4,194.55. You know, a three times increase, just about.

There are other plants that have been modeled. These baseline changes at least according to the modeling that I have seen, these are oil refineries, obviously, not power plants, but they are still going to add SO_2 to the air. So you have got on the one hand a claim that the power plant emissions stay even, then you have got a permission within the baseline that will permit an added load of SO_2 into the atmosphere.

I am not asking you to respond. I am just explaining that many of us find your testimony very difficult to follow. Now, maybe that is the purpose of it, but it does not provide much benefit to those of us who are trying to understand the true impact of these changes. I can only say, based on the information provided to me and my staff, these are sweeping changes. I would argue they are illegal changes; that they violate the Clean Air Act; that they violate the capacity of this Administration to rewrite legislation that is the province of this Congress.

I certainly will be joining with my colleague, Senator Schumer, and our Attorney General to join an amicus brief against your ability to promulgate and enforce these illegal changes.

Mr. HOLMSTEAD. I am actually sorry to hear that anybody would do that before they have actually seen the changes that we have made.

Senator CLINTON. We have not seen them.

Mr. HOLMSTEAD. Right. That is my question.

Senator CLINTON. But once they are promulgated—you know, once—you have come up to testify about something that you don't share information with us fully. We get contradictory approaches about what it will or will not mean. You talk about computer modeling. Other people, based on the information they have available do different computer modeling. You are essentially trying to change the law without informing this Congress sufficiently so that it can make an informed decision.

Mr. HOLMSTEAD. Again, I would be happy to take however much time you would like to walk through each of these things. On the baseline issue, when I was talking about computer modeling, I was specifically referring to power plants. I have said we have modeled that very comprehensively and we can say that almost regardless of what we did to the NSR program, it would not make any difference with respect to SO_2 emissions from power plants.

With respect to refineries that you have looked at, again I have seen—and by the way, I think what you are referring to is not a modeling study. It is some assertions made by some environmental activists that again have not understood what we are proposing to

do. All of those plants have new emission requirements that have come into place over the last 10 years, and so you have to look at what those—for instance, we have done a number of MACT standards that affect the refinery industry. All of those now have to be included in the baseline.

So I cannot tell you, and I do not think anybody can tell you right now for a specific plant, without doing the analysis, whether the baseline will be higher or lower. That was the point——

Senator CLINTON. Why would we promulgate regulations in the 21st century that would lead to any higher baseline for any SO_2 emissions? I don't care whether it is a refinery or a power plant. All I know is that it lands in my lakes and rivers and in the lungs in my people. Why on earth would you even contemplate rule changes that would push us backward in the wrong direction?

Mr. HOLMSTEAD. We are not. As I have said before——

Senator CLINTON. You have said many things before.

Mr. HOLMSTEAD. I think I have been entirely consistent in everything I have said, at least I certainly try to be, and I am happy to take as much time as you or others would like, because this is an important program, and those of us at EPA who have worked on these changes feel pretty strongly that we are making a dramatic improvement in a program that everybody knows for more than 10 years is broken and needs to be fixed. I can explain all of these in a great deal of detail if you would like me to, but what I can say is this—the environment will not be worse off because of these changes. In fact, it will be better off, and I am happy to walk you through on each individual thing and explain to you why that is the case, but again, we have spent an extraordinary amount of time working on these issues and we want to make the air better.

In fact, one of the things that amazes me about this whole debate, the big issue that you have in your State is not emissions from refineries, it is emissions from power plants.

Senator CLINTON. Right.

Mr. HOLMSTEAD. We agree that is a huge issue, and that is why we have proposed legislation, and I know you are supporting similar legislation that would actually substantially reduce those emissions in a way that NSR just doesn't do.

So I hope that for those of us that really care about improving the environment will focus on——

Senator CLINTON. What legislation? Are you talking about the Clean Skies Act?

Mr. HOLMSTEAD. The Clear Skies Act, yes.

Senator CLINTON. The Clear Skies Act, which we have not yet received. So we are being asked to put our trust in legislation whose language we have not received, that it will do what you are claiming to do. And we are also asked to trust NSR changes which are claiming, in conjunction with legislation that has not yet been delivered to the Congress, will make our skies better.

Mr. HOLMSTEAD. The Clear Skies proposal is not a complex thing. It takes emissions from today's levels, reduces them by 73 percent——

Senator CLINTON. That is not the way it is interpreted by many of the rest of us. In fact, we think it does less than if we just con-

tinued with the Clean Air Act right now. So there is a dispute about that, Mr. Holmstead.

Mr. HOLMSTEAD. But anybody who I think has analyzed the current Clean Air Act compared to, say, Clear Skies, and again our career folks who work on the Clean Air Act, have worked on the Clean Air Act for 30 years, have done a projection of the emissions reduction we would get under the current Clean Air Act, compared to the President's Clear Skies proposal, and there is just no way under the current Clean Air Act to get anywhere near the reductions. Again, we would be happy to share—in fact, we have shared that information with everybody. We want to clean up the air. We want to make it cleaner. We want to do it as quickly as we can and as efficiently as we can, and that is what we are trying to do.

Senator JEFFORDS. OK.

Senator LEAHY. Someone said you do want to—you have been very consistent in one thing. You have explained that the Senators do not understand what is going on. You have explained the press does not understand what is going on. And you have explained that some of these environmentalists do not understand what is going on. I appreciate your air of infallibility, but I would also appreciate it if you would answer some of the followup questions you will be getting.

Senator Durbin.

OPENING STATEMENT OF HON. RICHARD J. DURBIN, U.S. SENATOR FROM THE STATE OF ILLINOIS

Senator DURBIN. Thank you very much, Mr. Chairman.

I think it is appropriate that this is a joint hearing between the Judiciary Committee and the Environment and Public Works Committee. I am glad that you are both doing this because all of us are concerned about the issues at hand and we understand that it is not just a question of how the law is written, but how it is enforced. For over 25 years, most of the action when it comes to this issue has been in court. On the Judiciary Committee, we have the responsibility of selecting, at least initially selecting the judges who will interpret these laws. So if there are those who think that those decisions about the men and women who serve on the court are not that consequential, consider the issue that we are talking about today.

I come to this issue with a State that has a dramatic investment in this debate. We had, and I underline had, a substantial coal-producing industry in Illinois. It is all but gone today. In the name of clean air, we have seen our high-sulfur coal virtually disappear. There are good and sound arguments that with the current technology, we had no choice. But many of us feel that States like Illinois have given at the office and given at the coal mine and given in the small communities to the issue of clean air. That is why when we get to this discussion about whether or not we will enforce the laws that have closed down the industry, the coal-mining industry in my State, many of us have a certain passion. If we are going to close down that industry in the name of clean air, for God's sake, we are not going to give up the battle in a marathon court proceeding which this has turned out to be.

Mr. Holmstead, help me and see if I understand the basic premise of this whole hearing. So in 1970 when we passed the Clean Air Act, and in 1977 when we amended it, we said we want you to have less air pollution, fewer emissions coming out of industry in America, and we are going to set standards. Now, we understand there are some 17,000 companies that are already in business that have air emissions and we know we are going to have to grandfather them in, but here is our notice to you in 1977.

When you start to change these plants, if you are going to make any significant change in the plants, particularly one that creates more air emissions, then you are going to have to start complying with the new law. We will grandfather you as long as you are dealing with the old plant, but when you start making it a new or newer plant, you are going to have to come into compliance. That seems to me to be a pretty fair and reasonable standard.

But if I am not mistaken, for 25 years this has been the source of nonstop litigation between the industry and the government as to whether old plants, grandfathered in, were ever going to clean up their acts. One of these issues got down to the question of routine maintenance. Attorney General Spitzer has in his testimony here an allegation to leaky pipes. Well, if you fix a leaky pipe, you know, is that routine maintenance?

But let me ask you this specifically, Mr. Holmstead, do you feel that what you are proposing will broaden or narrow the definition of maintenance so that older grandfathered plants will have to meet new air quality standards?

Mr. HOLMSTEAD. Older plants right now have to meet new air quality standards.

Senator DURBIN. Yes.

Mr. HOLMSTEAD. There are dozens and dozens of programs that Congress created that apply to these older plants. For instance, the most important one that I think everybody, and the one that has impacted the coal business in your State, is the acid rain program under Title IV, that every power plant in the country is subject to. So they are subject to that regulation. Every power plant in the country is also subject to the national ambient air quality standard. So if there is a power plant or any other old facility that causes a violation of the national ambient air quality standards, then those have to be regulated.

Senator DURBIN. Understood. But your proposal—let's get to the question—your proposal, I am asking you, does it expand or narrow the exception for routine maintenance so that older plants, grandfathered plants, do not have to meet new standards to reduce emissions of air pollution?

Mr. HOLMSTEAD. I think the specific issue you are asking about has to do with the definition of routine maintenance, repair and replacement.

Senator DURBIN. I am asking a question—broaden or narrow? Now, you can try to go somewhere between those, but I think those are two fair standards. Does it broaden or narrow the standard for old plants on routine maintenance?

Mr. HOLMSTEAD. On routine maintenance, we have not made any changes yet. We are proposing a series of options. Some of them would broaden the definition of routine maintenance; others would

basically leave it where it is now. We are putting that proposal out for public comment so that everyone who is interested in that specific issue can take a look at it.

Senator DURBIN. Let me go to Mr. Spitzer's testimony and ask you this. Is the EPA proposing to allow companies to treat multimillion dollar, once-in-a-lifetime projects as routine maintenance, even though as industry documents establish, the power plant staff never considered the projects routine? Do you feel that your new regulations would achieve that?

Mr. HOLMSTEAD. Our new regulations do not address that issue. The regulations that we are proposing on routine maintenance, repair and replacement—we propose or we will be proposing a series of options on routine maintenance.

Senator DURBIN. Narrow or broaden?

Mr. HOLMSTEAD. Some of them could broaden; some of them would leave them where they are now.

Senator DURBIN. Let me just close, because my time is up and everybody has other things that they have to do and other panels are coming. Pardon our skepticism as we sit on this side of the table. Your refusal or failure or inability to answer that question, which I think is about as basic as it gets——

Mr. HOLMSTEAD. I thought I just answered it.

Senator DURBIN [continuing]. Does it broaden some, narrow some, maybe we will let you see it sometime soon——

Mr. HOLMSTEAD. This is a proposed rule.

Senator DURBIN [continuing]. Maybe it will come later. It is a proposal, trust us, we love you.

[Laughter.]

Senator DURBIN. I mean, all of these statements notwithstanding, we are looking at an Administration that struggled with the concept of arsenic in drinking water. We are looking at an Administration that does not want to fund the Superfund program again to clean up toxic waste. We are dealing with an Administration that won't even disclose the names of the industry leaders who sat down with the Vice President to write the energy bill; an Administration that opposes any new fuel efficiency standards to deal with our Nation's energy crisis. I hope you understand our skepticism as we sit on this side of the table and hear that kind of testimony.

Thank you, Mr. Chairman.

Senator LEAHY. Thank you.

Senator Corzine.

OPENING STATEMENT OF HON. JON S. CORZINE, U.S. SENATOR FROM THE STATE OF NEW JERSEY

Senator CORZINE. Thank you, Chairmen, and I appreciate your holding the hearing.

I can only say "ditto" to my colleague from Illinois' underlying fundamental premises that bring skepticism, but I will say one positive thing. I noticed in your response to Senator Clinton you said that New York's, I presume that also would include New Jersey's, air is negatively impacted most by out-of-State power plants, as opposed to refineries. That is certainly the case.

I want to start with the specific and move to the more general. There is a lot of concern in our State, particularly in the northwest portion of it, with regard to a power plant, PPL's Martin's Creek Power plant in Pennsylvania. Asthma rates have doubled in the last 10 years. This is an old plant that has no scrubbers and contributes significantly to air pollution problems in that sector of the State. Now, they are applying for authorization for building a new plant on the same site. I wonder if EPA is planning on conducting a review with regard to that plant.

Senator Torricelli has written Administrator Whitman and a number of us have inquired about this and we have not received an answer with regard to that individual power plant. I think it is symptomatic of a lot of what happens in general, but is one where the public health impact is very measurable and clear in a specific sector of our State, and there is a failure to deal with NSR provisions, at least with the old parts of that plant, and now they are trying to expand it.

So I wonder if you could comment on that specifically. Do you know whether there has been an NSR review with regard to it?

Mr. HOLMSTEAD. Here is what I know about that plant. I believe that we are conducting, along with the State, an investigation of possible NSR violations there. That is really all that I know about it at this point, but yes, if it is something that you have asked about, I am sure that that is something that we will look into further.

By the way, what I have tried to say a number of times is, we absolutely agree that we need to have an effective way to reduce emissions from these older coal-fire power plants. We agree completely that they contribute to serious health problems in your State, and Senator Clinton, in your State. I think all of us would like to find an effective way of reducing those emissions as quickly as we can.

Senator CORZINE. But if we do not address the specifics, if there are not actions taken by EPA with regard to specifics when actions are being taken to expand the business, then the purpose of the NSR is not being fulfilled and we are not making real progress on this. That is before we get to the cumulative effect of the proposed changes in the rules, which a lot of us are fairly skeptical, are intended to upgrade pollution controls, but actually undermine them.

Has EPA referred any additional NSR enforcement cases to the Justice Department since Administrator Whitman took office?

Mr. HOLMSTEAD. I might ask Mr. Sansonetti. I do not know the answer to that question. I do not do the enforcement issues at EPA. I do the policy issues.

Mr. SANSONETTI. The Enforcement Administrator at EPA has continued to have its investigators continue their work and we are continuing to receive cases from them.

Senator CORZINE. Have there been cases referred to the Justice Department since Administrator Whitman took office?

Mr. SANSONETTI. Yes.

Senator CORZINE. Is Martin's Creek one of those?

Mr. SANSONETTI. I would not know. Sorry.

Senator CORZINE. I would like to request a list of those references, if that is possible.

I was not here earlier, but I am under the impression that there was a statement made by you, Mr. Holmstead, that NSR does not produce benefits from existing sources unless it is violated—hard to understand. Isn't it true that NSR has been violated many times by existing sources like Martin's Creek?

Mr. HOLMSTEAD. I do not know about the Martin's Creek Plant, but yes it appears that many existing sources have violated NSR and that is the work that our enforcement office, as well as Mr. Sansonetti's office, are working on right now. We do believe that as a result of those cases, those are likely to lead either to settlements or judgments that will result in emissions reductions, yes.

Senator CORZINE. But you are arguing that the NSR has no benefits with respect to existing sources?

Mr. HOLMSTEAD. No, what I said was this. The big issue that I think many of us in this room are concerned about are sulfur dioxide emissions from power plants—by far the biggest single pollutant emitted by any industrial source in the United States. We have done an extensive analysis of that particular issue, and what we can say is that if companies comply with the NSR program, it does not reduce SO_2 emissions from the utility sector at all. That is absolutely—we are happy to share the analysis, and it is not that hard to understand. I can walk you through it if you would like, but if companies comply with the NSR program as it is right now, with a very stringent, narrow definition of routine maintenance, repair and replacement, it does not lead to any reductions in SO_2 emissions from the power sector.

Here is the basic reason why. The Act says that a company triggers NSR only if it makes a physical change that results in a significant emissions increase. So as long as they keep their emissions where they are now, they can make any changes they would like to. So all of our analysis, and again we have some very sophisticated computer modeling. We know more about this industry than any other industry. We can analyze the impact of the current rule versus any number of changes, and no matter how we analyze that, the program does not reduce SO_2 emissions from existing power plants.

As I said before, if companies violate the NSR program, then at that point they are subject to enforcement action, and through the enforcement process we can actually get some reductions, although even there you only get reductions if a company agrees as part of a settlement to retire some of the SO_2 allowances that it has under the acid rain program. But again, I am happy to provide anybody with that analysis, but it is absolutely true that that is just the fact. That is the way the law works.

[The prepared statement of Senator Corzine follows:]

STATEMENT OF SENATOR JON S. CORZINE, U.S. SENATOR FROM THE STATE OF NEW JERSEY

I thank both Chairmen for convening today's hearing.

Mr. Chairmen, air quality problems continue to plague New Jerseyans. Some of these problems are of our own making. But according to the New Jersey Department of Environmental Protection, one-third of New Jersey's air quality problems originate outside of New Jersey.

That's why enforcement of Federal clean air laws is so important. And that's one of the reasons why the Clean Air Act New Source Review provisions are so important to my State.

So I look forward to hearing the Administration explain their New Source Review proposals in more detail. Because as far as I can tell, the proposals are rollbacks, pure and simple. They may be help industry, but they're going to hurt public health in New Jersey and across the country. In fact, Abt (pronounced Apt) Associates estimates that that rolling back New Source Review will result in 160–220 premature deaths annually and between 3,000 and 4,300 asthma attacks annually in New Jersey alone.

If the Administration disagrees with these numbers, then I invite them to produce their own. Because to my knowledge, the Administration has not conducted an analysis of the health impacts of their proposals.

For that matter, I don't think that the Administration has conducted a rigorous analysis of the business impacts of the current NSR rules that they are proposing to change. Today's EPA testimony asserts that uncertainty about the current NSR rules "has resulted in the delay or cancellation of some projects that would maintain or improve reliability, efficiency and safety of existing energy capacity." This is vague, anecdotal evidence at best, and is no basis for trading away the tangible health benefits that have been and can yet be achieved by rigorously enforcing NSR.

Mr. Chairmen, I won't take up too much more time, as we have many other members to hear from and many witnesses to hear from as well. But I do want to run through just a few additional points, because this issue is so important.

First, I am greatly concerned about the effect of the proposals on pending NSR cases. In New Jersey, PSEG settled with EPA earlier this year. But many of PSEG's competitors are stalling, betting that they can wait out the Administration's changes. Now the Administration will argue that its proposals will have no effect on ongoing NSR enforcement. Yet we will hear testimony today that proves that the proposals have already impacted ongoing cases.

Second, I am concerned about the impacts of the proposals on the full range of pollution sources that they apply to. The Administration offers its Clear Skies proposal as better way to achieve air quality benefits than New Source Review. Yet Clear Skies applies only to power plants, while New Source Review applies to thousands of other sources of pollution such as oil refineries. What is the Administration's plan for continuing to protect the health of families who live near refineries?

Third, I am concerned that the Administration's proposals may run counter to the intent of the Clean Air Act. In spite of claims to the contrary, NSR has consistently been interpreted to allow for only *de minimis* increases in pollution from grandfathered sources without triggering installation of new pollution control technologies. But it appears that the Administration proposals will have the effect of allowing significant pollution increases without triggering NSR requirements.

Mr. Chairmen, I think the question before us today is simple. Will the Administration proceed with its NSR proposals? Will they allow industry to continue to operate old, dirty plants indefinitely? Or will the Administration fulfill the promise of the Clean Air Act by pulling these proposals and vigorously enforcing New Source Review to protect New Jerseyans and all Americans. Thank you.

Senator LEAHY. Thank you.

If there are no further questions, I know that Mr. Sansonetti and Mr. Holmstead would love to have this go on a lot longer, but on the basis they may have other things to do, Mr. Holmstead, thank you; Mr. Sansonetti, thank you.

Senator JEFFORDS. Yes, thank you both.

Senator LEAHY. I turn it over to you.

Senator JEFFORDS. We will continue to continue. I will have to leave shortly and be able to come back, but Senator Clinton will take over. We will now go to the next panel.

Senator LEAHY. Why don't we take about a 1-minute break just to let the staff change the——

[Recess.]

Senator JEFFORDS [presiding]. I want to thank our next panel. I will be here somewhat briefly. I have a meeting with the Administration that I cannot change, but I want to thank the panelists. I know they are all experts, and we are appreciative of your guidance. I will ask each of the panelists to introduce themselves and then we will proceed. I will start with my good friend my Vermont.

Mr. SORRELL. Yes, thank you, Mr. Chairman. I am William Sorrell, the Attorney General of Vermont.

Mr. SPITZER. I am Eliot Spitzer, the Attorney General of New York State.

Mr. PRYOR. I am Bill Pryor, the Attorney General of Alabama.

Senator JEFFORDS. Fine. I believe you probably have opening statements. Please, General Sorrell, will you commence?

STATEMENT OF WILLIAM H. SORRELL, ATTORNEY GENERAL, STATE OF VERMONT

Mr. SORRELL. Thank you, Chairman Jeffords, Chairman Leahy, members of the committees. Thank you very much for allowing me this opportunity to share my thoughts regarding the New Source Review program.

To the two Chairs, particularly, I bring greetings and thanks from so many of your friends from home.

Let me be blunt, we need your help. The quality of our Nation's air is of critical importance, not just to those of us living in the Northeastern United States, but also to everyone in this Nation, and most especially our children, the elderly and those among us who suffer from respiratory illness.

We have worked very hard in Vermont to attain the quality of life that is so important to us. We value our natural resources and do our best to be sure we are not soiling our own backyard. I believe it is fair to say that we join the dialog regarding air pollution with clean hands.

Unfortunately, in Vermont we are living with the consequences of pollution problems that are not of our making. Our neighbors to the west are in some respects not being good neighbors. To give you an idea of the scope of the pollution caused by all dirty coal-fired power plants, I want to impress upon you that in 1998 all Vermont sources of sulfur dioxide pollutants, all sources—mobile, stationary, residential, industrial, commercial—all sources in 1998 from Vermont, a total of approximately 18,000 tons of SO_2. We are involved in the lawsuit that was filed by DOJ and EPA against American Energy Electric Power Company, which operates about 11 plants in the Midwest. Just looking at one of the plants that is in that litigation, it is the Cardinal Plant in Brilliant, OH. That plant alone in 1998 emitted more than 152,000 tons of sulfur dioxide. I might add that its stack-height, I am told, is over 800-feet high. We did not pick the worst offender. The Cardinal Plant is not the most heavily polluting of the plants that are in the litigation I mentioned.

We have good reason to be deeply concerned about massive amounts of air pollution being carried into our State by the prevailing winds. The impacts attributable to this wind-borne pollution in Vermont and regionally are sobering and bear repeating. In Vermont, 20 percent of our lakes are moderately to extremely sensitive to acid deposition, and several lakes are critically acidic and thus unable to support fish and/or other aquatic life. They are like swimming pools.

Various studies conclude that the percentage of acidified lakes is expected to increase or even double over the next four decades un-

less up-wind emissions of nitrogen oxide and SO_2 are significantly reduced.

Acid deposition is a major cause of the widespread decline of red spruce in high-elevation forests throughout the Northeast. Since the 1960's, more than half of large canopy trees in the Adirondack Mountains of New York and in our Green Mountains, and approximately one-quarter of large-canopy trees in the White Mountains of New Hampshire have died.

There is growing also evidence that the sugar maple decline is linked to acid deposition. Senator Jeffords, I know you realize how important sugar maples are to our maple syrup industry. According to one analysis, with a more than 80 percent reduction in electric utility emissions beyond that required under the 1990 Clean Air Act, recovery of certain watersheds to non-acidic levels will take 20 to 25 years, and recovery of the acid-neutralizing compounds in soils will not occur until the year 2050. That is with an 80 percent reduction in current emission levels, it will take that long for our environment to recover.

Our children and grandchildren in generations to come will know all of the devastating impacts resulting from decades of air pollution and will not see the recovery of the forests and lakes. Is this to be our legacy?

As a Nation, we must take swift and decisive action to improve the quality of the air. We applaud the efforts of EPA and DOJ in working cooperatively with the States to protect air quality. Our shared successes have included important victories affirming certain aspects of regulatory programs, and the Agency's determinations regarding the long-range transport of ozone-forming pollutants.

We also appreciate the ongoing efforts by the Agency and DOJ in seeking full implementation of EPA's regional haze rule, which will help to protect and improve visibility in our Nation's pristine wilderness areas, including the Shenandoah, Great Smoky Mountains, Yosemite and the Grand Canyon. This is not just a Northeastern issue.

New Hampshire, Maine and Vermont, joined by Utah and New Mexico, the National Tribal Environmental Council, and national advocacy groups have been actively involved in supporting this effort. We are hopeful that these efforts will lead to real improvements in the quality of our Nation's air in years to come.

The State of Vermont is also working cooperatively and productively with the Environmental Protection Agency, the Department of Justice, other States and national public interest advocacy groups to enforce the existing New Source Review program against corporations operating coal-fired power plants. There is no question that implementation by EPA of the reform package will seriously under-cut these efforts. Let me repeat, there is no question in our mind that implementation by EPA of the reform package will seriously under-cut the ongoing litigation efforts.

Now is not the time to water down the laws needed to protect air quality. The announced reforms of the New Source Review program will take us 180 degrees in the wrong direction. As one State regulator has put it, these reforms will assure longer lives for old dirty coal-fired power plants and shorter lives for Americans.

We very much hope that the Administration will change course and not backtrack on existing environmental protections. However, if it chooses to go forward with its announced changes, we encourage the Congress to reject such efforts to weaken the New Source Review program.

Thank you again for the opportunity to meet with you and to provide these comments, and I hope that all of my prepared comments will be made part of the record.

Senator JEFFORDS. They will be made part of the record.

I am going to make a little statement and do a little question. I have got to go. Governor Ridge does not like my opinion of what we should do with one of the parts of his operation, so I have to go meet with him.

What kind of impact will these changes have on the States' ability to have more stringent programs and protect local air quality? And what effect will they have on the NSR cases where Vermont has joined in filing?

Mr. SORRELL. I think they will have a significant impact on the litigation, certainly in any attempts to negotiate a settlement of the suits. In terms of your question on the impact on the States going further than the Federal Government to set or to maintain their own emissions standards or pollution control standards that might be more stringent than the Federal Government has set, it is my understanding that just yesterday two organizations of State and local air pollution control administrators wrote Administrator Whitman expressing objection and concern that the EPA proposals will set a standard and not allow States to maintain or to set higher or more stringent emissions standards unless it is done on some sort of a test-case basis that is affirmatively approved by the EPA.

So we hope very much through this process that the EPA will revisit that issue and allow individual—and to set stringent standards for emissions, but if individual States wish to go further and to set more stringent standards in their own backyards, that they would be allowed to do that.

Senator JEFFORDS. Well, thank you very much. As I say, I have to leave now, but I really appreciate your testimony and being here. I know, obviously, being a resident of Vermont that the problems we have had in the past, even some with New York State, but I will not get into those.

Senator SCHUMER. Please do.

[Laughter.]

Senator JEFFORDS. So thank you. I will be back, I assure you, probably before you are finished.

Senator Clinton will now take over.

Senator CLINTON [presiding]. Attorney General Spitzer, we are delighted that you are here and I can tell that this is of great interest to New York since both my colleague Senator Schumer and I have a great deal of interest in this issue and feel that it directly impacts on the health and the environment of our State.

I know you have a prepared statement, but I cannot help but ask that—you sat through the entire first panel, for which you should receive some kind of combat ribbon. I would love for you to perhaps add your observations to the confusing testimony that we heard from the Administration about the meaning and potential impact

of the proposed rules as you go forward. We are delighted that you are here.

STATEMENT OF ELIOT SPITZER, ATTORNEY GENERAL, STATE OF NEW YORK

Mr. SPITZER. Thank you, Senator Clinton. Thank you, Senator Schumer, also for being here.

I will take your lead and ask that my prepared testimony be submitted for the record. I would like merely to respond to a few of the points that were made this morning because I think they do bear responding to. To the extent they were addressed in my written testimony, I can be more succinct and more pointed in my testimony right now.

First, Mr. Holmstead took a quotation from the Washington Post this morning and completely misinterpreted it. He was trying to argue that the proposed regs from EPA have not had an impact on the pending litigation. He could not be further from the truth. The quotation he used is from a spokesman from my office. It says, "Nothing the Bush Administration does prospectively will have any impact on the violations these plants committed in the past." The point is, they committed violations. There were violations. They should be prosecuted civilly for those violations. They cannot rewrite that law.

However, the fact that we are in regulatory limbo right now has made it virtually impossible either to pursue finalizing settlements that should have been finalized with Vepco and Cinergy, or to pursue effectively ongoing litigations in the myriad of other cases that are pending.

We are caught, I would suggest, in an intentional regulatory limbo with the Administration having proposed and made very public the fact over a year ago that it was going to rewrite the NSR regs. They have refused to set forth the final regs, so we are caught between the Scylla and Charybdis of their not being any regs on the books that a court can rely upon, and the inability to attack what they will finally issue.

I would suggest this is an intentional decision made by the EPA, which has done everything it can do to hinder us. This is not an effort to study more and further. As has been pointed out, we do not even know with whom the Vice President met to discuss these proposed regs.

So to the extent that Mr. Holmstead was arguing that there has not been an impact on the pending litigations, I could not disagree more fundamentally. In my prepared testimony today, you can see how the judges who were presiding over the pending cases feel that their hands are being tied because they have an inability, or feel some hesitation, in imposing upon companies a remedy that may no longer be feasible or authorized by the regs that would be finally issued by the EPA. These proposal, this regulatory limbo has had a devastating impact upon our ability to ensure the cleanliness of the air that our children breathe.

I would also like to respond to the allegation made by one Senator that it was politics somehow underlying either our skepticism of what EPA is doing or the litigation. I would like to point out that when New York State filed these litigations, we were joined, I am

glad to say, by a significant number of East Coast States, neighbors and those who are farther afield. A decision was made specifically by the Governor of New Jersey at the time to join these litigations. The Governor of New Jersey then was Christie Todd Whitman.

These are litigations that are critical. And they are based, and this is point three, upon a static interpretation of statutes that has not changed. The notion of there being a newfangled interpretation that emanated from the EPA in the prior Administration is simply false. The case law in this matter is crystal clear, and I would cite to you two documents. I will read one, a letter that was sent by Administrator, former Governor Whitman to Congressman Mascara on November 9 of last year in which she said, "The cases did not hinge on a new interpretation of NSR rules." That is a direct quote. "Rather, EPA's interpretation of routine maintenance is consistent with both the statute and case law."

You see it as well in a DOJ brief that was submitted last week in which this Department of Justice felt constrained to say, the interpretation EPA urges in this current case is the same interpretation that the Seventh Circuit upheld more than a decade ago in *Wisconsin Electric Power* v. *Reilly* in the Seventh Circuit in 1990. There has not been a change in the law. It is constant. It is understood. It is understood by the industry. The documents obtained from the industry in discovery make it crystal clear they know the law.

I do not deny their right to try to change the law. That is their right. I respect it. That is what this process is about. But let us not be fooled into believing that the law has been ambiguous or that these lawsuits are predicated upon a new interpretation of the law. That simply is not the case.

I am also rather beguiled by the argument that has been made by several Senators this morning that because there has been litigation since the statute has been promulgated in the past few years, and therefore there must be a flaw in the statute. It seems to me that enforcement actions show clearly that the statute has teeth. They would force us to repeal most of the statutes that have been passed by this Congress. The very fact that we have enforcement actions means that we as prosecutors are doing our job—nothing more, nothing less.

Let me make a few final points if I may. The proposed rules have been publicized by the EPA. Yet, Mr. Holmstead likes to hide behind the fact, and I lost count how many times he said this morning, that, there may be proposals. They are not yet final. Therefore, don't criticize us. However, it has been over a year since this process began and they have very publicly and in many discussions with industry discussed what these proposed rules should look like. If the rules look anything like the proposals, anything like what the public statements by this Administration have been, I will go to court to overturn them. I am proud, Senators Clinton and Schumer, that you will join in that effort.

The point here is very simple. This Administration cannot gut the Clean Air Act unilaterally. Congress passed the statute. Congress wrote into the law a particular meaning that was understood and has been understood since day one, judicially articulated, un-

derstood by every participant since day one. This Administration cannot by administrative fiat repeal that statute. It would be an illegal act. We will go to court to prevent it, and I think we will win.

The issue is who pays. Will the companies pay as the statute said they should? And they may pass that cost back to their ratepayers. That is a regulatory process. Or will we continue to see people dying of cancer and asthma without doing anything? That is the only question. I think the skepticism that was evidenced by at least one side of this room this morning toward Mr. Holmstead makes it very clear what the right decision should be.

Thank you.

Senator CLINTON. Thank you, Attorney General Spitzer.

Attorney General Pryor, we welcome you. There are two attorneys general named Pryor, because I know you have a colleague in Arkansas also named Pryor, so it must be a good name to be elected Attorney General.

Mr. PRYOR. That colleague, Senator Clinton, as you well know, is trying to become one of your colleagues.

Senator CLINTON. That is right.

Mr. PRYOR. He is a great guy and a distinguished colleague.

STATEMENT OF BILL PRYOR, ATTORNEY GENERAL, STATE OF ALABAMA, MONTGOMERY, AL

Mr. PRYOR. Senator Clinton, Senator Schumer and Senator Sessions, I appreciate the opportunity to be with you today, along with my distinguished colleagues, General Sorrell and General Spitzer, to discuss an important issue—Clean Air Act, New Source Review.

As the Attorney General of a State that exports surplus electricity, my point of view may be a little different from that of my colleagues who represent States that import electricity. I support the thrust of the report submitted to the President by the EPA Administrator to revitalize the NSR program and in so doing to restore the delicate balance of cooperative federalism embodied in the Clean Air Act Amendments of 1970.

Until the 1970's, the maintenance of clean air was viewed as predominantly a State and local concern. In 1970, after a series of smaller experiments, Congress adopted a new blueprint for the battle against air pollution. The new plan created a model of cooperative federalism.

This new model gave the Federal Government responsibility for establishing national air quality standards, along with a variety of enforcement tools for ensuring that those standards are met.

The Clear Air Act reserved to each State, however, "The primary responsibility for assuring air quality within the entire geographic region comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained within each air quality control region in such State." Underlying this provision was the congressional finding that "air pollution prevention . . . is the primary responsibility of States and local governments."

In a series of decisions in the mid–1970's interpreting the then-new statute, the Supreme Court laid out and clarified the Act's division of responsibilities between the Federal Government and the

States. In the quarter-century since these cases, the Federal Courts have staunchly protected the federalist design of the Clean Air Act.

For example, in 1984 the Seventh Circuit struck down an attempt by EPA to strengthen a State Implementation Plan through a partial approval that was more akin to an amendment. As Judge Posner explained, "The Clean Air Act is an experiment in federalism, and EPA may not run roughshod over the procedural prerogatives that the Act has reserved to the States, especially when, as in this case, the Agency is overriding State policy."

As these and other courts have acknowledged, the delegation of implementation decisions to the States reflects not only its spirit of comity, but also a recognition that State regulators, well-versed in local needs and circumstances, are best able to craft detailed programs to improve air quality while ensuring the continued availability of energy and maintaining economic prosperity.

In the late 1990's, EPA upset this sound design. EPA commenced enforcement actions against a variety of companies, including a cross-section of the Nation's utilities, declaring that certain plan activities triggered the extensive NSR permitting requirements.

For two decades, EPA, front-line State regulators and regulated sources had all interpreted these activities as falling within an exclusion for routine maintenance, repair and replacement. Their common understanding was that NSR applied only to major modification activities that are akin to new construction. During the Clinton Administration, EPA advanced a novel interpretation that would require the adoption of state-of-the-art pollution controls at existing sources for activities that State regulators had considered routine maintenance, repair and replacement activities.

In several instances, State and local regulators inspected the facilities that became the subject of EPA enforcement actions—before or immediately after the maintenance activities—without suggesting that a permit was necessary. Indeed, some plants sought out and received explicit determinations from State regulators that a particular maintenance activity did not trigger the NSR requirements.

EPA undertook this abrupt reversal of course without notice and comment rulemaking and without consulting the States, which had the primary responsibility to implement NSR standards for over 20 years. EPA's course eviscerated the cooperative federalist approach that is the heart of Congress' design. EPA invaded the province of the States and threw their respective air pollution control programs into upheaval—my State's clean air administrator uses the term "chaos"—by reversing, with the blunt tool of enforcement instead of collaborative rulemaking, interpretations that are central to day-to-day activities of State regulators. Clarity and consistency are vital to State regulators, as well as power generators, and must be restored. I urge these committees to work with the President and the EPA in a bipartisan spirit to develop better-defined standards of New Source Review consistent with the original design of cooperative federalism in the enforcement of the Clean Air Act. I will be happy to answer questions.

Senator CLINTON. Thank you very much, General Pryor.

I am going to yield my time for questions to my colleague, Senator Schumer.

OPENING STATEMENT OF HON. CHARLES E. SCHUMER, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator SCHUMER. Thank you, chairman.

I want to thank all of our witnesses, particularly my Attorney General, who has been such a leader in this. We are just amazed in New York. Here we had successful lawsuits which our Attorney General spearheaded. You had companies finally coming to the table, and boom, the rug was pulled out from under it by this Administration policy.

The thing that galls me so about this, I have to tell everybody, and particularly our fine Attorney General from Alabama, it is, you know, State by State. Well, our State has done a great job making sure its power plants comply and do a better job. But we have wind, and we have a handful of plants in the Ohio Valley that build their smokestacks way into the air so the pollution that they spew will not fall on their people, but gets blown over to us. If there was ever a need for interstate action, it is here.

The fact that you have just a handful of plants poisoning—that is the only word that can be used—poisoning not only our lakes and our streams, a quarter of our beautiful Adirondack lakes and streams are dead, no life. It will go to half in 10 years. This is now beginning to happen in other parts of the country. We learned it first, but we have seen it elsewhere—calls for strong action; does not call for saying to the polluter, which is in economic Adam Smith terms, creating an external negative good that has to be recaptured. It is their responsibility. You do some good, you should get economic credit. This is strict economic model. But if you do economic harm, you should be forced to recapture, but just because it is in the air does not mean you are immune from it. You created that bad, as well as creating a good, and good economics says the two should be reconciled.

That is what we have tried to do here. The anger that I have on this issue is just large because it is a small group, a small group of power plants that are destroying the environment of a large part of my State, and actually at the bottom line, killing people, making them less well, shorter. It is indirect. It is not a standard of murder. But sure enough, if these plants would clean up their acts, a lot of people would be living longer and healthier.

So I just—you have answered the questions I have had in the anticipatory round. I just want to say to our Attorney General and to the others in the Northeast, Democrat and Republican, that we are going to move forward here. We are not going to let a small group of power plants who have enormous political clout, poison our environment and poison our people. It can be changed. It can be changed relatively easily, without huge amounts of cost, and it ought to happen immediately.

I want to thank you for the good work you have done here, Eliot, and yield back my time.

Thank you.

[The prepared statement of Senator Schumer follows:]

STATEMENT OF HON. CHARLES E. SCHUMER, U.S. SENATOR FROM THE STATE OF NEW YORK

I would like to thank Chairman Leahy and Chairman Jeffords for holding this important and timely hearing on New Source Review. I would also like to welcome New York State Attorney General Eliot Spitzer to the hearing. Attorney General Spitzer has been leading the charge against power plants that do not comply with New Source Review. Our offices have worked together very closely on this issue and I appreciate him testifying today.

It is a challenge to imagine a more aggressive attack on our clean air protections or a more blatant disregard for the health of our citizens and our environment than the announcement EPA Administrator Whitman made on June 13 to effectively gut the Clean Air Act's New Source Review program.

I know that many of my colleagues have already spoken about the ill effects these proposed changes will have on our air, waterways and forests. I would just like to take a minute to describe the effects such changes will have on my home State of New York.

Ecosystems throughout New York have already been devastated by acid rain created by pollution from factories in Ohio, Indiana, Virginia, West Virginia, Kentucky and elsewhere. According to the EPA's own data bases, the Gavin Plant in Ohio alone emits over one-half the NOx of all power plants in New York combined.

The Adirondacks have endured the worst damage in the Nation from acid rain, with over 500 of its lakes now unable to sustain life—a number which is expected to double over the next 40 years.

The Administration has yet to put forth a comprehensive proposal that would effectively improve air quality in the Northeast, reduce unlawful emissions that produce acid rain and reverse the recent trend of high ozone readings in New York. Instead, we have seen numerous attempts to rollback any progress we have been making in this area.

This latest attempt, which will make it easier for power plants to pollute our air at the expense of our citizens, raises numerous questions. I am particularly concerned about the effects these changes will have on pending enforcement cases and I look forward to having the opportunity to pose some of these questions today.

These cases play a key role protecting the health and lives of tens of millions of people. It is estimated that pollution from the targeted plants shortens the lives of between 5,500 and 9,000 people each year.

I have already sent a letter to Administrator Whitman asking that the EPA immediately review the grave consequences of its New Source Review announcement and retreat from the dangerous path down which we are headed.

We simply cannot allow this assault on our clean air to go unnoticed.

Senator CLINTON. Senator Sessions.

Senator SESSIONS. Thank you, Madam Chairman.

Attorney General Pryor, it is good to have you in Washington.

Mr. PRYOR. Thank you, Senator.

Senator SESSIONS. I appreciate your service. Attorney General Pryor is just a tremendous Attorney General. He is one of the finest lawyers I have ever known, and was editor-in-chief of the Tulane Law Review and he cares deeply about public policy and doing the right thing.

You know, General Spitzer, I admire your advocacy and your passion for making things better for the people of New York. I remain a bit troubled by one of the comments Attorney General Pryor said that some of these companies that were being sued actually had explicit approval for the activities they have taken. Just on a matter of administrative procedures and due process fairness in the court of law, isn't that something we ought to concern ourselves with, that there has been an understanding or in some cases an explicit recognition that these kind of improvements in a plant do not constitute the kind of modifications that violate the New Source Review?

Mr. SPITZER. Well, Senator, as I said in my testimony, I think indeed there has been a very constant understanding of what the

definition of routine maintenance meant. I think when we parse, and we have done this in our briefs that has been submitted to many courts and the judicial opinions themselves, and I would suggest that you read the WEPCO case and other judicial opinions that have reviewed the history of what routine maintenance means and the history of the Clean Air Act. I think you will see a very constant strain of what that term of art was meant to mean by the Congress, what it meant to EPA, and what it has meant to the courts. That is why I quoted only two of the many possible citations I could have pulled from, because I thought they were recent and they came from this Administration, and therefore they might be more probative.

With respect to your due process concern that perhaps a State agency somewhere gave a seal of approval to an improvement and that State agency or that administrative board or that county supervisor or whomever said, well, I think this means this does not violate that threshold and does not cross the boundary of routine to non-routine—well frankly, this is a statute that was passed by the Congress to be interpreted by the courts. The fact that a waiver perhaps was given properly or improperly by another individual is not going to be, to me, dispositive over whether or not that is going to be a final determination.

Now, should we be worried about government issuing inconsistent decisions? Of course we should. That is something we have been trying to mediate through the 200-plus years of our federalism. Attorney General Pryor and I have had some spirited and informed debates about federalism and how you apply it in these different contexts. But I do not think there is any question that right now we are dealing with a Federal statute, Federal regs that are going to be interpreted by the Federal Courts and have been interpreted in a way that has been constant.

Senator SESSIONS. Well, you know, Attorney General Mike Moore of Mississippi has written to Attorney General Ashcroft, and of course Mike Moore has been a strong attorney general also, a vigorous advocate.

Mr. SPITZER. Yes, sir, he has been.

Senator SESSIONS. He was a leader in the effort against smoking and the State lawsuits against tobacco and he testified before the Judiciary Committee a number of times. He has written, and I will quote from his letter. I understand that the Director of Virginia's Air Program has written to the EPA that, "If EPA wants to change the way they have historically looked at routine maintenance, repair and replacement, they should do it by rulemaking, rather than an enforcement initiative that contradicts EPA's own policies for the last 25 years." Moore goes on to say, "I strongly agree that any significant departure from prior regulatory practice should be preceded by notice and then applied prospectively only. I am concerned that EPA has not historically applied the Clean Air Act modification rule in the manner in which EPA is now attempting to apply it through those enforcement actions. If you find this is the case, I urge you to take whatever measures are necessary to resolve the pending lawsuits in a manner that is compatible with those basic principles of administrative law and fundamental fairness."

General Pryor, is that part of your concern? Is that what you are saying?

Mr. PRYOR. Absolutely. That concern is not a solo one. I have a stack of letters from State attorneys general from across the country—Utah, Colorado, North Dakota, South Dakota, Nebraska, Indiana—a host of States—Virginia, and General Moore from Mississippi who has that perspective and have expressed it both to Administrator Whitman and to General Ashcroft.

Senator SESSIONS. Well, thank you, Madam Chairman. I think the best thing we could do for clean air, and it is something I support, is the expansion of nuclear power. It is the only way we are going to meet the kind of goals that many have set for us. Alabama has one plant that never was completed, or was coming on line or would be brought on line, and two others that were 60, 70, 80 percent complete that could be brought on line. That would have a tremendous reduction in pollutants into the atmosphere. I just believe we have got to go back and give thought to it, since France obtains 80 percent of their power from nuclear sources. We have never had an American citizen lose his life because of an accident at a nuclear power plant.

So there are some things we can do, but I think in the course of what we do, we need to follow the basic law. I respect my good advocates there that are testifying.

Senator CLINTON. Thank you, Senator.

We are about to take a recess. Before I do, do any of the Attorneys General have any final comments that they wish to leave us with?

General Sorrell?

Mr. SORRELL. No, other than to repeat my thanks to the two chairs and the two committees for convening and taking up this issue that is so important to Vermonters.

Senator CLINTON. General Pryor?

Mr. PRYOR. No, thank you, Senator.

Senator CLINTON. General Spitzer?

Mr. SPITZER. No, thank you, Senator Clinton.

Senator CLINTON. The hearing will be in recess for a short period until Chairman Jeffords returns at approximately 2 p.m.

Thank you all very much.

[Recess.]

Senator JEFFORDS [presiding]. The hearing will come to order. We are pleased to welcome our third panel, consisting of Eric Schaeffer, director of the Environmental Integrity Project at the Rockefeller Family Fund; Bob Slaughter, president of the National Petrochemical and Refiners Association; Mr. Hilton Kelley of Port Arthur, TX; Mr. Steve Harper, director of Environmental Health, Safety, and Energy Policy for the Intel Corporation; John Walke, clean air director of the Natural Resources Defense Council; and Mr. E. Donald Elliott, co-chair of the Environmental Practice Group at the law firm of Paul, Hastings, Janofsky & Walker. Gentlemen, please come forward.

Now, I am going to want to hear from you as to how we handle the problems that we have and suggestions of what we should do to improve the law. So I am going to start with Mr. Schaeffer, then

for opening statements I will go down through for everybody's opening statement, and then come back to the questions.

So Mr. Schaeffer, if you would start.

STATEMENT OF ERIC SCHAEFFER, DIRECTOR, ENVIRONMENTAL INTEGRITY PROJECT, ROCKEFELLER FAMILY FUND

Mr. SCHAEFFER. Thank you, Mr. Chairman, for the opportunity to testify today. I was the director of the Civil Enforcement Program until March of this year, and now at the Rockefeller Family Fund working on environmental issues. I am pleased to be here.

I think it makes sense, given the hour and the fact that we are bringing up the rear on this panel, to respond to some of the points raised earlier, to see if we can shed some light on some of the issues you discussed.

I would like to start with the question to Mr. Sansonetti, I think from Senator Leahy: Have defendants raised the issue of EPA changing the rules as a reason to put off lawsuits or stall or walk away from settlements? I don't think you need to look any further than the argument in front of the 11th Circuit in the TVA case, which I think everybody recognizes is one of the most important cases, and the first one we are likely to get a decision on.

In that case, defendant lawyers walked right into court—lawyers for TVA—waved a copy of the proposed changes, and said very clearly that the court should consider putting off or postponing hearing the case or making a decision because the government was still making its mind up as to what the law was. I am paraphrasing, but that was pretty close to what was said.

Senator JEFFORDS. I understand what you are saying.

Mr. SCHAEFFER. I can also say from my experience, sure, defendants walked or left the settlement table when they heard the law was changing. That is a rational decision in a way on their part. I guess I would suggest that you put that question to the Agency and to the enforcement officials and staff lawyers who are handling these cases, and I think you will be a clear answer.

Mr. Holmstead also said that enforcement in EPA, the Enforcement Office I assume he meant, has told him and the Air Program that his proposals and final changes would not affect disposition of the enforcement actions. Without saying more, I just strongly encourage you to check that statement out. You might start by asking the Acting Director of the Enforcement Program if that is in fact true, because I believe it is not. I think Enforcement has consistently expressed concern about some of these changes and their impact on the cases.

I think what is going on is, defense lawyers who are working for utilities are playing a classic game. They are taking a law that courts have said is pretty clear and they are trying to turn it into so much wisp and smoke. And then when you press the Administration about the direction it is going in, although their purpose seems to be to add more clarity, you get more wisp and smoke: "We do not know what the impact on emissions is going to be. We are just making proposals. We have not made any decisions yet."

I hope to shed a little bit of light on it, just starting with the basic notion once again of what the law is. These cases did not

spring out of fevered minds of the EPA in the late 1990's. They began in the early 1980's and go through the early 1990's, with the Alabama Power and the WEPCO cases. The courts looked at the law you wrote, which says you cannot physically modify a plant in a way that increases emissions without going in and getting a permit and putting on controls. And the courts have said not once but several times, the law means what it says. The law is very broad. There is an exception for routine repair. That is not found in the statute. That is an exception that EPA created out of concern that very small projects would have to go through permitting. Courts have said, when agencies create an exception to a general duty in the statute, that exception must be read narrowly.

So the first question I hope you will put to the Agency is, do you, in fact, agree with statements the courts have made, that the law is broad and exceptions must be read narrowly? I know Mr. Sansonetti agrees because he argued that in the summary judgment motion in the Southern Indiana Gas and Electric case. He argued it very forcefully and very well, and that brief is worth reading.

If I could turn to what the Administration proposes to do with what I think is a bright line that Congress has drawn for grandfathered plants, and how they plan to change the definition of routine repair—on my right, you will see a reheater being replaced at a typical power plant. This is one of the changes that we have talked about that has been undertaken and it had the impact because they are replacing an old part and replacing it with a more powerful unit of driving emissions up. That is a crane you see on the left, moving the part into place. We have more dramatic examples, too big, actually, to fit on a chart. This is what the Administration is proposing to call routine repair.

What the Administration is talking about, and you got what I would treat as feigned ignorance today from Mr. Holmstead about what these changes mean, when in fact, his recommendations announced in June make very clear. What they have said is, if you pull one of these units out and you replace it with a more powerful unit, even if that drives emissions up, we are going to treat it as routine repair.

They are free to deny that. I hope they will if you ask them, but I do think you should ask them. We have taken a look at all the parts in power plants, big parts that have been pulled out and changed over once or twice in the lifetime of the unit, and you can see that nothing is left of the law if you go forward with these Administration-proposed changes.

My favorite thing in Washington is to hear lawyers who made a lot of money arguing that we shouldn't have as many lawyers, push ideas that essentially eliminate the lawyers by eliminating the law. That is essentially what is going on here in the Administration's proposal.

You heard I think from Senator Voinovich and from Senator Inhofe, that all these utilities want to do, if you would just let them, is to decrease their emissions. New Source Review is getting in the way; they just want to decrease their emissions, and why are we being so mean to them.

I want you to turn first to the chart on the right. These are NOx, nitrogen oxide emissions at the plants tagged in EPA's complaint. In one case, we saw a 21,000-ton increase. As Mr. Holmstead said, and this is where I think the law draws a bright line, don't increase your emissions, and you don't have a problem. He said, and his words were, you can make any changes you want as long as you do not increase emissions. These guys increased their emissions and they did not do it by the 40-tons that you are allowed under the Clean Air Act. They did it by thousands of tons. So there is a real impact.

There is a lot of confusion, I think somewhat pretended, about the impact of going to the dirtiest 24 months you can find in the last 10 years, and then allowing the company to keep that high-pollution level for the next decade and then some. I think Senator Clinton did a good job pointing out an example of a refinery where you can take a look at the before and after; you can say, what are the emissions today; what would they be if you went back and picked the dirtiest 24 months.

Here are three examples. The red charts that you see are the highest 24-month period in the past 10 years. Mr. Holmstead is suggesting, yes, but the emissions are not going to be that high, but they do not quite know what they will be. And then I think we ended up with, "well, some will be higher and some may be lower." I would ask you, just put them through the exercise, call some of these refineries out, find these dirty 24-month periods in the past decade, lay it in front of the Administration, lay it in front of EPA and ask them—is your proposal—actually this is a final rule—is this going to increase emissions or not for this plant? I think the people who live around those facilities are going to want to know.

We have also heard that the law is not letting companies make repairs. We are losing capacity; we are in danger of having the lights go out and the air conditioners turned off on really hot days. That is another game that has been played on every issue that affects environmental control when it comes to the power industry in the United States. I cannot think of a single environmental debate where we have not heard from utility argue, you are going to be colder or hotter or darker if you keep going forward.

What we did is look at just the 43 plants that the government has sued, that are named in complaints. We asked the question, did those complaints so terrify you that you were afraid of making repairs and you started losing capacity? This is what we found. The charts are not totally complete through 2001. We have some missing gaps in 2001 because the data is not yet available. But you can see from looking at these charts, the plants sued, the very ones that should be the most concerned about this supposed reinterpretation, have not lost capacity.

Let me make one other quick point. Refineries, if we do not change New Source Review, we are going to lose refinery capacity. I give you this chart. Again, this is from the Department of Energy. That spike, the red spike on the right shows a sharp increase in refinery capacity after—after we brought the New Source Review lawsuits. Again, we were so successful in scaring the industry with our lawsuits that they had a record increase in refinery capacity.

They have grown at a record rate. This is after we brought the lawsuits.

I think what you are getting in the Administration's proposals, in an Administration that likes to talk ceaselessly about good science, is government by anecdote. You have got the same old war stories recycled over and over again about the parade of horribles, the bad things that the law is doing to them. The statistics just do not support that, and you deserve that kind of data from the Agency. I think you deserved it this morning. I hope you will insist on it. I invite you to verify any of this.

Senator JEFFORDS. I can assure you we will, so you can relax on that.

Mr. SCHAEFFER. That is very encouraging.

On the fair notice issue, I will not belabor this. This is the question of, gosh, you know, we were all complying with the law until EPA came along and changed its interpretation. If you find those 4,000 pages of guidance that keep flying around like the Flying Dutchman that the Agency has apparently put out on New Source Review, let us know. I don't think they exist.

This is a fairly lean requirement. There are a number of individual decisions the Agency has made. We have not cranked out a lot of conflicting guidance. The Justice Department looked at that issue; said we have been consistent; and I would stand with Mr. Ashcroft on that question.

Let me tell you what we saw, and I hope you will look at the same evidence that Enforcement looked at. When we asked plant supervisors, the people who make the decisions, are these big projects, like the first one I put up, are these considered routine in your industry and at your company? Here is what Mr. Hekking of the Tennessee Valley Authority said, and it is a classic. This is Mr. Hekking of TVA, formerly a plant supervisor.

The question was, "Mr. Hekking, did the Tennessee Valley Authority consider this project to be routine maintenance?" "No, sir." "Can you tell us why?" "A number of reasons. First, we just talked about money. I give you an idea of what my annual budget is to run the plant, operate it and maintain it. The money spent on this one project alone exceeded my annual budget. I think that is one reason it was not routine. It was performed during an outage. I told you that a routine scheduled outage for us was 4 weeks. This was a 12-week outage that was not routine. The re-heater we put back in, we replaced an entire component. It wasn't a tube or several tubes or a couple of elbows. It was an entire component. That is not routine."

That is from the industry. We had the fun of having TVA's lawyers, who have this sort of wisp and smoke confusion about the law, keep pulling their own plant people back to the stand to get them to correct those statements. Their plant people would not cooperate. They kept returning to I think the plain English and saying, "We can't call these routine; these are big changes; they cost a lot of money; they take a lot of time. I am not going to sit here and testify they were routine." So they knew.

I would like to return to the bottom line here, which is the impact these changes have on human health and the environment. Senator Lieberman referred to a study that we ran, looking at the

impact that power plant emissions from the eight defendant companies have on human health and the environment.

I will say, tall stacks or no tall stacks, the impact is not just in the Northeast. It is felt very heavily in the Midwest. You can see some very high numbers in States like Pennsylvania and Ohio when we are talking about premature death. These are estimates after the acid rain emission reductions kick in. This is not today's emissions. This is a more conservative set of numbers.

I would invite you to ask the Agency, is this data correct? Or if you have a model, and they are using a model to estimate the benefit of Clear Skies, run the model for these companies; run the model for my State. We have also broken the number out by companies, and we fund the same impacts. I want to emphasize, we had Harvard School of Public Health review this and verify it. This was done using EPA models. I would invite them to respond and explain how their proposal is going to make this situation better when compared to enforcing current law.

I guess I would just close echoing what Mr. Spitzer said most eloquently, which is everybody has the right to change the law. This is America. It is a democracy. This is a big change that the Administration has proposed. Changes of that scale, especially when they affect enforcement of the law as you wrote it, they ought to come before this Congress. They ought not to be made unilaterally by an agency. That is your decision. I hope you will take that issue under your jurisdiction. If you do, I know you will do good things with it.

Thank you for the opportunity to testify.

Senator JEFFORDS. Thank you for an excellent statement. I would urge witnesses to try to stay around 5 minutes so I can get to some questions.

Mr. Slaughter.

STATEMENT OF BOB SLAUGHTER, PRESIDENT, NATIONAL PETROCHEMICAL AND REFINERS ASSOCIATION

Mr. SLAUGHTER. Thank you, Mr. Chairman.

I will summarize very quickly some points that I had in the formal testimony, and then I just want to add a couple of comments on something that was just said.

NPRA is pleased to testify again before you today. This is the third time we have appeared before this committee on the issue of the need for New Source Review reform. Our members own or operate basically all U.S. refining capacity, with minimal exceptions, and a number of petrochemical manufacturing facilities as well.

I am Bob Slaughter. I am NPRA's president. I would like just to make a few basic points. The NSR reform process has been open and public. The previous Administration, as has been pointed out earlier, made similar proposals to reform NSR. Public hearings were held. Comments were taken on them. Congressional hearings discussing the need for reform have been held on at least four occasions. We have appeared at three of them. EPA held an exhaustive public dialog on the issue during its review, pursuant to the President's plan, and the issue has been extensively discussed in the media, both before and since EPA's June 13 announcement of its reform package. We have attached to our formal statement copies

of all our testimoneys, plus our submission to EPA as part of the review, for your information.

Two, we believe that NSR reform will improve the environment. The uncertainty resulting from shifting NSR interpretation has placed our members in retroactive enforcement jeopardy, adding considerable delay and cost to refinery projects. The ultimate effect has been to hamper our industry's efforts to expand domestic refining capacity, increase the supply of cleaner-burning fuels, and enhance energy efficiency.

Three, NSR reform is needed to enable the refining industry to implement significant environmental improvements in our fuels and facilities throughout this decade. Attached to my formal statement is our regulatory blizzard chart which basically shows an intense series of new regulatory initiatives which were required to undertake in refineries in this decade. They include significant reductions, severe reductions in the sulfur content of gasoline and diesel fuel, on-road diesel fuel, also one upcoming regulation for equally severe reductions in off-highway diesel fuel and a number of stationary source controls as well.

This suite of environmental requirements which the industry must comply with in this decade will require at least $20 billion in additional investment capital from our industry. All of them result from the 1990 Clean Air Act Amendments, and they will result in significant environmental improvements through our fuels and our stationary sources—refineries and petrochemical plants.

Four, the domestic refining and petrochemical industries are essential to our economic growth and national security, but they are under a lot of pressure. We have not been able to build a new refinery in the United States since 1976. The only source of additional capacity has been adding capacity at existing sites. Confusion over NSR requirements disincentives the addition of capacity at existing sites. Of equal concern, the Oil Price Information Service recently reported that at least 15 U.S. refineries in many regions of the country, with more than 10 percent of U.S. refinery capacity, may change hands or be closed down by January 2003. So there is significant risk of loss of domestic refining capacity. We have one refinery in the Midwest, in Illinois, scheduled to close next month. There are others, according to the OPIS article and according to word in the industry, that are in serious danger of sale or closure.

The United States demand at the same time for our products is increasing. EIA projects one to 2 percent growth per year in demand for petroleum products at the same time that we are unable to add significant domestic capacity to refine those products. This means that they will have to be imported. EIA projects a tripling of imports of light products into the United States between now and 2020. They will come from Canada, Venezuela, and the Middle East.

U.S. refineries as we know here have to run full-out to meet the bulk of U.S. demand, much as they do today. We operate at 90 to 95 percent of capacity at most times, pretty much 365 days a year, every day of the week, and we have to do that in order to basically make the products that the economy demands. So it is very important that the industry maximize its product output, and the upcom-

ing rulemaking which will give us greater clarity on the meaning of routine maintenance, repair and reform will help us do that.

The opponents of NSR reform imply that it is the source of most basic environmental regulation of U.S. manufacturing facilities, but this is really not the case. We attach to our testimony a number of other Federal and State programs that limit emissions at our facilities. NSR reform will not impact these.

NSR reform has really been a bipartisan effort up to this time. The previous Administration, as we have said, proposed many of these same changes. A bipartisan group of U.S. Senators, as Senator Voinovich pointed out this morning, wrote this Administration urging NSR reform to move forward. The National Governors Association and many State environmental regulators have also urged that NSR be reformed.

So we urge Congress not to falter in its support for this bipartisan effort. We think the changes will help our members meet consumers' growing demand for better environmentally sensitive processes and products, and we really do believe that NSR reform is the most significant step that public policymakers can make to maximize the domestic refining capacity and petrochemical manufacturing capacity in the years to come.

So I would urge you to put the discussion today in that kind of frame of reference. I know it has been said that there—at least Mr. Schaeffer has a personal theory that has some clarity as to what NSR means, but I have sat through the hearing today, too, Senator, and I believe—I know I listened to three current attorneys general. I believe there are two former attorneys general on the panel—you and Senator Sessions. I heard a number of differences as to what this current rule means. You know, if five attorneys general are not really able to agree among themselves, and that was the strong impression I got today, I would say there is serious evidence that this particular program needs to be reformed.

Just one other point I would like to make about the chart and the baseline which alleges that at least certain refinery emissions might go up if you basically looked at any 24 months within the past 10-year period. You know, refineries basically produce all-out almost all the time. So if there has been a significant reduction in emissions of one particular pollutant from a refinery, it is probably because there has been a change in the permitting requirements, because they are probably producing more the last couple of years than they were at any time during the last 10 years, particularly in the Midwest, where there have been significant supply problems and the refineries have really been producing all-out. So I urge you to take a close look at some of these assertions that are based on people's models. I think we really need to look at what the facts are here.

Thank you.

Senator JEFFORDS. Thank you, Mr. Slaughter.

Mr. Kelley.

STATEMENT OF HILTON KELLEY, FOUNDER, COMMUNITY IN-POWER AND DEVELOPMENT ASSOCIATION

Mr. KELLEY. Yes, good evening. My name is Hilton Kelley. I am the founder of a grassroots organization called the Community In-

Power and Development Association. I am also the coordinator of the Southeast Texas Bucket Brigade, where we stand with and for refinery reform.

I am grateful for the opportunity to speak out on behalf of refinery communities across this Nation and tell the Senate the truth about what pollution is doing to us and how much worse it would be under the new EPA proposal to roll-back New Source Review. For example, by allowing refineries to go backward 10 years to pick their baseline, pollution will increase. It makes no sense to go backward. We need to move forward and keep working to reduce pollution by enforcing the NSR fully.

Everybody needs to know that the Clean Air Act as it now stands must be preserved, and the new EPA proposal is really a death sentence for already-sick industrial neighbors. The Clear Skies proposal of the Bush Administration would do nothing for us because it deals only with power plants. It does not cover refineries and chemical plants. Refineries are located in 36 States, 125 cities and up to 67 million people breathe air polluted by oil refineries. This is a national problem and the only solution we see is strict enforcement of the New Source Review, not relaxation.

I grew up in Port Arthur, TX on the west side of town near refineries and chemical plants. I know what it smells like on a daily basis, and I say that it is time that we do something to clean this up because a lot of kids are still living in these neighborhoods where I grew up. I moved away about 18 years ago, and I have recently come back in 2000. I am on a crusade to empower local citizens to fight for their health and to help them understand what they must do to get their air clean. I say that we protect the Clean Air Act, and New Source Review is the way to do it.

The rest of the country needs what Port Arthur makes. Just like other refinery communities, the neighbors live with the fall-out of pollution and health problems. Mr. Slaughter stated that refineries are asked to provide this product. That may be so, but the neighbors never ask for the poison that these refineries put into our air. Texas is home to America's largest oil refineries and chemical plants. While the State produces the energy the Nation needs, it also produces more industrial pollution than any other State according to the latest right-to-know data. Our neighborhoods pay the highest price for the rest of the Nation's cheap gasoline. Sometimes, it can take your breath away. We have been losers in the bargain as we have high unemployment, although the plants get a tax break from our local government because they are located in empowerment zones. Our people do not see the benefits of that.

It seems that these heavy industries concentrate on low income communities and communities of color, where there is the least bit of resistance from the citizens. They operate 24 hours a day, 365 days a year, expanding constantly. Right now, we are challenging another expansion of the Premcor refinery that wants to dump 525 more tons of pollution on us so that they can make low-sulfur gasoline. It seems we never have a chance to get cleaner air. They can do it without dumping more pollution on us. NSR is one tool to make sure of that.

The problem has a human face. In Port Arthur almost every day, 10-year-old Cullen Como and his sister suffer with a severe asth-

matic condition. Their mother suffered also from upper respiratory problems when she was giving birth to them. The plants emit a toxic soup of chemicals. These chemicals are known to cause cancer, affect brain functions and hurt organ development and reproductive systems.

We, like other refinery communities, have teamed up with Denny Larson of the Refinery Reform Campaign to form a local bucket brigade for Port Arthur, TX. The bucket is a simple, but effective air sampler. It uses a special bag and vacuum pump. Air samples taken during toxic releases have shown unhealthy levels of hydrogen sulfide, benzine and other dangerous chemicals. We were forced to do this because there are no real air monitors in our community. We get more expansion, but we get no air monitors in our communities.

Miss Annie Edwards is another victim of pollution. She has to use two different types of air devices to breathe—one for when she goes to bed at night to ensure that she will wake up the next morning, and if she dares to go outside, then she has one that she has to walk with.

I know from going door to door that these problems are widespread. Too many people are dying from cancer. Too many people have thyroid problems. We have two dialysis clinics in this small town of mine, and it is time for the citizens to say enough is enough, and it is time to do something about it.

We want to work with industry. We want them to put the necessary controls on their stacks, put the necessary controls on their valves, so that they will quit emitting so much pollution into our community.

We also have a huge pollution problem with accidents, fires, explosions, upset emissions releasing thousands of pounds of chemicals into our air through flares, relief valves, and dump stacks. It seems that after expansion, the plants have more and more upsets so there weren't enough controls, from what I can see, by our States. For example, Premcor Refinery, Port Arthur, TX, February 19, 2002, about 5,660 pounds of propane and 143 pounds of hydrogen sulfide were released during a 219-hour upset. More examples are on the chart, if you look to my right.

Premcor Refinery, January 2, 2002, upset—about 26 pounds of hydrogen sulfide per hour, 2,479 pounds of sulfur dioxide per hour, 295 pounds of volatile organic compounds per hour, and 6 pounds of nitrogen oxide per hour were released. The upset lasted 168 hours.

A recent health survey done by the University of Texas toxicologist Dr. Marvin Legator compared people living in housing projects in refinery communities like Port Arthur and Beaumont to a non-industrial similar population. Preliminary results show a vast difference between the health symptoms of those two communities' reports. Seventy-five percent of the people from Port Arthur complained of headaches, muscle aches, compared to twenty percent in the controlled area. Eighty percent of people in Port Arthur had ear, nose and throat conditions, compared to twenty percent in the controlled area. Eighty percent of those questioned had heart conditions and respiratory problems in the refinery neighborhood, compared to thirty percent in the non-refinery area.

Dr. Legator has made a strong correlation between the known health effects between the emissions from the refineries and the health symptoms we experience.

Another study conducted by MacArthur Genius Award-winning scientist, Wilma Subra showed that health symptoms and emergency room visits increase when there is a spill or unexpected release from the plants. Whenever we leave Port Arthur, it seems like our health gets a little bit better, but whenever we return from vacation, it seems like the respiratory problems and the skin rashes seem to reappear.

Glenn Alexander, a pediatric nurse practitioner in Port Arthur, has been treating local children for 10 years. His waiting room is nearly always full. He sees an unusually large number of upper respiratory infections, allergies, skin rashes and asthma. "I do see things because I am a health care provider. The air is not always clear here. Sometimes it is hard for the children to breathe." Some of the effects are irreversible and will be a life-long problems for these kids.

Mr. Alfred Dominic is a life-long resident of Port Arthur, TX as well. He was born in 1928. He has seen a large number of his friends die from cancer and various other respiratory problems.

This is a national problem. This is not a problem just concerned with Port Arthur. This is a national problem. I could quote many other leaders in the Refinery Reform Campaign, but I won't go on with that.

Mrs. Mabel Mallard lives in South Philadelphia, PA, and she has a problem with the refineries out there as well. They are dealing with pollution day-in and day-out and she says enough is enough. Please do not tread all over the New Source Review. In other words, stand with us and help support it.

In conclusion, New Source Review should be preserved and fully enforced. It is a grave matter of environmental justice to people who need the help of the U.S. Senate to protect their health and the health of innocent children. Going backward to allow refineries to pick a baseline and other such tricks are unthinkable to people living on the fenceline suffering from current levels of pollution. The Clear Skies plan won't help us. We need the Federal protection and the right to know of the New Source Review.

Thank you, and if there are any questions, I will take them at this time.

Senator JEFFORDS. Thank you, Mr. Kelley, for an excellent statement.

Mr. Harper.

STATEMENT OF STEPHEN HARPER, DIRECTOR, ENVIRONMENTAL HEALTH, SAFETY AND ENERGY POLICY, INTEL CORPORATION, WASHINGTON, DC

Mr. HARPER. Yes, thank you, Senator.

My name is Steve Harper. I am the environmental health, safety and energy policy director for Intel. I am here to speak about a portion of what EPA is seeking to promulgate and to propose what was referred to a little bit earlier this morning, but only in passing, it was very separate from in our minds most of the rest of the

issues before the committee, and that is the PAL portion of the EPA's pending rule.

Intel for several years now has been part of a coalition that has included Lilly, Daimler-Chrysler, DuPont and Merck. Companies in our coalition have all experimented under EPA's various reinvention programs with PALs. We believe that EPA's promulgation of a PAL rule is the next logical step in piloting, perfecting and proliferating this new approach.

Much effort has been spent in the last 10 years or so on the reinvention of environmental protection under both Democratic and Republican Administrations. We feel strongly that PALs are one of the most successful, if not the most successful, story to come out of, innovations to come out of that process and we think it is time to mainstream this new approach through regulatory action.

Why does Intel care about PALs? Semiconductor manufacturing is characterized by quick product cycles and rapid innovation in products and processes. The sort of tag-line in our company is there are only two kinds of semiconductor companies—the quick and the dead. We obviously would therefore prefer to be quick. But the kinds of needs for rapid and speedy innovation in our industry is not that different from that experienced and needed by other companies in our coalition of other industries. Intel operates 10 fabs, as we call our factories here in the United States. Each of these costs on the order of $2–$3 billion per fab. They are characterized by constant innovation and changes in product technologies, the chemicals that we use, and the processes.

Given the capital cost of these factories, getting to and maintaining full production is absolutely critical to their profitability. Traditional New Source Review is therefore a non-starter for Intel and for industries like ours because many of the frequent changes we make would require under traditional NSR permit modifications which entail uncertainty and substantial delay.

What is a PAL? PALs feature an emissions cap that provides a bright line for NSR applicability. It determines whether changes made in our operations trigger or don't trigger NSR. Changes that don't raise emissions beyond the cap are not subject to NSR. In addition, within the cap or under the cap, there are typically a series of pre-approved changes that you can make at your facility without further permit modifications.

I want to make a distinction that is in the terminology I use in my written testimony, Senator, I use both the term PAL and PAL-type permits. I want to be clear on the distinction. A PAL is a major source of NSR permit. A PAL-type permit is a minor source State permit that features the cap and the preapproved changes features of PALs, but lacks the NSR applicability feature, but in every other respect they are identical.

What are the benefits of PALs? First of all, there are environmental benefits. PAL caps are set at levels typically that reflect the air quality needs of an area. PALs that are based on actual emissions involve sources giving up significant emissions headroom that would otherwise be allowed under their existing permits. Caps also provide emissions certainty to the public and to the permitting authority. Caps provide powerful pollution prevention incentives because if you have got a tight cap and you want to grow your pro-

duction, the only way you can do so is by substantially reducing your emissions per unit of production which is what we have done, as I will show. PALs, simply put, free up facility engineers at facilities like Intel's to pursue pollution prevention, rather than spend a lot of time on NSR paperwork.

The second area of benefit over traditional NSRs is public participation. PALs provide the public a much more holistic view of the operations of a facility and its impact on the environment. In traditional permitting, the public sees a myriad of piecemeal changes that provide a piecemeal view of what the impact of a facility is. However, with PALs, the public gets to participate in the process by which the cap and the preapproved changes are determined, providing a much better understanding of the impact of the facility and a much more meaningful opportunity for the public to participate in determining the outcome of the permitting decision.

Indeed, although I am going to focus mostly on our Oregon PAL, in one of our facilities that has a PAL in Arizona, our Community Advisory Board is actually so happy with our experience that they want the State of Arizona and Maricopa County to make PALs mandatory for all sources because of the environmental and public participation benefits.

The third benefit is to our facility—operational flexibility. You have the bright line in terms of NSR applicability. You also have the preapproved changes I made reference to earlier.

So what has our experience been? We have entered into two partnerships with EPA permitting authorities and the public to pilot this approach, both begun under the Clinton Administration. The Pollution Prevention and Permitting Program at our Aloha campus in Oregon and a Project XL effort at our Ocotillo campus in Arizona. In the interest of time, I am only going to focus on the Aloha project in my remarks. My written testimony provides data and experience about both.

The exhibit in my testimony at the end of the testimony provides we think a very graphic illustration of the environmental benefits. Motivated by a need to grow, but remained under our cap at Aloha, we reduced our emissions of volatile organic compounds per unit of production by more than 90 percent during the 1990's. Although our production went up substantially by almost five times, we still stayed under our cap. We were even able to add an additional factory within the existing cap without having to go through and get an additional modification.

Moreover, we voluntarily reduced our cap along the way in order to help Portland, OR with its efforts, which ultimately were successful, to get redesignated as an attainment area. The cap that we worked under and lived under produced a very powerful pollution prevention incentive that made that possible.

In sum, PALs, in our view, are ready for prime time. As I have shown, our experience with PALs has been dramatically successful. Other companies in our coalition have also piloted the approach successfully, as have an increasing number of companies in other industries and other companies. I want to emphasize that contrary to the thoughts of some, PALs are not a niche-fix for companies like Intel. I think if you look at the experience of PALs, and it is a growing experience in a number of industries, they are not a one-

size-fits-all solution to everybody's problems with New Source Review, but we think they are a win-win for both facilities and the environment.

PALs, in our view, are an example of the right way for EPA to innovate, to try something out in a limited number of places under controlled circumstances. You evaluate your experience, and where successful, you mainstream that experience, you mainstream the success through the rulemaking process.

I want to emphasize mainstreaming through a rule is very important in our view. PALs are legal under current rules, and under the current Clean Air Act, as my testimony goes into. But many sources and States need clear guidance from EPA regarding the value of PALs and they need clear guidance on the rules of the road in applying this relatively new tool. So we believe that EPA promulgating a rule will provide the certainty and we think will make it a lot easier and a lot more likely that other sources and States will use this new approach and will realize the environmental public participation and flexibility benefits that I have described earlier. Thank you.

Senator JEFFORDS. Thank you.

Mr. Walke.

STATEMENT OF JOHN D. WALKE, CLEAN AIR DIRECTOR, NATURAL RESOURCES DEFENSE COUNCIL

Mr. WALKE. Thank you, Chairman Jeffords, for the privilege of testifying before you today.

My name is John D. Walke, and I am the director of Clean Air Programs with the Natural Resources Defense Council. We are a 500,000-member organization dedicated to protecting public health and the natural environment. Prior to joining NRDC 2 years ago, I was an air pollution attorney with the EPA's Office of General Counsel, where I worked for 3 years.

Allow me to go straight to the heart of the purposes and consequences of the Administration's recent New Source Review announcements. These rule relaxations will allow significant increases in air pollution from over 17,000 of the Nation's largest polluters, allowing them to escape pollution controls.

I want to emphasize this most basic point about the New Source Review program that is often lost in the rhetoric and misrepresentations that some use to mischaracterize the program and its protections. The NSR program requires pollution controls at new or existing facilities only when there are significant increases in air pollution. Industry must clean up its pollution under the NSR program only when the air gets dirtier from anywhere from tens of thousands of pounds per year to tens of thousands of tons per year. The corollary to this point is even more important. Regulatory exemptions, so-called industry flexibilities and other changes designed to avoid NSR pollution controls will allow significant increases in air pollution to escape clean up. Increases in air pollution, of course, are what we all are about, whether the air gets dirtier. It is that objective that drives the installation of pollution controls under the New Source Review program.

It is highly revealing, however, how rarely if ever the NSR program's opponents in industry, and now within this Administration,

mention the NSR program's purpose to control air pollution increases. Instead, I submit that the talking points of NSR opponents are carefully scripted to mention several buzz words—routine maintenance, energy efficiency projects, system reliability activities. The reason for this selective focus is very simple. Every activity that industry wants to pursue without being required to install pollution controls under New Source Review will involve significant pollution increases. I urge you and the committee to bear in mind than whenever appeals in the name of these activities are made, they are implicitly but necessarily accompanied by the argument that industry should be allowed to increase air pollution significantly without cleaning up that pollution.

As we all know, NSR pollution controls are required for modifications that exist in pollution sources. This was added in the 1977 amendments. Modification at an existing plant requiring NSR pollution controls is a two-part test covering first, any physical change or operational change at a facility. Every court to address this question, as Mr. Schaeffer has said, has found that this requirement is very broad, and they have affirmed the inclusiveness of the concept of "any physical change" meaning exactly that. The second part of the test is that a facility must increase air pollution, as I noted earlier. So you must have a physical change or an operational change that must increase pollution.

I would like to speak just briefly to something that Assistant Administrator Holmstead said earlier, because it is something I have heard him say before, and it is something that I find to be continually frustrating and even misleading. Mr. Holmstead made the claim that NSR really does not do anything to reduce emissions from existing sources. Because NSR applies only to pollution increases, pollution controls are required in order to minimize those pollution increases. For example, if a modification at an existing facility increases pollution by 10,000 tons, NSR would require pollution controls that would reduce emissions by, say, 95 percent using advanced technology.

Now, I would call keeping 9,500 tons out of the air to be a pollution reduction. I would also call the positive steps that Mr. Holmstead mentioned where sources minimize pollution to keep them from even having significant pollution increases to be emissions reductions. It is very telling that Mr. Holmstead declines to refer to these as emissions reductions. I would submit that it is because the Administration has in essence abandoned the modification provisions of the statute. I would submit further that the regulations and the changes that were recently announced reflect that.

The five final rule changes, as well as the three proposed rule changes that they announced would systematically undermine and contradict the Clean Air Act's mandate that modifications that exist in pollution sources require pollution increases to be well-controlled. EPA announced new loopholes and exemptions from clean up obligations that are nowhere to be found in the statute; defined the plain breadth of the first part of the modification definition. EPA also announced new accounting gimmicks to ensure that increases from today's pollution levels will not be considered increases under the second part of the definition. My written testimony goes into the specific examples and our views on them.

Let me be clear. What EPA has done with these announcements is repudiate an act of Congress. We now know from internal EPA documents that I refer to in my testimony that agency attorneys had advised EPA political appointees that many of the changes that were recently announced run afoul of the Clean Air Act. The recent announcements make clear what Administration officials did in response to that legal advice.

We also know that the rule relaxations will allow significant pollution increases to escape control, thereby degrading air quality and harming public health. I would like to read to you just a single sentence from a letter issued by the National Association of State Air Regulators in reaction to the specific reforms that the Administration is pursuing. The letter reads, "The controversial reforms being pursued by EPA will not only result in unchecked emissions increases that will degrade our air quality and endanger public health, they will also undermine the chances of any responsible changes to the NSR program ever taking effect." With your permission, I would like to enter those comments into the record.

Senator JEFFORDS. Without objection, they will be—and since there is nobody else to object, they are in.

Mr. WALKE. OK.

Let me note in passing, since it has come up several times, just frankly how disingenuous it is for Administration officials and others to point to previous general calls for NSR reforms from Members of Congress and other quarters and support of the very specific harmful reforms that they have announced. My organization has supported NSR reforms, as have the State regulators that I just referred to. But what we were seeking were improvements to the NSR program that would protect air quality while providing industry with responsible forms of flexibility. This Administration has capitulated virtually entirely to the industry demands for flexibility and abandoned public health protections as an objective for the program. It is not just my organization, it is this bipartisan group of State regulators that is saying so.

I will end my comments there, and I would be happy to take any questions afterwards.

Senator JEFFORDS. Mr. Elliott.

STATEMENT OF E. DONALD ELLIOTT, CO-CHAIR, ENVIRONMENTAL PRACTICE GROUP, PAUL, HASTINGS, JANOFSKY & WALKER, LLP

Mr. ELLIOTT. Thank you very much, Mr. Chairman.

I would ask that my revised statement be made part of the record.

I would like to focus primarily on what I consider a very disturbing fallacy that has effectively been part of the hearing, and that is the notion that we should equate NSR with reducing pollution. Of course, that is not really the case. As Mr. Kelley said, it is really just one tool under the Act. I guess my main point is I think NSR is really the wrong fight. It is not a very effective program. It has not been effective, and I think we know much better ways to deal with the problem.

As a former General Counsel of EPA, confirmed by this committee over a decade ago, I do believe that EPA's many changing

interpretations of NSR over the years have really created a legal mess of baffling complexity. The ultimate solution in my view is to replace the antiquated, inefficient NSR program for existing plants with a modern trading system, which really has tripartisan support, as Jeff Holmstead, Senator Smith and Senator Jeffords are all supporting something like that. But in the meantime, I do applaud the Administration's recent attempts to do what it can to resolve the uncertainties by creating safe harbors through the rulemaking process.

I have to admit that I was General Counsel of EPA in 1990 when the famous WEPCO case came down, which has done a lot to create a lot of the current uncertainties. Although that case has never been overruled, it creates a lot of uncertainty because rather than having a bright line test, it identifies multiple factors that have to be weighed. So I think a lot of the uncertainty is how do you deal with the various WEPCO factors.

Urged on by majorities in both Houses of Congress in 1990 to fix the WEPCO problem, both Houses of Congress passed the WEPCO fix, they were just different. So in conference, the Congress deferred to the Administration, passed the hot potato to us, and we did in fact come out in the first Bush Administration with an NSR interpretative rule in 1992 which I thought had fixed the WEPCO problem, at least as far as the electric utility industry was concerned.

The key provisions of that rule were that it interpreted the language of the statute to require a causal relationship between the physical operational change and the increase in emissions, and that seemed to solve the problem. However, as a prelude to the current EPA enforcement initiative in 1998, without any notice and comment, the Clinton Administration in the Federal Register renounced our previous 1992 interpretation of NSR. It really is the conflict between the 1992 Bush Administration interpretation and the 1998 Clinton interpretation, both purporting to be interpretative rules that have created a lot of this confusion.

I think the current Bush Administration did not really go far enough in trying to clarify the problem. I admire their courage in even touching the issue at all, but I think they should have done two things, and I hope they will as the process goes forward. First, in my opinion, the safe harbor provisions of the NSR rule should have been made immediately effective as an interim final rule under the good cause provisions of the Administrative Procedure Act. EPA has done that in numerous other situations where there is uncertainty in the law, and after 130,000 public comments have already been received, I do not think we should be waiting. The EPA-NSR report documents that there are a number of adverse effects taking place today as a result of the uncertainty.

Second, I believe the Administration should immediately conform its litigating position in the pending NSR cases to the policy positions that it is now taking in these proposed rules. I disagree with my good friend, Assistant Attorney General Tom Sansonetti, who I served with in the previous Bush Administration, that it is going to be viable for the U.S. Government to pursue multi-billion dollar cases based on the premise that the same words in the law meant one thing in 1980, something different in 1992, something different

in 1996, something different still in 1998, and that they are going to mean something yet different in the future when these proposed rules are finalized.

I also disagree strongly with those who imply that the pending enforcement cases brought in the previous Administration should somehow disable the new Administration from implementing its views of good policy. Just as the Clinton Administration in 1998 could change from the 1992 Bush Administration interpretation, I think the second Bush Administration is free to impose its own interpretation.

Of course, the Congress can make the Administration pay a price politically for its actions, and I guess in a sense that is what this hearing is about. But in my opinion, NSR is the wrong issue. It is the wrong issue to make the touchstone for good environmental policy. It has failed to work for 25 years. I have lived in Connecticut for 30 years and I am very well aware of the problems on the East Coast. But I think it is important to emphasize that during that 25-year period, we have had the NSR program on the books. The only place that I know of that when something does not work it becomes an argument for doing more of it is in government. We have had this program for 25 years. It has not worked.

Meanwhile, over the last 10 years, the acid rain program has been wildly successful. Seventy-five people at EPA, less than one-half of 1 percent, have gotten 50 percent of the total pollution reductions over the last 10 years through the acid rain trading program. Imagine a company like Intel that figured out that one-half of 1 percent of its people were producing 50 percent of the profits. Wouldn't they want to figure out what those few people were doing and do more of it? I think that is the basic problem that we are really facing here.

The NSR program is an antiquated regulatory technology. The notion that the way to regulate the environment is with case-by-case litigation, suing plant-by-plant, having discovery, big litigation and oppose best available controls—that is a 1960's technology. We know much better how to do it, and I think that is what we should do.

Much of the blame for the current NSR mess I think lies squarely at the doorstep of Congress. Congress in its wisdom enacted the requirement for modifications of existing plants in 1977, but it has really failed to define the key operative concept of a modification in the statute. To date, it has proved impossible for the rest of the legal system to come up with any clear dividing line that will stand the test of time. I certainly tried and failed when I was in the government.

EPA has repeatedly tried to resolve that controversy through a variety of changing rules and interpretations. At one point, EPA even came out in the Federal Register with a statement that routine repair and replacement is what is "routine in the relevant industrial category." EPA staff also developed the fascinating theory of potential emissions, so that a plant was considered to have increased its emissions when its actual emissions went down. In fact, I disagree with John's statement. Many of the enforcement cases, or at least some of the pending enforcement cases, are being brought against companies whose emission actually went down. So

emissions increases ought to be part of the definition, but unfortunately has not been historically.

There have already been so many varied and shifting interpretations by EPA that I seriously doubt that the courts are ultimately going to give much deference to whatever construction EPA now tries to place on the statutory terms. That unpleasant fact really leaves us with only two real options going forward.

First, we can slug it out with many more years of very unproductive litigation, probably going to the Supreme Court at least three times over the next 10 years before we finally figure out what these delphic words about modification actually mean in the Clean Air Act. I think that is really the course that my friend Eric Schaeffer urges, that when he talks about the concrete facts of individual cases and a common sense interpretation and the testimony of utility executives, what he is really calling for is that we embark on a 10-year process of litigation. If we do that, eventually the courts, which are the courts of last resort, will essentially write a law for us. They will essentially define over time and a period of litigation what these terms of the statute really mean.

I think that would be a mistake in course. I would much prefer to see Congress take control of the situation and put a merciful end to the NSR controversy by legislating a modern, more efficient replacement for the program with regard to existing plants. I think the way to do that is one that has tripartisan support and I hope that is what you will do.

Thanks very much.

Senator JEFFORDS. Thank you very much, Mr. Elliott. I assure you that we are concerned about the present situation and will be doing hopefully a successful legislative answer.

Mr. Schaeffer, are there any ways that the Administration could approach the NSR changes that might actually benefit public health?

Mr. SCHAEFFER. Changes they could make that would benefit public health?

Senator JEFFORDS. Right.

Mr. SCHAEFFER. Sure. The last Administration was thinking about taking the plant-wide limit, which I think is a good one, which is reflected in some of our settlements. I would refer you to the Marathon-Ashland settlement for an example, and making that a good type proposal that would have the effect of bringing emissions down over time. What the current Administration's proposal does, and this is an important difference, is allow you to reach back, find an old baseline of high emissions, and then keep that high level of emissions for 10 years going forward. The letter that Mr. Perciasepe wrote which I think is attached to Mr. Slaughter's testimony, makes clear when he was talking about plant-wide limits, he was talking about an idea that would bring emissions down over time. That is what the Clean Air Act is supposed to do, is to create that downward slope. I think that is what you are trying to do with the legislation you are considering.

So if they would take the PAL proposal, tighten the bolts on it, and have the emission levels from companies that use plant-wide limits step down over a period of time, instead of stay constant, as though it were some kind of entitlement to pollute, then I think it

would be a great improvement, and it would bring clarity to companies.

Senator JEFFORDS. Mr. Kelley, you had very dramatic testimony. Could you describe the plastic bag you got in the bucket brigades?

Mr. KELLEY. Yes, I can. This bag is what we use to actually go out and pick up the air samples. Here I have with me also, as being a part of the bucket brigade, you can see why we call it the bucket brigade. What it is, is literally a 5-gallon bucket and there is a top that is usually accompanied with the bucket that has an intake valve and an exert valve. What we do is take a simple computer vacuum cleaner, and it is a tube that is hooked to the top, and we create a vacuum inside the bucket that will allow the air to go inside the bag because it is attached to the top on the inside. Once that vacuum is created in the bucket, the air automatically flows into the bag.

On a lot of occasions when I go out, what happens is I will smell some type of sulfur or some type of strong chemical order. I may get a call from a neighbor who is a part of the bucket brigade as well, and other citizens that I have alerted about the activity that is going on in our community. They will call me up and say, well Hilton, there is a strong odor of some sort in our community. So I will go to that particular neighborhood. I will take an air sample. The samples are then immediately rushed to a lab in a location outside of Texas—I will say it that way—and the air is then analyzed and then sent back to me or Denny Larson and then we give the results to a lot of the citizens to let them know exactly what we found.

On many occasions, we have found that the refineries such as Premcor, Huntsman, Motiva are well above the EPA standards when it comes to what they can emit, how much they can emit into the air. We have found sometimes they are somewhere in the ballpark of 8 parts per billion over or 12 parts per billion over the amount of chemicals that they are allowed to dump into our air. This is something that is common in Port Arthur, TX. This is why so many of the citizens there have respiratory problems, and as I said earlier, we have two dialysis clinics in Port Arthur and the population is somewhere in the ballpark of 57,385.

I would like to state, No. 1, we are not really against refineries, but what we are against is the amount of pollution that is being dumped on this small community unfairly because we bear the brunt of all the pollution and all the toxicities for the rest of the Nation to have cleaner-burning gasoline. We say enough is enough. It seems like we are being sacrificed for the rest of the Nation to have cleaner air. I say, No. 1, it is time that we stand together and come up with other solutions so that one community does not have to bear the brunt of all this pollution.

We understand that we need gasoline. We understand that we need the products of crude oil and various products that come off of it. But what we don't need is the pollution that they dump into our communities and on our kids and everything else in our community. What we are saying is clean up your act. What we are saying is use the necessary controls on your smokestacks; use the controls on your flares. The flares were designed to burn gases as they come off, but I have pictures that will show otherwise. Sometimes

you can see flares 25–30 feet up in the air, and they are just burning wild, simply because too much product was coming to the flare too soon, and they had to burn off thousands of tons of gasoline and other products because it would go all over the ground at the refineries. And then the flare is just emitting all of this smoke, black smoke, I mean day-in and day-out sometimes for like 10–12 hours at a time, and tons and tons of sulfur dioxide is dumped.

Sometimes you can just go outside and you could just rub your hand across your car and then you have all this soot and different chemicals on your fingers. So you can imagine what is going on into our lungs.

Senator JEFFORDS. That is right. Thank you very much.

Mr. Slaughter, your testimony is that NSR reform can make the difference between life and death for many facilities. It is clear that Mr. Kelley and other members in the affected communities feel that it will make the difference between life and death for many people. Have you and your members tried to meet with the community groups in the last year to see if there are NSR reforms that everyone could support?

Mr. SLAUGHTER. Well, one, the refinery industry, the owners of the individual facilities quite pervasively have community groups around individual facilities that they meet with and have a continuing relationship with. I think one of the problems here is that a number of these matters that are being discussed today by Mr. Kelley are not involved in the NSR issue. They are involved in these other regulatory controls that actually deal with emissions at facilities. The toxic emissions, for instance, would be subject to other controls. The facilities are very heavily controlled. I can tell you that the facilities that are in Texas are subject to some very stringent new requirements that are part of the new State implementation plan, and basically heavy industry facilities across America are very closely monitored.

We have also shown the number of new proposals to change fuels and also do additional things at our plants that are required of us over the next decade. All of those will basically require discussion of what the emissions characteristics of the facilities are, and in most of those cases there will be input from the local community.

Senator JEFFORDS. Mr. Harper, you said that PALs should be set to reflect the air quality improvement needs of an airshed. How would that work if a PAL is locked in for 10 years as proposed by the Administration?

Mr. HARPER. Mr. Chairman, what I understand is in the Administration proposal, it is not actually all that different in most respects from what was in the previous Administration's proposals. In fact, in one respect it is more cautious, and that is the previous Administration was willing up until the very last moment to promulgate an allowables PAL provision, which the current Administration has decided to put out for further comment.

But part of what we understand to be the way the current Administration's proposal would work is not that much different than the way it has worked in our experience. The 10-year, you know, highest 2 years in the last 10 years is the starting point. It is a default or basic guideline for setting the cap baseline. In our experience, because PALs are voluntary, that is only the starting point

for the negotiation. What States and permit authorities at the local level do is they look at actual emissions and from the start you are giving up the difference between your actuals and your allowables. In our case, it has often been a very substantial number. So that potential to amend is taken off the table from the get-go.

Then you look at your baseline, whatever the baseline is in the State program—the baseline that EPA is now proposing, the highest 2 years in a 10-year period. We think that that is reasonable. In our industry, cycles are pretty quick. In other industries, cycles are much longer. So 10 years provides for all different kinds of situations.

What you then do, at least in our experience and what we think will happen under the current regulation or current proposals as we understand it will operate, is the area will take that baseline. They will look at their air quality monitoring. They will look at their SEP and what is required. They will set a baseline. They will set a cap. As Eric mentioned, that is good for 10 years, but that is a little bit of a misnomer. As we understand the process will work, and we have no problem with this, over the lifetime of the PAL permit, the 10-year period, adjustments can be made downward and we have no problem with adjustments being made downward on the cap if two conditions apply. No. 1, the air quality need of the region is such that it requires emission reductions. As I stated in my testimony, in Portland we gave up a substantial percentage of our cap voluntarily. No. 2, PAL sources should not be treated any differently than any other sources. So if a permitting authority needs to reduce its emissions by 10 percent area-wide or whatever the number is, and they treat PAL sources the same as non-PAL sources and ask everybody to pony up emissions reductions, we do not have a problem. We understand the Administration's proposal would allow the States to make adjustments.

We also do not have a problem as Intel with downward adjustments being made in the cap during that 10-year period if new requirements come into play. So if there are new air quality requirements that will apply to a facility, we have no problem with those getting incorporated into the cap. We just don't want to have a willy-nilly reduction or a reduction that is targeted specifically at PAL sources and does not treat PAL sources equivalent with others.

Senator JEFFORDS. Thank you.

Mr. Walke, I understand that the NRDC has been participating in good faith and with the previous Administration on NSR reforms that might actually benefit the environment and industry. What happened to that process?

Mr. WALKE. Well frankly, Chairman Jeffords, we had an election in the year 2000, and the industry decided that they could get a better deal with the new Administration, and those discussions came to a halt. My organization had been in constructive discussions with even some more progressive members of industry to design PALs, as Steve has mentioned, that would have declined over time, bringing needed air quality benefits to areas. But those discussions fell by the wayside, and instead this Administration has announced the intent to adopt a PAL that would grant perpetual immunity from New Source Review. We refer to this approach as

the grandfather-on-steroids, because it allows these grandfathered facilities to pollute at the levels that they have been for time immemorial without cleaning up. That is a far cry from the constructive dialogs that we had.

By the same token, in those stakeholder discussions, there was very strong agreement among State air regulators and NRDC for the elimination of various loopholes that exist under the New Source Review program. EPA under the Clinton Administration shared those desires in part, and we were on a constructive road to eliminate some of those loopholes in exchange for some flexibilities for industry. That consensus has also fallen by the wayside.

Finally, the provisions of the Clinton proposals that have been mentioned so frequently here in ostensible support of the argument that the Bush Administration is doing something no different from the Clinton Administration is really quite striking and disingenuous. The Clinton Administration did not adopt the changes that the Bush Administration is going to. In part they did not because there was considerable opposition from State air regulators, which is reflected in the document that I have submitted to the record in relation to the Bush Administration's changes, and considerable opposition from environmental and public health organizations.

The truth is that this Administration has adopted a package that abandoned that stakeholder discussion process, the Federal Advisory Committee process, abandoned progress that was being made to reach consensus, and has adopted a set of so-called reforms that are unilaterally favorable to industry and that weaken the air quality protections of the New Source Review program. That is what happened.

Senator JEFFORDS. Mr. Elliott, I will give you a chance to make the last comment. Do you have something you would like to add to your testimony, or from what you have heard from the others in the last few minutes?

Mr. ELLIOTT. Gee, Mr. Chairman, I was all prepared for all the difficult questions you might ask me, but that one. I would say that we can replace NSR with a trading system for the electric utility industry for existing plants. The question then becomes what are you going to do for the other plants. I think there we either should make a judgment that their contribution is sufficiently insubstantial that we really don't need to regulate them in order to achieve our air quality goals, which is basically the decision that as made in the NOx SIP Call, as you are aware.

Or alternatively, I think if we are going to keep NSR for plants outside the utility industry, we need both clear triggers and clear safe harbors. If there is anything that is unbalanced about the Bush Administration proposals it is that it is very clear on some of the safe harbors, it is still not equally clear about the triggers. I think that leaving aside the past history of the last 40 years, the reason that the NSR program does not work is that it is too confusing. It is too uncertain as to when it really is triggered for a plant. I have represented some plants outside of the utility industry in Connecticut, and talked to the plant people. We have settled those cases. People made changes to the plant and they just had no idea if this triggered NSR.

So we have really got a trap for the unwary here. If you are going to keep NSR as part of the overall toolbox for existing plants, you need a very clear trigger. And you have got a very clear trigger in your bill. I forget the last section number—is it section 111 or section 711 or 743? I don't remember—it is the very last one. But it basically says, hey, after 40 years, you are subject in the electric utility industry to BACT—best available control technology.

I think the flaw in the bill, if I may be so bold, is that it also preserves the NSR program as it is currently written. I think if we could get clear triggers to people as to at what point an existing point is required to meet the same standards as a new plant, this is something I think people could live with. The electric utility industry as I understand it, and I am not a spokesman for the electric utility industry, but as I understand it they proposed a number of different off-ramps or ways to deal with this. A lot of the States have legislated ways to deal with it.

I think it is a good thing to have clear safe harbors, but I also think we need clear triggers, and the only way the NSR program is going to work if there is a very simple bright line. Really, I do regard Eric Schaeffer as a friend and somebody whose public service I very much respect, but I think the thing that is wrong in Eric's approach, and it is very typical of enforcement attorneys, is it is a retrospective approach. You know, you go in and make a case after the fact. In order for these programs to work and actually clean up the air, you have to send very clear signals to people in advance. This is what was wrong with the Superfund program until it was fixed by the Clinton Administration. It was a very retrospective program. You balanced nine factors. You dealt with each individual Superfund site as if you had never seen one before.

We got nowhere. It was a tremendous morass. And then much to their credit, the Clinton Administration administratively fixed that program by having much, much clearer standards, much clearer triggers. Once you have clear triggers for the regulated community, I think by and large people will comply with the law and you will get a lot of voluntary action to comply with the law. The difficulty that we have got with the NSR program, the reason that it does not work, is that when you say that we are going to—you trigger NSR based on a balance of multiple factors. Imagine if you had a tax deduction and instead of having a very clear safe harbor for what it takes to take a tax deduction, suppose the tax code says, well, we decide whether or not you get this tax deduction by striking a balance of four or five different factors and weighing and balancing them in the individual case. Judges are inclined to do that often because it makes it easy for them. They do not have to decide something comprehensively. But I think the problem with NSR and the reason that it does not work is as of now, we have multiple factors. If it going to work and people are going to be able to comply with it, it is going to need both clear triggers and clear safe harbors.

Senator JEFFORDS. Well thank you very much for your participation and the participation of all of you. It has been a long day, longer for me, I think, but maybe sitting and listening all that time is even harder.

We take our duty and obligation very seriously, and so I am going to reserve the right to pepper you with questions by mail, as the other members under our rules have to do, but I would not sit by the mailbox, but you might expect some.

Thank you all. It has been extremely helpful and I assure you that this committee is going to all it can to try to come up with a rational program and make sure that the Administration has all the help it needs to come up with the right answers.

Thank you very much.

[Whereupon at 3:18 p.m., the committees were adjourned, to reconvene at the call of their respective chairs.]

[Additional statements submitted for the record follow:]

STATEMENT OF SENATOR BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Chairman Leahy and Chairman Jeffords, I apologize for being unable to attend this hearing today. I had to chair a hearing in the Senate Finance Committee and attend another hearing in the Senate Agriculture Committee. I just couldn't be in three places at once. Thank you for allowing me to submit this statement for the record.

The debate over New Source Review (NSR) has become increasingly intense, confusing and complex. I applaud you both, Chairman Leahy and Chairman Jeffords, for holding this hearing to help us clarify what is truly at issue in this debate, and to better understand EPA's proposed NSR reforms and how those reforms could impact public health and the environment.

I think we all can agree with the ultimate goals of the NSR program, which put simply, are to encourage the continuous evolution of pollution control technology, and to make sure that as older power plants reach the end of their useful life, they are gradually replaced by plants with the newest, and most up to date pollution control technology. This has obvious benefits for the environment and public health, as harmful emissions are theoretically reduced over time. It also attempts to level the playing field for new plants, while giving older plants some flexibility in complying with stricter pollution control requirements that involve significant capital investments.

However, it does seem pretty clear that many folks believe the Administration of the NSR program could be improved, that currently, the program is complex and difficult for State agencies to administer. Industry also claims the current program blocks them from making necessary environmental or energy efficiency improvements at their plants.

Therefore, maybe it is time for Congress to take a look at the effectiveness of the current NSR program, and consider whether it should direct EPA to make any changes. But, let me very clear, if any changes to the NSR program are necessary, they should relate to reducing the administrative burden on States and industry, in order to make the program operate more efficiently and effectively. In no way should administrative changes to NSR lessen the impact of the NSR program on reducing harmful air emissions over time. In no way should NSR "reforms" relieve industry of the basic obligation to install the most up-to-date pollution controls if they modify their operations and increase their emissions.

I know that the devil is in the details. But, I am concerned that the Administration's proposed NSR reforms go too far and will negate Congress' intent in crafting New Source Review. Therefore, I am pleased we will have this hearing record to better understand what the Administration believes the impacts of its proposed NSR reforms will be on public health and the environment and on current NSR enforcement actions, and how States, industry and public interest groups view the impacts of those reforms.

Thank-you again, Chairman Leahy and Chairman Jeffords, for holding this hearing and allowing me to submit this statement for the record.

STATEMENT OF HON. RON WYDEN, U.S. SENATOR FROM THE STATE OF OREGON

Businesses regulated by the New Source Review (NSR) program have legitimate interests. They want certainty, streamlining, and fairness in the permitting process.

But the only certainty I see in the Administration's New Source Review proposal is increased air pollution.

EPA's proposal breaks the clean air commitment made by industry, Congress and the first Bush Administration in the 1990 Clean Air Act Reauthorization. It also brazenly undercuts key enforcement actions that EPA has brought against several utilities. They are proposing a definition of a routine maintenance, repair, and replacement that would allow, for example, a $1-billion refinery to upgrade its plant by as much as $150 million per year without triggering new emission controls. EPA's proposal is another step back in the Administration's ongoing retreat from our country's landmark environmental laws.

EPA has missed an opportunity to provide a win-win situation for industry and the environment. NSR done right could both increase energy efficiency and reduce pollution. It could provide certainty, quick turnaround, and protect the air.

I know this can be done because we do it in Oregon. For over 20 years, Oregon's new source review program allows sources to make changes quickly, and it protects air quality. Oregon's system is a "Plantwide Applicability Limit" or PAL; and it addresses all the problems that have been hashed back and forth for the last 10 years in EPA's NSR reform process.

Intel has a plant in the Portland area and they are quite happy with Oregon's program, as you will hear from Mr. Harper today. In fact, Intel should be commended for their voluntary donation of some of their emissions of volatile organic compounds. Thanks to reductions from companies like Intel in the Portland area, we have been able to be reclassified from an ozone nonattainment area to an attainment area.

Let me be clear, however. EPA's proposal for PAL doesn't offer the protections and improvements that Oregon's program does. I think it's important to point out that Oregon wants to keep this area in attainment, and has changed its PAL program so that where companies make a substantial amount of emission reductions, the emissions "cap" under a company's PAL is now reduced so that company's emission reductions are "locked in". The company's limit has been reduced.

In addition, Oregon's system doesn't let a company increase its pollution based on phantom emission reductions nor does it allow companies to "inflate" its baseline emissions by selecting the highest 2 years over the past 10 years.

And unlike EPA's PAL, approach, *all* new sources or modifications in Oregon must go through our system. EPA offers the States a menu of options. Obviously, it should be a State's choice to use a PAL system or not. But once a State chooses a PAL system, it should apply uniformly. Companies should not be given the option of picking the approach that allows them to minimize reductions and controls as EPA would allow them to do.

I think the Bush Administration has missed the point, and an opportunity. Rather than relaxing rules and weakening enforcement, EPA should be ensuring that the State and local agencies responsible for issuing NSR permits have the people and resources to do the job right. Sound and reasonable permitting decisions will both assure the regulatory certainty that business is seeking and maintain clean air protections.

EPA said it themselves: an EPA official recently stated many problems with NSR stem from the responsible personnel at the State and local agencies being "the last ones hired". They are very young, the NSR work assignment is frequently viewed "entry level" and undesirable and at the earliest opportunity the more ambitious personnel are "promoted out" of NSR. The result of this lack of experience, mentoring, and institutional memory is a cumbersome regulatory process at some State and local air permitting agencies.

EPA's solution amounts to a "Mc-NSR" approach, where EPA is saying 'We do it all for you' claiming its package makes the process easier to understand for the State and local agencies. Staff don't have to think anymore or make difficult decisions; the regulations make it all automatic.

Rather than rewriting regulations and weakening clean air protections, the Bush Administration should be looking at the real issues associated with NSR, and real solutions. Giving bigger exemptions to some emissions sources does not solve air pollution problems. In fact, it makes it tougher for States as well as industrial sources to meet air quality goals. I, along with four other Senators, have recently signed a letter to the appropriations subcommittee that funds EPA. We have urged the subcommittee to increase funding for State and local air pollution control agencies by $25 million above the President's proposal.

These agencies are the gatekeepers with the difficult task of balancing statutory environmental protection with economic growth. Let's help them do this! Instead of dumbing down the law by rewriting the regulations, and endorsing a Clear Skies Initiative that essentially eliminates NSR for all power plants in the United States, State and local air agencies and the public would be better served by investing the

resources to find the smarter win-win solutions that achieve both our energy and environmental goals.

STATEMENT OF HON. MARIA CANTWELL, U.S. SENATOR FROM THE STATE OF WASHINGTON

I would like to thank both Chairman Jeffords and Leahy for holding this important hearing today and would like to thank the members of our panel for taking the time to share their expertise and views with us.

Protecting the air we breathe is fundamental to environmental stewardship. When Congress passed the Clean Air Act in 1972, it was a great step forward in protecting the health and environment of our communities.

In 1990, Congress and President George H.W. Bush amended the Clean Air Act by establishing the New Source Review (NSR) program to enhance air quality by regulating pollution from energy producers. The EPA set minimum national standards for air quality, while States were given the primary responsibility for enforcement. Under NSR, older power plants are required to minimize pollution by harnessing new protective technology when they modernize the rest of their operations.

In May 2001 Vice President Cheney's Energy Task Force recommended a review of NSR, after which time such regulations were not enforced. On June 13, 2002, the EPA recommended changes in the NSR that would effectively weaken many environmental protections. The changes would raise emissions limits, selecting the highest base rate of the past 10 years and only affecting plants that are currently increasing emissions; let companies avoid installing the best available pollution technology controls by drastically narrowing the definition of "modification;" and delay the 'Best Available Control Technology' implementation by 10 to 15 years.

Despite the resistance of certain companies, many businesses are successfully complying with the Clean Air Act. In my State of Washington, the Centralia coal plant has focused its efforts on upgrading facilities rather than litigating in court. And there can be no doubt that the Clean Air Act has improved the nation's air quality. According to a study by the Congressional Research Service, the Clean Air Act has lead to "noticeable improvements in air quality in recent years;" there are now 42 more metropolitan areas meeting the 1-hour ozone standard and 36 more areas achieving the carbon monoxide standards (CRS Issue Brief, 7/8/02).

I am concerned that the Administration's Clear Skies proposal ignores these successes and will undermine over a decade of progress in protecting our nation's air.

I am also troubled that this Administration has encouraged companies to avoid settlement of current cases in the hopes of weaker regulations in the future. State Attorneys General pursuing past infractions have been hindered by the Administration's public interference. For example, the Federal Government has a pending case against the Tennessee Valley Authority's NSR violations, which EPA Administrator Christine Todd Whitman has referenced as an excuse for other plaintiffs to delay settlements. On March 7, 2002, she offered this legal advice to the Senate Environment Public Works Committee: "if I were a plaintiff's attorney, I wouldn't settle anything until I knew what happened to that case." This is unacceptable. The EPA and the Justice Department's main focus should be upholding and enforcing our environmental laws, not delaying or circumventing them.

The Senate must carefully examine whether the Administration's Clear Skies proposal will indeed improve air quality. I look forward to the testimony today. Thank you Mr. Chairmen.

STATEMENT OF THOMAS L. SANSONETTI, ASSISTANT ATTORNEY GENERAL, ENVIRONMENT AND NATURAL RESOURCES DIVISION

INTRODUCTION

Chairmen Jeffords and Leahy, and Members of the Committees, I am pleased to be here today to discuss the Department of Justice's enforcement activities on behalf of the Environmental Protection Agency's New Source Review or "NSR" program. We take the health impacts of air pollution seriously and view our enforcement activities in this area as an important part of the effort to clean up the air that Americans breathe and to protect public health and the environment. Accordingly, we in the Department's Environment and Natural Resources Division are continuing to prosecute vigorously a variety of actions in connection with the NSR program.

In my testimony today, I will give you some background on the NSR enforcement litigation in general and then discuss in greater detail our enforcement activities in

this area. One of the points that I want to convey to you is that there is much more to this program than regulation of power plants, and that we have taken a broad-based enforcement approach encompassing a number of industries. This approach has resulted in significant gains for public health and the environment across the United States. In addition, although I will not be discussing it in further detail, the Committees should be aware that the NSR litigation is only one part of the Environment and Natural Resources Division's enforcement docket. We have many other enforcement actions focusing on other, non-NSR related portions of the Clean Air Act, such as violations of permits, State implementation plans, New Source Performance Standards, and National Emission Standards for Hazardous Air Pollutants. In addition, we are also actively prosecuting violators of the Clean Water Act, the Safe Drinking Water Act, the hazardous waste laws and a variety of other environmental laws. We are committed to vigorous enforcement of all of the environmental laws as well as violations pertaining specifically to the NSR program.

HISTORY OF NSR ENFORCEMENT LITIGATION

In 1977, Congress amended the Federal Clean Air Act to add certain provisions which have come to be known as the New Source Review or "NSR" provisions. The NSR provisions actually have two parts—the Prevention of Significant Deterioration provisions, which apply to areas in attainment status for national ambient air quality standards, and the New Source Review provisions proper, which apply to areas that are in non-attainment status. See 42 U.S.C. § 7470 *et seq.* and § 7501 *et seq.* Both sets of provisions require that both newly constructed sources of air pollution and existing sources that undergo "modification" obtain an NSR permit and install state-of-the-art pollution control technology. The Act defines a "modification" as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or results in the emission of any air pollutant not previously emitted." 42 U.S.C. §§ 7411(a)(4), 7479(2)(C), 7501(4). If the source is in an attainment area, it must use the best available pollution control technology, but if it is in a non-attainment area, it must use the more stringent lowest achievable emissions reduction technology. 42 U.S.C. §§ 7475(a)(4), 7503(a)(2).

In the late 1980's, the Department of Justice began bringing enforcement actions for NSR violations against facilities that made "modifications" without obtaining a permit or installing state-of-the-art pollution controls. Our primary goal in these actions has been, and continues to be, the protection of public health and the environment by compelling facilities that are in violation of the law to install state-of-the-art pollution controls. We also seek the imposition of appropriate civil penalties for past violations, as an important component of our efforts to discourage non-compliance and to ensure a level playing field between those who comply with the law and those who fail to do so.

Over time, working with our colleagues at EPA, we developed a strategy of targeting industries that had significant compliance problems with regard to NSR requirements and that were major sources of air pollution. These industries included the wood products industry, refineries, and coal-fired utilities. I would like to describe just a few of our recent successes in these sectors.

Wood Products Industry

The first industry on which we focused in our NSR enforcement efforts was the wood products industry. Our first actions concerned single facilities. See *U.S.* v. *Louisiana-Pacific Corp.,* 682 F.Supp.1141 (D. Colo. 1988). We subsequently filed another action against Louisiana Pacific, which was resolved in 1993 by a consent decree that required the company to install pollution controls at its facilities nationwide and to pay a civil penalty of $11 million. Since that landmark settlement, we have had a string of successes in obtaining similar settlements from other major wood products manufacturers, such as Georgia Pacific and Willamette Industries. In fact, I was privileged to announce our most recent success in this sector just a few months ago. In March of this year, we filed a consent decree with wood products industry giant Boise Cascade Corporation that will require reductions of up to 95 percent of the harmful emissions from the company's eight plywood and particle board plants, located in Oregon, Washington, Louisiana and Idaho. Boise Cascade will also pay $4.35 million in civil penalties and has agreed to spend another $2.9 million in supplemental controls to reduce emissions at various plants. The State of Louisiana, which joined us in bringing this action, will receive a portion of the civil penalty.

Refineries

We have also been very successful in reaching settlements for NSR violations with several major refiners. After prevailing at trial on the issue of liability, we joined with the EPA and the Wisconsin Department of Justice in January to announce a settlement with Murphy Oil USA, Inc., which will dramatically cut sulfur dioxide ("SO_2") emissions from the company's Superior, Wisconsin refinery, and will also improve Murphy Oil's programs to monitor and repair leaks of volatile organic compounds and to prevent oil spills. Murphy will also pay a $5.5 million civil penalty, the largest ever leveled in Wisconsin in an environmental enforcement case; the State of Wisconsin will receive $750,000.

Also, last December, we announced comprehensive environmental settlements with Conoco Inc., Navajo Refining Company and Montana Refining Company that are expected to reduce harmful air emissions from seven U.S. petroleum refineries by more than 10,000 tons per year. One consent decree required Conoco to spend an estimated $95–$110 million to install the best available technology to control emissions from stacks, wastewater vents, leaking valves and flares throughout its refineries, while the other required Navajo and Montana Refining to spend an estimated $16–$21 million to undertake similar projects. The States of Louisiana, Oklahoma, Montana, Colorado and New Mexico joined the settlements and are sharing in the civil penalties obtained. Attorney General Ashcroft stated that "[t]hese settlements are a victory for the environment and the public," and that "[t]hey exemplify the U.S. government's commitment to protect our natural resources, to promote cleaner air and to ensure that companies are complying with environmental law."

These are only a few of the many settlements that we have reached with major refiners in the last 18 months and that will ensure cleaner air nationwide. Cumulatively, these settlements cover 37 refineries and 30.6 percent of the nation's domestic refining capacity, and are expected to reduce air emissions of nitrogen oxides and sulfur dioxide by more than 150,000 tons per year. These settlements also include provisions to facilitate the production of low sulfur gasoline and diesel fuel, enhance flexibility, and expedite permitting necessary to address future needs.

Coal-Fired Utilities

The Department filed seven enforcement actions in 1999 against the owner and operators of coal-fired power plants located in Illinois, Indiana, Ohio, West Virginia, Virginia, Georgia, Alabama, and Florida, and three additional actions since then for plants located in North Carolina, South Carolina, Alabama, and New Jersey. So far, we have reached settlements with the Tampa Electric Power Co., and agreements-in-principle with Virginia Electric Power Company and Cinergy, under which these companies agreed to install and operate state-of-the-art pollution controls on significant portions of their entire coal-fired generating systems.

Our most recent success in this area came in January, when we joined forces with the State of New Jersey by filing an action against and reaching a settlement with PSEG Fossil LLC. Under that settlement, PSEG will spend over $337 million to install state-of-the-art pollution controls to eliminate the vast majority of sulfur dioxide and nitrogen oxide emissions from its Mercer and Hudson coal-fired power plants in Jersey City and Hamilton, New Jersey. The combined effect of the pollution controls will reduce the company's emissions of sulfur dioxide (SO_2) by 90 percent and its emissions of nitrogen oxides (NOx) by more than 80 percent. Overall reductions will be at least 36,000 tons of SO_2 and 18,000 tons of NOx per year. These decreases represent 32 percent of all the SO_2 and 20 percent of all the NOx emitted from stationary sources in New Jersey, and 19 percent of all the SO_2 and 5 percent of all the NOx from all sources in the State, including cars and trucks. In addition to the pollution reductions secured by the settlement, PSEG Fossil agreed to pay a civil penalty of $1.4 million and to spend at least $6 million on three pollution reduction projects that will partially offset the impact of past emissions. As the Attorney General stated, "This important settlement reflects our continuing commitment to enforce vigorously the Clean Air Act to protect public health and the environment."

CURRENT STATUS OF PENDING NSR ENFORCEMENT ACTIONS

We currently have 11 pending enforcement actions in which NSR violations are the main issue. Eight actions involve coal-fired power plants, and the remaining three involve other industries.

Of the eight pending power plant cases, five are currently in active discovery on liability issues. The first of the five (*U.S.* v. *Southern Indiana Gas & Electric Co.* ("SIGECO")) is scheduled to go to trial later this year in October. In the other three pending power plant cases, the parties are either engaged in settlement negotiations

(*U.S.* v. *Cinergy Corp.* in Indiana) or discovery has been stayed because the district courts are awaiting the Eleventh Circuit's decision in *TVA* v. *EPA.* (*U.S.* v. *Georgia Power Co.* and *Savannah Power Co.* in Georgia and *U.S.* v. *Alabama Power Co.* in Alabama). *TVA* v. *EPA* is a challenge by TVA to EPA's 1999 administrative order directing TVA to install pollution controls at coal-fired power plants in Kentucky, Tennessee and Alabama that have undergone modifications. Although that case has been fully briefed and was argued in May 2002, the Eleventh Circuit has not reached a decision and recently referred the case to mediation until the end of August.

Seven northeastern States (New York, New Jersey, Connecticut, Vermont, New Hampshire, Massachusetts, and Rhode Island) and Maryland have joined as plaintiffs in one of the enforcement actions against coal-fired power plants (*U.S.* and *State of New York et al.* v. *American Electric Power Co. et al.*) New York, New Jersey and Connecticut also joined as plaintiffs in *U.S.* and *State of New York et al.* v. *Ohio Edison Co. et al.* and in *U.S.* v. *Cinergy Corp.*

A number of citizen and environmental groups also have joined as plaintiffs in four of the enforcement actions against coal-fired power plants. Citizen plaintiffs in *U.S.* and *State of New York et al.* v. *American Electric Power Co. et al.* include Ohio Citizen Action, Natural Resources Defense Council, Sierra Club, Clean Air Council, U.S. Public Interest Research Group, Izaak Walton League of America, National Wildlife Federation, Citizens Action Coalition of Indiana, Hoosier Environmental Council, Valley Watch, Inc., Ohio Valley Environmental Coalition, West Virginia Environmental Council, Indiana Wildlife Federation, and the League of Ohio Sportsmen. Citizen plaintiffs in *U.S.* v. *Duke Energy Corp.* include the North Carolina Sierra Club, North Carolina Public Interest Research Group, and Environmental Defense. Citizen plaintiffs in *U.S.* v. *Georgia Power Co.* include Physicians for Social Responsibility, Campaign for a Prosperous Georgia, U.S. Public Interest Research Group, and the Alabama Environmental Council. The Alabama Environmental Council is also a plaintiff in *U.S.* v. *Alabama Power Co.* Finally, Hoosier Environmental Council and Ohio Citizen Action have joined as plaintiffs in *U.S.* v. *Cinergy.*

THE ATTORNEY GENERAL'S NEW SOURCE REVIEW REPORT

In May 2001 the National Energy Policy called for the Attorney General to "review existing enforcement actions regarding new source review to ensure that the enforcement actions are consistent with the Clean Air Act and its regulations." This review was conducted by the Department of Justice's Office of Legal Policy, which issued its report in January 2002 ("New Source Review: an Analysis of the Consistency of Enforcement Actions with the Clean Air Act and Implementing Regulations"). The Office of Legal Policy determined that "the existing enforcement actions are supported by a reasonable basis in law and fact," and that the Department's Environment and Natural Resources Division "will continue, as it has during the pendency of this review, to prosecute vigorously the EPA's civil actions to enforce the new source review provisions." OLP New Source Review Report, January 2002, p. vi. I should also note that our determination does not mean that EPA cannot revise NSR regulations in the future. As OLP said in its report: "The effect of the Department's conclusion is retrospective. It examines only currently pending enforcement actions to determine their lawfulness, and expresses no opinion on how the Clean Air Act should be enforced in the future. Those policy determinations rest with the EPA."

CONCLUSION

In closing, I would like to assure these Committees that the Department of Justice takes very seriously its obligation to enforce the existing laws and to protect public health and the environment. As directed by the Attorney General, we will continue to vigorously prosecute the NSR enforcement actions and to defend the action brought by TVA against EPA to the full extent of the law. I would be happy to answer any questions that you may have about my testimony.

RESPONSES OF THOMAS L. SANSONETTI TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. Mr. Holmstead said that he met with DOJ attorneys regarding the potential negative impact of the NSR reform announcement on the enforcement cases. Who did he meet with and when?

Response. ENRD attorneys have discussed PSD/NSR issues primarily with representatives of EPA's Office of Enforcement and Compliance Assurance and Office

of General Counsel. In addition, we have carefully reviewed with EPA each brief filed on their behalf to ensure that the brief was consistent with their position. Over time, my staff has also answered specific questions on several occasions that were posed by EPA staff concerning PSD/NSR issues. Aside from these discussions, my Deputy has discussed PSD/NSR reform with Assistant Administrator Holmstead and other EPA officials on a number of occasions.

Question 2. How many cases have been referred to DOJ by EPA for prosecution in 2002? How does that compare to the average during the Clinton Administration?

Response. During Fiscal Year 2002 to date, EPA has referred 287 cases to DOJ for filing civil enforcement actions. The average for a similar time period in Fiscal Years 1993–2000 was 283.5 referrals.

Question 3. Please provide any legal analysis performed by the Department in the 6 months prior to the announcement of the NSR Reform Package with respect to the potential impact of any elements of the announcement on the pending enforcement actions.

Response. Prior to the announcement being made, the Department did not perform a legal analysis of the potential impact of the June 13 announcement on the pending enforcement actions. Before June 13, staff communications took place on various issues raised by EPA staff regarding potential issues associated with future reforms.

Question 4. In the filing on the Southern Indiana Gas and Electric Company case, you stated that the entire utility industry had constitutionally adequate and advance notice of EPA's interpretation of "routine maintenance," long before EPA and the Department filed enforcement actions in 1999. Is that still your position?

Response. This matter is currently in litigation, *United States* v. *Southern Indiana Gas & Electric Company*, S.D. Ind. Civil Action No. IP99–1692-C-M/S. Accordingly, the most accurate statement of the position of the United States is contained in our briefs to the Court, and we stand by those briefs.

Question 5. You also stated that this advance notice clarified that the exemption for routine maintenance is only for trivial or "*de minimis* situations," and applies only on a case-by-case basis to activities that are routine for a typical unit. Is that still your position?

Response. This is a matter is currently in litigation, *United States* v. *Southern Indiana Gas & Electric Company*, S.D. Ind. Civil Action No. IP99–1692-C-M/S. Accordingly, the most accurate statement of the position of the United States is contained in our briefs to the Court, and we stand by those briefs.

Question 6. How many of the utility modifications which are currently subject to DOJ-EPA enforcement actions would not be required to install controls if they were allowed to take advantage of EPA's announced proposed and final rules for routine maintenance and repair, Plant Wide Applicability Limits, and the "clean unit test"?

Response. Although EPA has announced that it intends to propose a rule or issue a final rule regarding these issues, it has not announced what the specific language of the proposed or final rules will be. Proposed rules will also be subject to section 307(d) of the Clean Air Act which requires formal public notice and an opportunity to comment before they can become final. Accordingly, it is not possible to answer this question. In any event, as Assistant Administrator Holmstead testified at the July 16 hearing, the rule will be prospective in nature and is not intended to affect current litigation.

Question 7. Has DOJ failed to pursue any new NSR enforcement cases in fiscal year 2001 or fiscal year 2002 due to lack of resources?

Response. Within the budget restraints established by Congress, we have pursued all new NSR enforcement cases that have been referred to us in fiscal year 2001 and fiscal year 2002.

RESPONSES OF THOMAS SANSONETTI TO ADDITIONAL QUESTIONS FROM SENATOR LEAHY

Question 1. Please provide us copies of the briefs filed over your signature, and referred to by Senator Lieberman in his opening statement in which the Department of Justice reportedly argued in Federal court that any exemption from the New Source Review requirements should be "narrowly construed" and that utilities "indisputably had notice of EPA's interpretation" of those requirements. Also, if those representations are indeed accurate please explain why—if the interpretation

has not varied and industry had fair notice—the NSR requirements need clarification.

Response. Attached are representative briefs on the points identified. As I testified, the Department of Justice's Office of Legal Policy undertook a review of the existing enforcement actions regarding new source review to ensure that the existing enforcement actions were consistent with the Clean Air Act and its regulations. It determined that those actions had a reasonable basis in law and fact. However, that determination does not mean that EPA cannot revise NSR regulations in the future. Because EPA is the Agency responsible for implementing the Clean Air Act, it is charged with determining whether future PSD/NSR reforms are necessary.

Question 2. In answer to my questions in the joint hearing, you stated three times—and without caveat or qualification—that in none of the pending NSR cases were defendants backing away from settlement in light of the EPA's announcement of its proposed changes to the NSR program. How do you reconcile your absolute statement that these defendants are not retreating from possible settlements with those same defendants' statements that, for example, "The thinking was, how can you do things that will influence NSR and the pending litigation? If the Administration recants NSR provisions, the lawsuits fall apart."

Response. I stand by my testimony that in the settlement negotiation context, we are not aware of defendants backing away from discussions in light of EPA's announcement of proposed changes. We have consistently stated both publicly and in the context of settlement discussions that we will vigorously litigate the NSR enforcement cases while welcoming settlement as the preferred method to meet the legal standards.

Question 3. You did not, however, answer my question that preceded the discussion referred to in the question above—namely, whether you and your lawyers anticipated that defendants in the pending NSR cases would begin brandishing the EPA's proposals as support for dismissing the suits against them. Did you, and if you did, how did you plan to counter those efforts, and how, successful have those counter-efforts been? And if you did not, why not, and what are you and your lawyers doing in response to these tactics? How have they affected the conduct of the on-going discovery, litigation, or settlement discussions, as the case may be?

Response. Based on years of bringing enforcement actions, it is our experience that defendants will raise a wide variety of issues in their defense. Although we generally can anticipate such issues, e.g. potential use of EPA's June 13 announcement, how we respond to them depends, among other things, on the context in which they are raised. At the time of my testimony, no defendant in any of our NSR cases had raised EPA's June 13 announcement of its proposals as a basis for dismissal, and that continues to be the case. Since then, one company has raised the announcement in a brief, but not in the context of requesting a dismissal.

Question 4. At one point in your testimony, you told me that whether announced changes to a Clean Air Act regulation—namely NSR—midstream in litigation would effect the pending cases would depend upon the judge in the individual case. A moment later, you declared that you believed that judges would look at existing law at the time the issues came before them, and that the proposed changes to NSR would not be final at the time of the NSR trials. I would appreciate a clear answer: do you believe, as the nations' head environmental litigator, that a court could properly consider the proposed changes to NSR regulations and practices in determining the outcome, by trial or settlement, of the pending cases?

Response. EPA has not announced what the specific language of the proposed rule will be. Once proposed, EPA will follow section 307(d) of the Clean Air Act, which requires formal public notice and an opportunity to comment before the rule becomes final. As to rules that become final in the future, what a particular judge makes of a provision in the final rule will be in the context of a particular case. However, EPA testified at the July 16 hearing that the changes that it makes to the NSR program will be prospective in nature, and are not intended to be used in, or have any impact on, current litigation, including negotiations. Thus, for purposes of determining liability, the existing enforcement actions should continue to be subject to the law in place at the time of the violations at issue.

Question 5a. Mr. Holmstead testified regarding the development of the Environmental Protection Agency's New Source Review Recommendations and Report to the President. He stated that the Recommendations and Report had been the product of "extensive consultation" between EPA and the Department of Justice. You, however, testified that you are "in the litigation business, not policy formation." Please answer this basic question: How did the Justice Department (leadership and/or

staff) and the EPA (leadership and/or staff) work together on the development of the policy behind, or the actual text of, the Recommendations and Report?

Response. My staff have discussed PSD/NSR issues primarily with representatives of EPA's Office of Enforcement and Compliance Assurance (OECA) and Office of General Counsel (OGC). In addition, we have carefully reviewed with EPA each brief filed on their behalf to ensure that the brief was consistent with their position. Over time, my staff has also answered specific questions on several occasions that were posed by EPA staff concerning PSD/NSR issues. My deputy discussed the NSR Report and accompanying list of recommendations with Mr. Holmstead, but most of the staff discussions concerning PSD/NSR issues have been with representatives of OECA and OGC. However, we did not work on the particulars of the policy behind the Recommendations and Report.

Question 5b. Mr. Holmstead also testified that one of the "primary issues" discussed in the "extensive consultation" between DOJ and EPA was what impact the proposed NSR revisions would have on NSR enforcement cases, and that his understanding from DOJ was that there would be no effect on the cases. Who actually gave that advice?

Response. ENRD attorneys (have discussed PSD/NSR issues primarily with representatives of EPA's Office of Enforcement and Compliance Assurance and Office of General Counsel. However, our contact has largely occurred in the context of ongoing litigation, including the case brought by the Tennessee Valley Authority which was argued this year before the 11th Circuit Court of Appeals. For instance, EPA reviewed each brief for legal and factual accuracy in that case, and attended moot courts and the oral arguments before the Court of Appeals. Some of the EPA staff participating in this review were also working internally in EPA on PSD/NSR reform. There were also informal discussions about PSD/NSR reform between Assistant Administrator Holmstead and other EPA officials with my Deputy on several occasions. Prior to the announcement being made, the Department did not perform a legal analysis of the potential impact of the June 13 announcement on the pending enforcement actions.

Question 6. Mr. Holmstead testified, in answer to one of Senator Carper's questions, that EPA had never defined "routine maintenance, repair, and replacement" by regulation. What is your understanding of what that term means?

Response. Please see the attached brief in which we discuss that term.

Question 7. In answer to a question from Senator Sessions, you declared that "a significant issue" in the *TVA* v. *EPA* case was whether the EPA should be estopped from pursuing the case because the Agency had been long aware of the alterations made to the power plants at issue, and that you would inquire into whether the DOJ attorney representing the EPA before the Eleventh Circuit was ethically obliged to confess error on that point. What is the result of your inquiry on this specific point? More generally, under what circumstances do you believe the EPA would be ethically constrained from bringing an NSR enforcement action based on the temporal concerns described by Senator Sessions?

Response. Please see the attached letter to Senator Sessions addressing this question.

Question 8. In this hearing, and certainly in the press, Administration officials frequently seek to bolster their arguments for acceptance of the announced proposed changes to NSR by referring to a set of Clinton Administration proposals that are purportedly the basis for the Bush Administration changes. Please explain precisely how the two proposals differ.

Response. This appears to be a reference to statements in Assistant Administrator Holmstead's testimony, and would be more appropriately answered by EPA, the Agency that is responsible for the proposals.

RESPONSES OF THOMAS L. SANSONETTI TO ADDITIONAL QUESTIONS FROM SENATOR LIEBERMAN

Question 1. Your Department argued in the Southern Indiana Gas and Electric Company case—in a brief to which you were counsel—that "the [routine maintenance] exemption is narrowly construed, in keeping with its status as a *de minimis* exemption." Is it your reading of the law that the "routine maintenance" exemption—which has no basis in statute—must be narrowly construed?

This is a matter currently in litigation, *United States* v. *Southern Indiana Gas & Electric Company,* S.D. Ind. Civil Action No. IP99–1692-C-M/S. Accordingly, the

most accurate statement of the position of the United States is contained in our briefs to the Court, and we stand by those briefs.

Question 2. Your Department also argued in the same brief that "EPA [was] not seeking to apply a new interpretation to the defendant's conduct. As described above, EPA's interpretation is the same one upheld in WEPCO more than a decade ago, before the defendant modified its plant." Is it your understanding that EPA's interpretation of the NSR rules has not changed for more than 10 years?

This is a matter currently in litigation, *United States* v. *Southern Indiana Gas & Electric Company*, S.D. Ind. Civil Action No. IP99–1692-C-M/S. Accordingly, the most accurate statement of the position of the United States is contained in our briefs to the Court, and we stand by those briefs. It is our understanding that the EPA interpretation at issue in the quoted sentence has not changed, and is the same interpretation that was upheld in *Wisconsin Electric Power Company* v. *Reilly* ("WEPCO"), 893 F.2d 901 (7th Cir. 1990).

Question 3. New York Attorney General Spitzer informs us that the Federal judge handling his NSR lawsuit has asked for briefing on the effect of these proposed rule changes on the case. Has any judge asked for similar briefing in a case to which the United States is a party? Is it the position of the United States that this package of final and proposed rules should have no effect on the NSR lawsuits?

Response. No judge has asked for similar briefing in any of the NSR enforcement actions in which the United States is a party. Although we have not reviewed the proposed rules, Assistant Administrator Holmstead stated in his testimony that the proposed rules will be prospective in nature and that EPA does not intend for its future rulemaking or proposed changes to be used in, or have any impact on, current litigation. We note that this position is consistent with the position taken by Attorney General Spitzer in response to the Federal judge's request in the New York litigation.

Question 4. When Administrator Whitman testified before the Government Affairs Committee on this issue last March, she contended that you were "vigorously enforcing" these cases, but she was not able to point to any enforcement action that did not have its roots in the Clinton Administration. Have you initiated any New Source review enforcement action, the investigation for which was started in the Bush Administration?

Response. We are continuing to vigorously enforce NSR cases. As I testified, the report by the Department of Justice in January specifically indicated that we have been, and "will continue . . . to prosecute vigorously the FPA's civil actions to enforce the new source review provisions." Office of Legal Policy New Source Review Report, January 2002. As discussed in greater detail in my testimony, we have brought numerous Clean Air Act enforcement cases involving PSD/NSR violations. For example, in March of this year, we filed a complaint and lodged a consent decree with wood products industry giant Boise Cascade Corporation that will require reductions of up to 95 percent of the emissions from the company's eight plywood and particle board plants, located in Oregon, Washington, Louisiana and Idaho. Boise Cascade will also pay $4.35 million in civil penalties and has agreed to spend another $2.9 million in supplemental controls to reduce emissions at various plants. Also, in January, the State of New Jersey joined us in filing an action against and reaching a settlement with PSEG Fossil LLC under which PSEG will spend over $337 million to install state-of-the-art pollution controls to eliminate 90 percent of its sulfur dioxide and more than 80 percent of its nitrogen oxide emissions from two New Jersey coal-fired power plants. In addition to these pollution reductions, PSEG will pay a $1.4 million civil penalty and spend at least $6 million on three pollution reduction projects that will partially offset the impact of past emissions. As the Attorney General stated in connection with this case, "This important settlement reflects our continuing commitment to enforce vigorously the Clean Air Act to protect public health and the environment."

Question 5. Attorney General Spitzer also has informed us that he has not been able to finalize settlements with VEPCO and Cinergy, whereas he previously would have been able to. Has your department found a greater reluctance on the part of NSR defendants to settle lawsuits?

Response. As you know, the Department has reached agreements in principle with VEPCO and Cinergy to settle NSR claims. Those agreements have not yet been successfully translated into final consent decrees because of substantive differences that pre-dated EPA's announcement of proposed NSR changes. Accordingly, we do not believe that EPA's June 13 announcement is preventing settlements in the NSR cases. We remain willing to settle any case on terms that would meet all legal requirements while protecting human health and the environment.

RESPONSES OF THOMAS L. SANSONETTI TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. As I questioned during the hearing, I am very interested in finding out what preceded the Department of Justice's lawsuits. Overnight many companies had become the subject of lawsuits under NSR for things that they had been doing for years. Specifically, what action caused DOJ to file these lawsuits? Please list and describe the details surrounding the 1998 filings.

Response. With regard to the NSR enforcement actions, as I stated in my testimony and as noted in the Department's Office of Legal Policy's report on these actions, we began bringing enforcement actions under the Clean Air Act's PSD/NSR provisions in the late 1980's. The first industry on which we focused our NSR enforcement efforts was the wood products industry. See *U.S.* v. *Louisiana-Pacific Corp.*, 682 F. Supp. 1141 (D. Colo. 1988) (action focused on a single facility). We subsequently filed another action against Louisiana Pacific, which was resolved in 1993 by a consent decree that required the company to install pollution controls at its facilities nationwide and to pay a civil penalty of $11 million. These actions, and our civil cases more generally, are based on analysis and inspections by EPA and state agencies. EPA reviews industry and company compliance with the law and recommends enforcement actions based on research identifying particular industrial sectors as significant sources of air pollution and on investigations identifying particular plants as being in violation of the Clean Air Act. The wood products, and pulp and paper industries were the subject of major enforcement efforts before the actions against the utilities were commenced, and the utility and oil refining sectors are more recent industrial sectors identified in this way. In accordance with the process that we have followed in all of our PSD/NSR cases, the current lawsuits against the utility companies were the result of an extensive investigation and analysis by EPA and an extensive legal and factual review by the Department's attorneys.

Question 2. How did the Department of Justice choose which industries and plants to bring enforcement actions against? Is the Department planning more action?

Response. Please see the response to the preceding question. The Department of Justice will continue to evaluate and analyze referrals by the Environmental Protection Agency that involve violations of the law to determine whether the case is appropriate for filing.

RESPONSES OF THOMAS L. SANSONETTI TO ADDITIONAL QUESTIONS FROM SENATOR GRAHAM

Question 1. Given the Administration's proposed NSR changes, how will EPA and DOJ interpret the application of NSR to existing lawsuits and signed consent decrees, which have been based on previous NSR policy?

Response. As Assistant Administrator Holmstead testified on EPA's behalf, "the changes that [EPA] make[s] to the NSR program will be prospective in nature, and EPA will continue to vigorously pursue its current enforcement actions. Accordingly, EPA does not intend for its future rulemaking or proposed changes to be used in, or have any impact on, current litigation." The existing lawsuits and signed consent decrees will continue to be subject to the law in place at the time of the violations at issue.

Question 2. If the proposed NSR changes permit sulfur dioxide and nitrogen oxide trading and these changes are included in the final rule how will this affect existing consent decrees and/or negotiations where limitations on emissions trading is planned?

Response. We have been advised by EPA that it does not intend to include such provisions as part of the proposed NSR changes.

RESPONSE OF THOMAS SANSONETTI TO ADDITIONAL QUESTIONS FROM SENATOR CANTWELL

Question 1. During your testimony, you said that you did not believe the behavior and public comments of Administration officials has done any harm to enforcement actions and current trials. But Secretary Whitman previously told this committee that "if I were a plaintiff's attorney, I wouldn't settle anything until I knew what happened to the case [TVA]." Do you think that discouraging settlement of Federal

cases in the hopes of new, weaker regulations interferes with your enforcement abilities?

Response. I was not present at the hearing in question and do not know the context of the Administrator's response. In *Tennessee Valley Authority* v. *EPA*, currently pending in the 11th Circuit Court of Appeals (No. 00–15936), the Department of Justice has argued on behalf of EPA in significant briefs during this Administration, and in oral argument before the Court on May 21, 2002, that TVA has violated the Clean Air Act PSD/NSR requirements. The Administrator has clearly stated on other occasions her firm support for enforcement of all laws, her support for the ongoing litigation, and her continued emphasis that a prompt settlement would be in the best interest of all parties. In support of this view, a utility, PSEG Fossil LLC, has settled a case this year. In that case, PSEG will spend over $337 million to install state-of-the-art pollution controls to eliminate 90 percent of its sulfur dioxide and more than 80 percent of its nitrogen oxide emissions from two New Jersey coal-fired power plants. In addition to these pollution reductions, PSEG will pay a $1.4 million civil penalty and spend at least $6 million on three pollution reduction projects that will partially offset the impact of past emissions. Further, as I stated at my hearing and elsewhere, we will continue to vigorously prosecute the NSR enforcement actions, which are moving forward to trial on schedules established by the courts independent of any hopes that defendants might harbor about potential new regulations. We stand ready to resolve those actions by settlement as appropriate.

U.S. DEPARTMENT OF JUSTICE,
Washington, DC., August 9, 2002.

Hon. JEFF SESSIONS,
U.S. Senate,
Washington, DC.

Dear SENATOR SESSIONS: Thank you for your July 17, 2002 letter to Assistant Attorney General for Environment and Natural Resources Tom Sansonetti regarding the recent Eleventh Circuit Court of Appeals oral agument in the case of *Tennessee Valley Authority, et al.* v. *Environmental Protection Agency*. During Mr. Sansonetti's recent testimony before the Senate Judiciary Committee, and in your letter, you asked that he confirm the accuracy of certain statements attributed to Department of Justice (DOJ) attorneys during the oral argument on May 21, 2002.

Your letter does not contain a specific quote, but indicates a comment was made during oral argument regarding the Environmental Protection Agency's (EPA) knowledge of the Tennessee Valley Authority's (TVA) projects that are at issue in the litigation. We have discussed this matter with the attorneys who handled the oral argument, as well as with DOJ and EPA attorneys who attended the argument. The issue you describe was the subject of a very short colloquy between a DOJ attorney and the Court regarding EPA's enforcement activities during the 1990's, and why the administrative action against TVA was not initiated earlier.

At Mr. Sansoneti's request, the Section Chief with responsibility for the TVA matter, reviewed this statement and the briefs submitted by the United States concerning this specific issue. After reviewing this matter with her, he is convinced that the very limited statements made by DOJ attorneys to the Court on this matter were consistent with the arguments on this point set forth in the briefs filed in the case, and are accurate. For your convenience, I am enclosing a copy of the brief filed on behalf of EPA (see pages 79–86).

Because the New Source Review (NSR) program is a preconstruction permitting program, a pollution source is required to provide information to EPA before the source undertakes a proposed major modification—either through a permit application, a request for an applicability determination, or other inquiry to the Agency—so that EPA and State authorities can assess the information and determine if emissions will be increased and if the NSR requirements apply. Our brief describes how EPA was generally aware of some improvement projects like TVA's in the utility industry in the late 1980's; however, the administrative record demonstrates that the utility industry (including TVA) did very little to provide EPA or State authorities with critical information about the nature and extent, purpose, frequency, and cost of those projects, especially with regard to the projected emissions from those projects. Such information is not typically obtained through general permit compliance inspection by the Agency or State authorities. The Agency only obtained the necessary information about these large-scale projects after specifically requesting it from several utility companies and TVA; the current enforcement actions were commenced thereafter.

During the oral argument colloquy noted above, our attorneys explained that EPA turned its NSR enforcement resources to coal-fired power plants in the mid-to-late 1990s after first pursuing a series of NSR enforcement actions in other industry sectors, including wood products, pulp and paper, steel mini-mills, and refineries beginning in the late 1980s. For your convenience, I am enclosing the relevant portion of the Attorney General's January 2002, Report to the President that addresses EPA's past industry-by-industry NSR enforcement efforts[1]. Of course, regardless of EPA's level of knowledge about utility industry projects at a particular point in time, the law is clear that, except in extremely limited circumstances typically involving affirmative misconduct of a government employee, the doctrines of estoppel and laches do not prevent the government from taking enforcement actions to protect human health and the environment.

I appreciate your interest in these matters, and am happy to be of further assistance if you have any additional questions.

Sincerely,

DANIEL J. BRYANT.
Assistant Attorney General.

U.S. DEPARTMENT OF JUSTICE, OFFICE OF LEGAL POLICY

NEW SOURCE REVIEW: AN ANALYSIS OF THE CONSISTENCY OF ENFORCEMENT ACTIONS WITH THE CLEAN AIR ACT AND IMPLEMENTING REGULATIONS, JANUARY 2002

EXECUTIVE SUMMARY

The Clean Air Act Amendments of 1970 required major stationary sources of air pollution to install devices to reduce pollution. Sources existing at the time were not required to retrofit pollution controls, but would be required to install such controls if and when they modified their facilities. In 1977, Congress amended the Clean Air Act to establish the new source review program, which requires preconstruction review and a permit for almost any major new source or modification of an existing source (if air pollution.

The current controversy over the new source review program centers on what constitutes a "modification." If a facility's construction project is a modification, then it is subject to the new source review process and the requirement that pollution controls be installed. If the project is not a modification, then there is no need for a permit or new pollution controls. The Clean Air Act defines "modification" to be "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollution not previously emitted."[1]

Between 1975 and 1980, the Environmental Protection Agency ("EPA") promulgated regulations which elaborate on the meaning of "modification" under the Clean Air Act. Together, the various statutory and regulatory requirements provide that physical changes that constitute routine maintenance, repair, or replacement are not modifications subject to the new source review permitting process. In addition, even physical changes considered to be modifications do not trigger new source review requirements if they do not result in a significant emissions increase.

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enforcement actions that a particular plant modification is "major," or encompasses more than "routine maintenance."

In light of this review's conclusions, the Department's Environment and Natural Resources Division ("ENRD") will continue, as it has during the pendency of this review, to prosecute vigorously the EPA's civil actions to enforce the new source review provisions. And it will continue, as it has during the pendency of this review, to pursue talks to settle those actions where appropriate on mutually acceptable terms. Because the existing enforcement actions are supported by a reasonable basis in law and fact, any decision to withdraw, terminate, or otherwise circumscribe them would rest in the discretion of ENRD, which must assess the relative strengths and weaknesses of a given case.

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[1] See "New Source Review: An Analysis of the Consistency of the Enforcement Actions with the Clean Air Act and Implementing Regulations," at 10–14.

[1] 42 U.S.C. § 7411(a)(4)(1994).

Frequently Used Abbreviations

AAR	Association of American Railroads
APA	Administrative Procedure Act
CAA	Clean Air Act
ENRD	Environment and Natural Resources Division
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FRA	Federal Railroad Administration
NAAQS	National Ambient Air Quality Standards
NSPS	New Source Performance Standards
NSR	New Source Review PSD Prevention of Significant Deterioration
PSD	Prevention of Significant Deterioration
TECO	Tampa Electric Company
TRAC	Telecommunications Research Action Center
TVA	Tennessee Valley Authority
VEPCO	Virginia Electric Power Company
WEPCO	Wisconsin Electric Power Company

The CAA of 1977 also established a program for major emitting facilities located in nonattainment areas of the country (known as the "nonattainment NSR" program).[42] The nonattainment NSR requirements parallel the PSD requirements described above, but require more stringent pollution controls for major emitting facilities in nonattainment areas.[43] In 1980, EPA promulgated regulations to implement the nonattainment NSR requirements regarding major modifications.[44] These regulations also provided an exception for "routine maintenance, repair, and replacement."[45]

EPA has not promulgated any regulations specifying what types of projects should be considered routine, and therefore exempt from the new source review process. In 1994, EPA staff circulated an informal draft proposal that would have equated "routine" with "minor" modifications.[46] This draft stated that "routine activities would generally include . . . minor maintenance or repair of parts or components and the replacement of minor parts or components with identical or functionally equivalent items.[47] Industry participants, however, apparently objected to this suggested definition, and EPA chose not to propose this language in any subsequent rulemakings.

B. Previous Enforcement Actions

The CAA's basic enforcement provisions are found in section 113,[48] which provides for both administrative and judicial enforcement proceedings. EPA has the authority to issue administrative compliance and penalty orders for violations of, among other things, the CAA, its implementing regulations, or a permit. In addition, EPA can seek injunctive relief and civil monetary penalties by referring matters to the Department for filing in the appropriate U.S. District Court. Courts may impose penalties of up to $27,500 per day for each violation. CAA § 113(e) specifies the criteria to be used by EPA and the courts in determining the appropriate amounts of penalties, including "the economic benefit of noncompliance, and the seriousness of the violation."[49]

EPA's enforcement of the new source review program through judicial proceedings began in the late 1980's. The earliest cases involved violations at individual facilities. For example, an enforcement action was filed against the Louisiana Pacific Co., which constructed a new wood-products manufacturing facility, because it neither applied for a PSD permit nor installed pollution control technology. In *United States*

[42] See 42 U.S.C. §§ 7501–15 (1994).
[43] See generally 40 C..F.R. § 52.24 (2001).
[44] See 45 Fed. Reg. 52,676, 52,747 (Aug. 7, 1980).
[45] 40 C.F.R. § 52.24(f)(5)(2001). This regulation states, in pertinent part: Major modification means any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act. . . . A physical change or change in the method of operation shall not include: (a) Routine maintenance, repair, and replacement . . .
[46] See New Source Review Reform 106–09 (EPA, Preliminary Staff Draft 1994).
[47] Id.
[48] See 42 U.S.C. § 7413 (1994).
[49] Id. § 7413(e)(1).

v. *Louisiana-Pacific Corp.*,[50] the court ruled that the company had violated the applicable PSD requirements.

EPA then investigated other wood-products manufacturers and concluded that some had committed similar PSD violations. As a result, enforcement actions were brought and settlements were reached that required multiple facilities owned and operated by Louisiana Pacific, Georgia Pacific, and Willamette Industries to obtain PSD permits and install pollution controls in 1993,[51] 1996,[52] and in 2000.[53] Further, in 2000, EPA issued a Notice of Violation for alleged new source review violations to Boise Cascade, and entered into settlement negotiations.

The seminal decision on the issue of PSD applicability to modifications by electric utilities, however, is the Seventh Circuit's 1990 ruling in *Wisconsin Electric Power Company* v. *Reilly ("WEPCO").*[54] The WEPCO petitioners challenged the EPA's position that modifications intended to restore lost capacity at a coal-fired steam generating facility triggered new permitting requirements. The company wanted to renovate the plant so it could operate beyond its planned retirement date of 1992.[55] To that end, the company needed to repair or replace the turbine-generators, boilers, rear steam drums, air heaters, mechanical and electrical auxiliaries, and common plant support facilities. To make these repairs, the facility would have to take various units out of service for 9-month periods.[56] The court found that EPA was not arbitrary and capricious in considering the cost, magnitude, frequency, and nature of these repairs and upheld EPA's determination that these changes were not routine.[57]

One of the key disagreements between EPA and certain electric utilities relates to the Agency's enforcement of the CAA between the time of the WEPCO decision and the filing of the recent enforcement actions in 1999. In the early 1990's, EPA began to evaluate sources of significant pollution in a number of major industrial sectors. The EPA issued "Sector Notebooks" describing these industries and their various sources of pollution. In particular, Sector Notebooks were issued for the refinery industry in 1995 and for the fossil-fuel fired electric generating industry in 1997.[58]

In the mid- to late-1990's, EPA began investigations of several industrial sectors that were emitting high levels of pollution and that were suspected of possible new source review violations. These investigations focused on coal-fired power plants, refineries, steel mini-mills, wood products manufacturers, and pulp and paper manufacturers. As a result of these investigations, a number of referrals for judicial enforcement action were sent to the Department for consideration.

EPA began its investigation of the coal-fired electric utility industry in 1996. The Sgency sent information requests under CAA § 114[59] to a number of utilities, particularly in the Midwest and Southeast, seeking access to the power plants' facilities and their documents. EPA believed that the documents were necessary to ascertain the facilities' modification histories and to provide information that would allow EPA to conduct an emission increase analysis. After considering the utilities' records, EPA concluded that a large number of facilities had made modifications that triggered the new source review permit and pollution control requirements, but had failed to seek PSD permits or install pollution controls. EPA notified the companies and asked them to enter into settlements to cure these: violations without litigation. The facilities, however, strongly disputed EPA's allegations.

Beginning in 1999, EPA sent a number of referrals to the Department for civil judicial enforcement action against the owners and operators of some of the largest coal-fired power plants in the country, alleging widespread violations of new source review, NSPS, and "minor source" permitting and pollution control requirements. EPA had made no referrals pertaining to the electric utility industry prior to that time. The Department's Environmental and Natural Resources Division ("ENRD") reviewed and evaluated the information provided by EPA, conducted legal research into the basis for the proposed allegations, consulted with EPA and independent experts regarding the proposed legal and factual allegations, and concluded that the referrals should be filed as enforcement actions.

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[50] 682 F. Supp. 1141 (D. Colo. 1988).
[51] See *United States* v. *Louisiana Pacific,* No. CV 93–0869 (W.D. La. 1993).
[52] See *United States* v. *Georgia Pacific*, 960 F. Supp. 298 (N.D. Ga. 1996).
[53] See *United States* v. *Willamette*, No. CV 00–1001 HA (D. Or. 2001).
[54] 893 F.2d 901 (7th Cir. 1990).
[55] *See id.* at 906.
[56] *See id.* at 906–08.
[57] *See id.* at 913.
[58] These notebooks are available via the internet at http://es.epa.gov/oeca/sector.
[59] 42 U.S.C. § 7414 (1994).

After ENRD's review, the Department in November 1999 filed seven enforcement actions in U.S. District Courts against: (1) American Electric Power Co. (S.D. Ohio); (2) Ohio Edison and First Energy (S.D. Ohio); (3) Cinergy Corp. (S.D. Ind.); (4) Southern Indiana Gas & Electric Co. (S.D. Ill.); (5) Illinois Power Co. (S.D. Ind.); (6) Southern Company affiliates including Alabama Power Co. and Georgia Power Co. (N.D. Ga.); and (7) Tampa Electric Co. (M.D. Fla.). The complaints alleged that defendants made major modifications to their coal-fired power plants without applying for required new source review permits and installing required pollution controls. The complaints alleged violations at more than 25 power plants located in Ohio, Indiana, Illinois, West Virginia, Georgia, Alabama, and Florida. The complaints seek both injunctive relief and civil monetary penalties. The injunctive relief sought would require the facilities to remedy alleged past new source review violations by installing appropriate pollution control technology and by applying for permits.

Due to an adverse jurisdictional decision, Alabama Power Co. was dismissed from the case brought against subsidiaries of the Southern Company in *United States* v. *Alabama Power Co.*

TVA, et al. v. *EPA.* et al.

Consolidated Docket Nos. 00–12310-E, 00–12459-E, 00–12311-E, 00–12458-E, 00–12349-E, 00–12457-E, 00–15936-E, 00–16234-E, 00–16235-E, 00–16236-E (consolidated under lead Docket No. 0012310-E)

CERTIFICATE OF INTERESTED PERSONS

Pursuant to 11th Cir. Rules 26.1–1 through 1–3, 27–1(a)(9), and 28–1(b), Respondents Christine Todd Whitman, Administrator, United States Environmental Protection Agency, and the United States Environmental Protection Agency hereby list the following persons and entities that Respondents believe, based upon Respondents' knowledge or representations by such person or entity, may have an interest in the outcome of this case. Respondents have not listed persons or entities with regard to which Respondent has no direct indication of potential interest other than such person or entity having been listed on the Certificate of Interested Persons and Corporate Disclosure Statement of another party.

Alabama Power Company, Petitioner
American Chemistry Council, Amicii
John Ashcroft, U.S. Attorney General
Balch & Bingham LLP, Counsel for Alabama Power Company
R. Bruce Barze, Jr., Counsel for Alabama Power Company
Angelia Souder Blackwell, Counsel for Respondents
F. William Brownell, Counsel for the Tennessee Valley Authority
Margaret C. Campbell, Counsel for Georgia Power Company
Harriet A. Cooper, Counsel for the Tennessee Valley Authority
James C. Cope, Counsel for Petitioner TVPPA

STATEMENT REGARDING ORAL ARGUMENT

Respondent United States Environmental Protection Agency ("EPA") has raised substantial jurisdictional arguments both in its merits briefs and in its pending Motions to Dismiss, which were carried with the case for resolution by the merits panel. Given that the Court must satisfy itself of its jurisdiction as a prerequisite to review on the merits,[1] EPA has proposed that argument be structured to hear, first, full argument by the parties on the multiple jurisdictional issues, and to then hear full argument by the parties on the merits of this matter. *See* EPA Response and Cross Motion Regarding Format for Oral Argument, filed. Dec. 20, 2000.

STATEMENT OF JEFFREY HOLMSTEAD, ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Good morning Chairmen and members of the committees. Thank you for the opportunity to talk with you about the New Source Review (NSR) program under the Clean Air Act and the proposed improvements we have announced.

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[1] See *Steel Co.* v. *Citizens for a Better Env't,* 523 U.S. 83, 93–94 (1998) (courts must resolve jurisdictional issues before considering the merits of a dispute); *Region 8 Forest Service Timber Purchaser's Council* v. *Alcock*, 993 F.2d 800, 807 n.9 (11th Cir. 1993) (same).

There has been longstanding agreement among virtually all interested parties that the NSR program can and should be improved. For well over 10 years, representatives of industry, State and local agencies, and environmental groups have worked closely with EPA to find ways to make the program work better. In 1996, EPA proposed rules to amend several key elements of the program. In 1998, EPA sought additional public input on related issues. Since 1996, EPA has had countless discussions with stakeholders and has invested substantial resources in an effort to develop final revisions to the program. Between the 1996 proposal and January 2001, EPA held two public hearings and more than 50 stakeholder meetings. Environmental groups, industry, and State, local and Federal agency representatives participated in these many discussions. Over 600 detailed comments were submitted to EPA between 1992 and 2001.

In 2001, the National Energy Policy Development Group asked EPA to investigate the impact of NSR on investment in new utility and refinery generation capacity, energy efficiency and environmental protection. During this review, the Agency met with more than 100 groups, held four public meetings around the country, and received more than 130,000 written comments. EPA issued a report to President Bush on June 13 in which we concluded that the NSR program does, in fact, adversely affect or discourage some projects at existing facilities that would maintain or improve reliability, efficiency, and safety of existing energy capacity. This report lends strong support to the decade-long effort to improve the NSR program.

We now believe that it is time to finish the task of improving and reforming the NSR program. At the same time that we submitted our report to the President, we published a set of recommended reforms that we intend to make to the NSR program. These reforms are designed to remove barriers to environmentally beneficial projects, provide incentives for companies to install good controls and reduce actual emissions, specify when NSR applies, and streamline and simplify several key NSR provisions. We plan to move ahead with this rulemaking effort in the very near future. We look forward to working with you during this important effort.

BACKGROUND

The NSR program is by no means the primary regulatory tool to address air pollution from existing sources. The Clean Air Act provides authority for several other public health-driven and visibility-related control efforts: for example, the National Ambient Air Quality Standards (NAAQS) Program implemented through enforceable State Implementation Plans, the NOx SIP Call, the Acid Rain Program, the Regional Haze Program, the National Emissions Standards for Hazardous Air Pollutants (NESHAP) program, etc. Thus, while NSR was designed by Congress to focus particularly on sources that are newly constructed or that make major modifications, Congress provided numerous other tools for assuring that emissions from existing sources are adequately controlled.

The NSR provisions of the Clean Air Act combine air quality planning, air pollution technology requirements, and stakeholder participation. NSR is a preconstruction permitting program. If new construction or making a modification will increase emissions by an amount large enough to trigger NSR requirements, then the source must obtain a permit before it can begin construction. To obtain the permit, the owners must meet several requirements, including applying state-of-the-art control technology. States are key partners in the program. Under the Act, States have the primary responsibility for issuing permits, and they can customize their NSR programs within the limits of EPA regulations. EPA's role has been approving State programs and assuring consistency with EPA rules, the State's implementation plan, and the Clean Air Act. EPA also issues permits where there is no approved NSR program, such as on some Tribal lands.

The NSR permit program for major sources has two different components—one for areas with air quality problems, and the other for areas where the air is cleaner. Under the Clean Air Act, geographic areas, such as counties or metropolitan statistical areas, are designated as "attainment" or "nonattainment" for the NAAQS, which are the air quality standards used to protect human health and the environment. Preconstruction permits for sources located in attainment or unclassifiable areas are called Prevention of Significant Deterioration (PSD) permits and those for sources located in nonattainment areas are called nonattainment NSR permits.

A major difference in the two programs is that the control technology requirement is more stringent in nonattainment areas and is called the Lowest Achievable Emission Rate (LAER). In attainment areas, a source must apply Best Available Control Technology (BACT). The statute allows consideration of cost in determining BACT.

Also, in keeping with the goal of progress toward attaining the NAAQS, sources in nonattainment areas must always provide or purchase "offsets"—decreases in

emissions which compensate for the increases from the new source or modification. In attainment areas, PSD sources typically do not need to obtain offsets. However, under the PSD provisions, facilities are required to undertake an air quality modeling analysis of the impact of the construction project. If the analysis finds that the project contributes to ambient air pollution that exceeds allowable levels, the facility must take steps to reduce emissions and mitigate this impact. In addition to ensuring compliance with the NAAQS, States track and control emissions of air pollution by calculating the maximum increase in concentration allowed to occur above an established background level—that change in concentration is known as a PSD increment.

Another key requirement is the provision in the PSD program to protect pristine areas like national parks or wilderness areas, also referred to as Class I areas. If a source constructs or modifies in a way that could affect a Class I area, the law allows a Federal land manager, for example, a National Park Service superintendent, an opportunity to review the permit and the air quality analysis to assure that relevant factors associated with the protection of national parks and wilderness areas are taken into consideration, and, if necessary, that harmful effects are mitigated.

CURRENT STATUS OF THE NSR PROGRAM

Let me give you a few statistics about the NSR program to put things in perspective. Estimates based on our most recent data indicate that typically more than 250 facilities apply for a PSD or nonattainment NSR permit annually. The nonattainment NSR and PSD programs are designed to focus on changes to facilities that have a major impact on air quality.

EPA has worked for over 10 years to make changes to the NSR program to provide more flexibility and certainty for industry while ensuring environmental protection. In 1992, EPA issued a regulation addressing issues regarding NSR at electric utility steam generating units making major modifications. This is referred to as the "WEPCO" rule. And in 1996, EPA proposed to make changes to the existing NSR program that would significantly streamline and simplify the program. In 1998, EPA issued a notice of availability where we asked for additional public comment on several issues.

EPA held public hearings and more than 50 stakeholder meetings on the 1996 proposed rules and related issues. Environmental groups, industry, and State, local and Federal agency representatives variously participated in these discussions. Despite widespread acknowledgment of the need for reforms, EPA has not yet finalized these proposed regulations.

In May 2001, the President issued the National Energy Policy. The Policy included numerous recommendations for action, including a recommendation that the EPA Administrator, in consultation with the Secretary of Energy and other relevant agencies, review New Source Review regulations, including administrative interpretation and implementation. The recommendation requested EPA to issue a report to the President on the impact of the regulations on investment in new utility and refinery generation capacity, energy efficiency, and environmental protection.

In June 2001, EPA issued a background paper giving an overview of the NSR program. EPA solicited public comments on the background paper and other information relevant to New Source Review. In developing the final report responding to the National Energy Policy recommendation, EPA met with more than 100 industry, environmental, and consumer groups, and public officials, held public meetings around the country, and evaluated more than 130,000 written comments.

On June 13, 2002, EPA submitted the final report on NSR to President Bush. At that time, EPA also released a set of recommended reforms to the program. With regard to the energy sector, EPA found that the NSR program has not significantly impeded investment in new power plants or refineries. For the utility industry, this is evidenced by significant recent and future planned investment in new power plants. Lack of construction of new greenfield refineries is generally attributed to economic reasons and environmental or other permitting restrictions unrelated to NSR.

With respect to the maintenance and operation of existing utility generation capacity, there is more evidence of adverse impacts from NSR. EPA's review found that uncertainty about the exemption for routine activities has resulted in the delay or cancellation of some projects that would maintain or improve reliability, efficiency and safety of existing energy capacity. Reforms to NSR will remove barriers to pollution prevention projects, energy efficiency improvements, and investments in new technologies and modernization of facilities.

EPA announced that it intends to take a series of actions to improve the NSR program, promote energy efficiency and pollution prevention, and enhance energy security while encouraging emissions reductions.

These improvements include finalizing NSR rule changes that were proposed in 1996 and recommending some new changes to the rules. The 1996 recommendations and subsequent notice of availability were subject to extensive technical review and public comment over the past 6 years. EPA will conduct notice-and-comment rulemaking for changes not proposed in 1996.

Our actions are completely consistent with the strong public health protection provided by the Clean Air Act. The key provisions of the Clean Air Act include several programs designed to protect human health and the environment from the harmful effects of air pollution and all of them remain in place. Moreover, the changes that we make to the NSR program will be prospective in nature, and EPA will continue to vigorously pursue its current enforcement actions. Accordingly, EPA does not intend for its future rulemaking or proposed changes to be used in, or have any impact on, current litigation.

SUMMARY OF IMPROVEMENTS

Congress established the New Source Review Program in order to maintain or improve air quality while still providing for economic growth. The reforms announced last month will improve the program to ensure that it is meeting these goals. These reforms will:

• Provide greater assurance about which activities are covered by the NSR program;

• Remove barriers to environmentally beneficial projects;

• Provide incentives for industries to improve environmental performance when they make changes to their facilities; and

• Maintain provisions of NSR and other Clean Air Act programs that protect air quality.

The following NSR reforms, all of which were originally proposed in 1996, have been subject to extensive technical review and public comment:

• *Pollution Control and Prevention Projects.*—To encourage pollution control and prevention, EPA will create a simplified process for companies that undertake environmentally beneficial projects. NSR can discourage investments in certain pollution control and prevention projects, even if they are environmentally beneficial.

• *Plantwide Applicability Limits (PALs).*—To provide facilities with greater flexibility to modernize their operations without increasing air pollution, a facility would agree to operate within strict sitenwide emissions caps called PALs. PALs provide clarity, certainty and superior environmental protection.

• *Clean Unit Provision.*—To encourage the installation of state-of-the-art air pollution controls, EPA will give plants that install "clean units" operational flexibility if they continue to operate within permitted limits. Clean units must have an NSR permit or other regulatory limit that requires the use of the best air pollution control technologies.

• *Calculating Emissions Increases and Establishing Actual Emissions Baseline.*—Currently, the NSR program estimates emissions increases based upon what a plant would emit if operated 24 hours a day, year-round. This can make it difficult to make certain modest changes in a facility without triggering NSR, even if those changes will not actually increase emissions. This common-sense reform will require an evaluation of how much a facility will actually emit after the proposed change. Also, to more accurately measure actual emissions, account for variations in business cycles, and clarify what may be a "more representative" period, facilities will be allowed to use any consecutive 24-month period in the previous decade as a baseline, as long as all current control requirements are taken into account.

EPA also intends to propose three new reforms that will go through the full rulemaking process, including public comment, before they are finalized. These include:

• *Routine Maintenance, Repair and Replacement.*—To increase environmental protection and promote the implementation of routine repair and replacement projects, EPA will propose a new definition of "routine" repairs. NSR excludes repairs and maintenance activities that are "routine", but a multi-factored case-by-case determination must currently be made regarding what repairs meet that standard. This has deterred some companies from conducting certain repairs because they are not sure whether they would need to go through NSR. EPA is proposing guidelines for particular industries to more clearly establish what activities meet this standard.

• *Debottlenecking.*—EPA is proposing a rule to specify how NSR will apply when a company modifies one part of a facility in such a way that throughput in other

parts of the facility increases (i.e., implements a "debottlenecking" project). Under the current rules, determining whether NSR applies to such complex projects is difficult and can be time consuming.

• *Aggregation.*—Currently, when multiple projects are implemented in a short period of time, a detailed analysis must be performed to determine whether the projects should be treated separately or together (i.e., "aggregated") under NSR. EPA's proposal will establish two criteria that will guide this determination.

It is important to note that we are undertaking changes in the NSR program at the same time as we are moving forward on the President's historic Clear Skies Initiative. The Clear Skies Initiative is the most important new clean air initiative in a generation, and will cut power plant emissions of three of the worst air pollutants—nitrogen oxides, sulfur dioxide, and mercury—by 70 percent. The initiative will improve air quality and public health, protect wildlife, habitats and ecosystems. By using a proven, market-based approach, Clear Skies will make these reductions further, faster, cheaper, and with more certainty than the current Clear Air Act. In the next decade alone, Clear Skies will remove 35 million more tons of air pollution than the current Clean Air Act.

In summary, the NSR reforms will remove the obstacles to environmentally beneficial projects, simplify NSR requirements, encourage emissions reductions, promote pollution prevention, provide incentives for energy efficient improvements, and help assure worker and plant safety. Overall, our reforms will improve the program so that industry will be able to make improvements to their plants that will result in greater environmental protection without needing to go through a lengthy permitting process. Our actions are completely consistent with key provisions of the Clean Air Act designed to protect human health and the environment from the harmful effects of air pollution.

RESPONSES OF JEFFREY HOLMSTEAD TO ADDITIONAL QUESTIONS FROM SENATORS JEFFORDS AND LEAHY

Question 1. Please provide the Committee with an explanation of the differences between the regulatory proposals regarding New Source Review that were considered by the Clinton Administration and those that EPA is forwarding to the OMB for interagency review or plans to publish in final form.

Response. In 1996, the Clinton Administration proposed numerous changes to the existing New Source Review (NSR) regulations. We will be acting to finalize five of these changes to the regulations at this time. All five of these provisions will be within the scope of the 1996 proposal. In addition, we intend to propose, solicit public comment on, and eventually promulgate several other provisions, including a proposal to address "routine maintenance, repair and replacement" (RMRR). These provisions were not addressed in the 1996 proposal.

Question 2. In a briefing for congressional staff, EPA OGC personnel said that a tremendous amount of time and money is being spent on the NSR enforcement cases. Approximately how much time and money has been spent since those enforcement actions were announced?

Response. While EPA does not separately track enforcement expenditures for NSR, we have reviewed the level of effort involved in NSR enforcement since November 1999. We estimate that the Agency has invested more than 200 full-time equivalents (FTEs) in employee time, as well as over a million dollars in contract expenditures and over half a million dollars in travel expenditures to investigate, negotiate and prosecute all cases that have NSR components. This does not include the significant resources that DOJ expended on these cases.

It is worth noting that a significant portion of EPA's effort on NSR cases has been devoted to addressing discovery requests from defendants pursuant to prosecution of filed cases in court. Furthermore, the filing of the power plant suits in 1999 was the culmination of 2 years of effort by dozens of EPA Headquarters and Regional personnel, who investigated and developed the cases.

Question 3. In an interview on National Public Radio, Governor Whitman indicated that the announced NSR regulation changes ". . . are intended to get at the pollution from those dirty old power plants or those 'grandfathered' plants." Please explain how these changes will affect pollution, quantitatively and qualitatively, from these "grandfathered" facilities.

Response. In the Governor's interview with National Public Radio, she stated: "What we're proposing gets precisely at those plants that have not been successfully dealt with under the current program." In this comment, the Governor was referring to the Administration's Clear Skies Initiative. The Clear Skies Initiative sets strict,

mandatory emissions caps for three of the most harmful air pollutants—sulfur dioxide, oxides of nitrogen, and mercury. Clear Skies will cut power plant emissions of these pollutants by 70 percent, eliminating 35 million more tons in the next decade than the current Clean Air Act.

Question 4. How many facilities are potentially covered by NSR's major source category, and minor source category? Please specify industry sector, and the total emissions from those covered facilities.

Response. EPA does not have comprehensive data regarding the number of major and minor NSR sources in the country or total emissions from these sources. We know that there are close to 19,000 sources subject to title V. These 19,000 sources include all major NSR sources and some minor NSR sources. In addition, there are many more minor sources that are not subject to title V.

Question 5. How many utilities are not required currently to apply New Source Performance Standards to their facility by the Clean Air Act? Please provide their generation capacity and the tons of pollutants emitted for each in the latest year.

Response. EPA is working to provide a data base listing units that were not subject to NSPS when they came on line. EPA does not maintain a data base that lists all utility units not subject to the NSPS. We will provide this information and any necessary followup information as soon as possible.

Question 6. How many tons of pollution has the New Source Review program, including Prevention of Significant Deterioration, prevented, either through application of technology, process changes to avert major source category status, or other means, since it's inception?

Response. Please see the response to question number 7.

Question 7. How many tons of pollution do the NSR and PSD programs prevent or control annually?

Response. EPA does not have a current official estimate of the number of tons of pollution prevented or controlled annually by the NSR and PSD programs.

Question 8. EPA's 90-day report on NSR indicates that companies go to great lengths to avoid triggering NSR. If EPA believes the principle reason is potential cost of pollution controls, please provide a discussion of the control costs per ton of pollutant for various types of facilities where NSR might apply.

Response. The 90-day NEP review found that NSR is having an adverse impact on investment in existing utility and refinery capacity for some of the following reasons. The cost of offsets and pollution control technology is certainly one factor. For example, in California, one facility incurred costs for offsets of more than $100,000 per ton of NOx when NSR was triggered. Facilities also try to avoid NSR because NSR permitting can delay the implementation of projects. It takes anywhere from a few months to, on occasion, a couple of years to get an NSR permit, and additional time is required to prepare the permit applications. Because a permit must be obtained before construction can commence, projects sometimes are delayed by the permit process. For example, in the semiconductor chip industry, entire generations of technology span periods of only a few months. In such circumstances, a permitting delay of a few months could serve as an insurmountable obstacle. Another important factor is certainty. It is often difficult to predict the specific control measures or other requirements that ultimately are imposed by an NSR permit and this uncertainty can impact project planning.

Question 9. Please provide a table showing the performance standards for new stationary sources as required to be developed under section 111(b) of the Clean Air Act, and the relevant timetable for reviewing and revising, as appropriate, those standards.

Response. The NSPS currently applicable to electric utility steam generating units are presented below. For each of the pollutants, there may be certain additional requirements for specific cases (e.g., anthracite coal, noncontinental area) but these limits are those that are most widely applicable. Section 111(b)(1)(B) provides that the "Administrator shall, at least every 8 years, review and, if applicable, revise such standards . . ." The Administrator need not review any NSPS "if the Administrator determines that such review is not appropriate in light of readily available information on the efficacy of such standard." The date of last review of each of the standards is also shown in the table.

Electric Utility Steam Generating Units; 40 CFR Subpart Da

Pollutant	Emission limit	Last reviewed
Particulate matter:		
Solid, liquid, or gaseous fuel	0.03 lb/MMBtu	June 11, 1979
Sulfur dioxide:		
Solid fuel	1.2 lb/MMBtu and 90 percent reduction OR 0.6 lb/MMBtu and 70 percent reduction [a].	June 11, 1979
Liquid or gaseous fuel	0.8 lb/MMBtu and 90 percent reduction OR 0.6 lb/MMBtu[a].	June 11, 1979
Nitrogen oxides:		
Solid, liquid, or gaseous fuel	0.15 lb/MMBtu[a]	September 16, 1998

[a]30-day rolling average

Question 10. If New Source Performance Standards were applied to all electric generating facilities above 25 MW, how many tons of pollutants (NOx, SOx, $PM_{2.5}$) would be reduced? What would be the average cost per ton and most common control technologies?

Response. Emissions of SO_2 from coal-fired electric generating facilities in 2000 were estimated to total 10,708,692 tons. Estimated emissions if all units met the current NSPS are 3,397,662 tons. Information is not readily available on emissions of NOx and fine particulate matter ($PM_{2.5}$) should all electric generating facilities meet the applicable NSPS levels. The control technologies used to meet the NSPS would be flue gas desulfurization (FGD) units, both wet and dry, for coal-fired units and low-sulfur oil for oil-fired units. Control technologies used to meet NSPS levels for PM would be electrostatic precipitators (ESP) for oil- and coal-fired units and fabric filters for coal-fired units. Technologies used to meet NSPS levels for NOx would be low-NOx burners, selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) for all types of units. Information is not readily available to determine the average cost of pollutant ton removed should every electric generating facility meet the applicable NSPS.

Question 11. Connecticut's NSR program is currently more stringent than the Federal equivalent. What is EPA's position with respect to reconciling elements of their proposal with that program, and is EPA going to require states to revise their NSR programs to mirror the Federal program, even in cases where the state program remains more stringent?

Response. EPA believes that its final rules will significantly improve the NSR program. We will include these rules in our base NSR programs and we will encourage States to adopt these changes into their own programs. We think that most States will want to make these changes. However, any State may depart from our base program as long as it demonstrates that its program is at least as effective as our base program.

Question 12. In its 1996 proposal, EPA clearly indicated that the program elements (e.g. PALs and Clean Unit Exemption) would be in such a form that states could adopt none, some or all of the elements. The proposal did not imply that states would have to "demonstrate" their programs were equal to or more stringent without some or all of these new "elements". Is this still the case?

Response. Over the past 10 years, we have been involved in an extensive stakeholder process in an effort to reform the existing NSR regulations. There has been general agreement among most of these stakeholders that the regulations can and should be improved. The final NSR rules that we hope to finalize in the near future are the product of this decade-long effort. We believe that these rules will, in fact, significantly improve the program. Thus, we will include these rules in our base NSR program and will be encouraging States to adopt these changes into their own programs. We think that most States will want to make these changes. However, any State may depart from our base program as long as it demonstrates that its program is at least as effective as our base program.

Question 13. Given that the Administration considered changes will result in fewer modifications being subject to NSR, would State/locals have to submit SIP revisions at all?

Response. We believe that our final rules will add new incentives for reducing emissions to States' NSR programs and eliminate existing disincentives to maintain higher levels of emissions. For example, under a plantwide applicability limit (PAL),

a facility would accept strict plantwide emissions caps and then may choose where to apply the most cost effective controls (achieving the highest possible emission reductions for the lowest cost). Morever, facilities with PALs will have a strong incentive to keep actual emissions well below their caps in order to maximize operational flexibility under the cap. Under the Clean Unit Test, a facility is encouraged to install state-of-the-art emission controls. We believe many who would not otherwise be subject to the modification provisions will install controls to gain the added flexibility under PALs and the Clean Unit test. These examples show that the total benefits of the NSR program cannot be accurately measured solely by the number of modification permits that are issued; we must also consider others ways in which the program encourages emission reductions.

Question 14a. EPA's proposed changes to the baseline calculation will allow for a baseline equal to a plant's highest usage in the last 10 years. How will this improve air quality?

Response. To begin, we believe that it is important to correct an apparent misconception that many stakeholders continue to hold about this option. The misconception is that the option would apply to all industry types. We do not currently intend to apply the 10-year baseline to the utility industry because an industry specific baseline was established for the utility industry in the 1992 "WEPCO" rule.

The baseline calculation is an integral part of the procedure for determining whether a physical or operational change made to an existing emissions unit will result in a significant net emissions increase at the facility. We are currently considering an approach under which the 10-year baseline would allow a source to identify a level of operation that it has actually achieved during the course of its normal business cycle (within which emissions typically fluctuate), and to calculate an emissions baseline associated with that level of operation as long as the resulting emissions level continues to be allowed under currently enforceable emissions factors. If the emissions level, in tons per year, under the selected level of operation is not currently allowed (for example, a more stringent limit has been placed on the sulfur content of fuel or a control device has been installed), then a downward adjustment to the emissions must be made accordingly.

While the existing regulations require that the preceding 2 years be used for calculating the baseline emissions, the permitting authority has the ability to determine that another period is more representative of normal operation. This could conceivably result in a look back of 10 years or more in certain cases. However, this approach typically involves case-by-case determinations that have resulted in confusion, inconsistent implementation and lengthy debates as to the most appropriate period of time to select in any particular case. EPA's new approach would provide a bright line for facility owners and operators to use to determine their baseline emissions.

It is also worth noting that the new approach, involving the selection of a consecutive 24-month period within the preceding 10 years, represents a more stringent approach than the 12-month period in the preceding 10 years proposed during the previous Administration. By averaging a source's annual emissions over a 24-month period, rather than a 12-month period, short-term peaks are less influential in calculating the baseline emissions rate.

Question 14b. Should the baseline for emissions in nonattainment areas be designed to decline in future years to help provide attainment?

Response. We think that baseline for emissions in nonattainment areas should not automatically be designed to decline in future years. Instead, States must have the discretion to determine where future emissions reductions will be required from one source to the next. This decision will be based on the nature and extent of the nonattainment problem in a particular area. State and local air pollution control authorities are in the best position to determine which sources need to be controlled and which control measures should be applied.

Question 15. EPA's proposal will allow sources to establish an emissions baseline with a test that considers any 2 years out of the previous 10 as representative. As many sources have substantially reduced their emissions in the last 10 years, in cases where this mechanism is granted, how is EPA going to evaluate the effect on State SIPs where emissions increase as a result of these proposed baseline changes?

Response. A source's emissions may have been reduced through the imposition of more stringent emissions limits (including new pollution control devices) or by specific operating restrictions (e.g., restrictions on fuel use, hours of operation, etc.) In either case, as mentioned in the response to question No. 14, the calculation of the source's baseline emissions, under the approach we are currently considering, must take into account these current factors. Thus, when a source selects a particular 24-

month period within the last 10 years to define its representative operations, it must also factor in the most current emission limits and operating restrictions.

Question 16. Why is it necessary to provide a 10-year window to establish actual emissions baselines? Why is it better than defaulting to the previous 2 years, and giving the States the discretion to adjust this period when it is demonstrated that it is not representative?

Response. The typical industry business cycle involves recurrent ups and downs in level of economic activity over a period of several years. To determine the length of a reasonable look back period, we contracted a study to determine the length of a typical business cycle for a number of industry categories. Based on this study, we determined that a 10-year look back would adequately cover the business cycle for any industry in the study. Further, we determined that a consecutive 24-month period (rather than the 12-month period originally proposed) within the 10-year look back would appropriately capture the source's average annual operating level and emissions rate. By averaging the source's operation over a 2-year period, rather than using just 12 months of operating history, unusually high peaks occurring during a short period will not skew the result.

We believe that the use of a uniform 10-year look back period will help simplify the process and eliminate questions that can occur when an applicant and the permitting authority have to determine on a case-by-case basis what timeframe provides the period "most representative of normal source operation." The new requirements also provide certainty to the look back period, since there is no opportunity to select another period of time outside this 10-year period. In addition, we have placed certain restrictions on when the full 10-year look back period may be used. That is, the source must have available in its records adequate data for the particular 24-month period that is selected. This data must be used for calculating the average annual emissions that form the basis for the baseline actual emissions. In addition, the baseline emissions rate must be adjusted downward to reflect emissions or operational limitations adopted in the interim.

Question 17. With a non-declining PAL, how does air quality ever improve? Has EPA thought about ways to maintain the incentive for voluntary early reductions while not locking in current emission levels indefinitely?

Response. Until such time as the NSR Reform rulemaking package is published, it would be premature to describe specific attributes of the new PAL system; however, we have received comments similar to your question and will be considering them as we move forward.

Question 18. If each company can select whether to use a PAL or not, won't each company choose the option that minimizes the chances of triggering NSR? Won't that result in increased emissions as compared to the State choosing one approach or the other?

Response. We do not believe that companies will not select an option solely based on the chances of triggering NSR under that option. In a study of sources with PALs, EPA found that those sources lowered their emissions.

Question 19. For a State that decides to require all facilities to use a PAL, many of the other changes are not relevant. Will the rules make it clear which changes do not apply under the PAL?

Response. We expect that few States will require all sources to use the PAL program. For States that decide to do so, EPA agrees that sources with PALs would generally not seek or be subject to any of the other changes. We intend to finalize all the changes identified in our Recommendations Report as part of our base program; however, States that require all sources to have a PAL will have the opportunity to depart from the base program upon a showing that their programs are equivalent to or more stringent than the base program.

Question 20. Why is it necessary to add an "operating margin" up to the significance level (e.g., 25 TPY in a severe ozone nonattainment area) when setting a PAL?

Response. Until such time as the NSR Reform rulemaking package is published, it would be premature to describe specific attributes of the new PAL system; however, we have received comments similar to your question and will be considering them as we move forward.

Question 21. Why is it appropriate to make the Clean Unit test retroactive? If the argument for clean units is premised upon creating incentives to control, why are incentives needed for units that controlled up to 10 years ago and have already installed good controls?

Response. We will not be applying the Clean Unit Test retroactively. Although emissions units that have applied state-of-the-art controls in the past may qualify to use the test after the effective date of the final rules, the test will only be used to determine whether future changes at the unit will result in an emissions increase. Any changes that were made at such emissions units before the effective date of the final rules will be subject to the NSR requirements as they existed at the time of the change.

Moreover, although the creation of incentives for sources to install controls is an important part of the clean unit test, it is not the sole basis for it. The clean unit provision also makes sense because it avoids the need for sources with state-of-the-art controls to engage in an NSR review that ultimately would not require the installation of better controls. Also, it reduces the burden on permitting authorities of having to process permit applications that we believe will result in no additional control.

Question 22. Given that the purpose of the clean unit exclusion is to exempt from review units where current technology would not achieve reductions beyond existing technology, what is EPA's basis for allowing such a long exclusion period (i.e., up to 15 years)? Why is a look-back period necessary at all?

Response. The clean unit duration is based on a combination of the average life expectancy of control equipment (as published in engineering journals) and the improvement in control equipment performance over a given period of time. For example, using existing information about the control efficiency of flue gas desulfurization (FGD), we can see that in a period of about 20 years, the removal efficiency of the device has only improved marginally. As a result, a FGD system that was installed 10 years ago, would still be achieving good reductions and it would not be justifiable to replace it with a very costly unit that would only improve pollutant removal efficiency by only a small amount.

Question 23. Why does it make sense to define routine maintenance based on the percent of capital costs, as opposed to the function of the construction? How can EPA reconcile allowing a source to spend hundreds of millions of dollars over the course of 4–5 years, increase emissions significantly, and still not trigger NSR and the installation of controls?

Response. EPA will be in a better position to address these issues after the rulemaking package has been published. At that time the Agency will also be seeking public comment on the proposal.

Question 24. Why isn't the amount of emission increases considered in the Administration's development of a new definition of routine maintenance?

Response. The Clean Air Act provides that, for existing sources, NSR applies only to projects that constitute a physical change or change in the method of operation. By definition, routine maintenance projects are not physical changes or changes in the method of operating, therefore, such projects are not subject to NSR.

Question 25. According to EPA's proposed recommendations, "the changes are intended to provide greater regulatory certainty, administrative flexibility and permit streamlining, while ensuring the current level of environmental protection and benefit derived from the program." This statement seems counter-intuitive in that with fewer new emission units installing state-of-the-art emissions controls, it seems logical that emissions will increase. What data are available to show that the proposed changes will indeed ensure the current level of environmental protection? How is less control better for the environment?

Response. The data EPA has accumulated during the 10-year rulemaking effort will be placed in the docket.

Question 26. A number of the proposed NSR changes will result in modifications that were previously subject to NSR no longer being subject. These include pollution control projects; projects on clean units; modifications on units with high emissions in the past but low actual emissions today; projects that don't plan to use all of their capacity initially; projects that are less than a certain percent of the cost of replacing the plant; projects that allow downstream units to increase production; and projects that are separated into independent parts. EPA claims that the changes remove disincentives in the NSR program, but has not produced hard evidence that the cumulative effect of the disincentives is greater than the cumulative effect of the exemptions. Is EPA prepared to present solid information to substantiate their claims?

Response. The final rule will be fully supported by an extensive public record as a matter of fact, policy and law. The reforms we intend to finalize in the near future have been the subject of 10 years of analysis and public comment. These rulemakings are well-founded. The facts and information that have been accumu-

lated during the 10-year rulemaking effort will be available in the rulemaking docket.

Question 27. If these projects are exempted from NSR application through the proposed changes, does EPA plan to require the exempted sources to at least evaluate the air quality impact of the emission increases and address them if needed to ensure no impact on NAAQS, increments or visibility?

Response. We do not agree that our planned changes will result in increased impacts on NAAQS, increments, or visibility as compared to the current program. The proposed changes do not alter existing requirements that provide States with ample authority to ensure protection of the NAAQS, increments and visibility.

Question 28. How does EPA's plans to revise NSR ensure that reductions in stack heights or reductions in stack gas temperature will not cause adverse local impacts?

Response. The existing NSR program contains only one provision specifically addressing stack height. We do not plan to change this requirement. The current program does not specifically address exit gas temperature. A project involving only a stack height change and/or an exit gas temperature change almost always will be regulated under State or local "minor" NSR programs. This will remain the case after our reforms are promulgated.

Question 29. Will a modification that increases actual hourly or daily emissions be modeled and proven to cause no adverse air quality impacts before the modification is done?

Response. Under the current NSR program, emissions increases are measured on a ton-per-year basis. We do not plan to change this aspect of the program.

Question 30. How will States identify and correct air quality or public health problems that occur due to major modifications that have been exempted from NSR by the EPA proposed changes? Will this be more expensive and time-consuming than addressing these matters prior to modifications?

Response. As explained in the response to question 13, we believe that the new NSR regulations will create additional incentives to reduce emissions and eliminate the disincentives under the current program that prevent facilities from undertaking emission reduction projects. We do not expect the new regulations to result in added air quality or public health problems.

Question 31. Recently, experts have estimated that direct emissions of fine particulate matter from coal-fired power plants are being underestimated significantly, perhaps by a factor of 10. This is not surprising because there is so little testing of particulate emissions from coal-fired power plants and what testing there is reflects optimal operation of the plant. This is a public health concern because those particulate emissions are mostly fine particulates and because they contain heavy metals that are carcinogenic, as well as particulate organic matter, which is also carcinogenic. All these factors contribute to the adverse health effects of the fine particulates in our air.

The major modification provisions of the New Source Review program currently address particulate emissions. If existing NSR rules are enforced, companies would improve the control of particulates to meet the best available control technology requirements of NSR. This was demonstrated in the EPA settlement with PSEG in New Jersey where a baghouse is being added to the Hudson Generating Station to improve particulate control. How does EPA plan to address direct emissions of particulates from coal-fired power plants through the regulatory process, if EPA's proposed changes eliminate or substantially reduce the applicability of NSR to existing power plants?

Response. EPA will be in a better position to discuss specific NSR changes applicable to power plants when the NSR rulemaking packages have been published. We also note that we believe the President's Clear Skies proposal provides an efficient and effective mechanism for substantially reducing fine particle pollution from coal-fired power plants to levels far below those that NSR could ever currently accomplish. We encourage Congress to enact the Clear Skies Legislation expeditiously.

Question 32. The preamble to Part 70 Title V Operating Permits states: "Once a PAL is established, a change at a facility is exempt from major NSR and netting calculations, but could require a Title V permit modification, as could any other change. Whether a Title V permit modification would be required, and which permit modification process would be used, is governed by the current part 70 rule as implemented by the permitting authority." What is the effect of the proposed NSR changes on the Title V program? Is it possible for a plant to make changes exempted by the NSR reforms and yet be prohibited from operating the new or modified units until changes were made to the Title V permit?

Response. The NSR reforms that we plan to implement will not result in any change to our Part 70 and Part 71 operating permits programs. If a particular activity in a plant does not trigger NSR, it may nevertheless be subject to other CAA applicable requirements, such as a Section 112 "MACT" standard. The applicability of other requirements could trigger the need for a Title V permit revision, even though NSR is not triggered.

Question 33. To what extent will seasonal programs, like the NOx SIP Call, be considered in the proposed changed rules for baseline calculations, PAL's and clean units (where controls are not operated year round)?

Response. The new requirements provide that the emissions baseline for calculating the emissions increase resulting from a modification cannot exceed the emissions level that would occur under currently enforceable emissions limitations. Thus, the new procedures require that the calculation of baseline emissions for a modification must consider current Federal and State restrictions, as well as enforceable limits resulting from voluntary reductions. Assuming that the utilization level selected from any consecutive 24-month period is still allowed, this level would be used along with current emissions limits and operational restrictions to calculate an adjusted emissions baseline.

Question 34. EPA is proposing to provide a 10-year window to establish actual emission baselines, where a source can use the 2-year high value during that period. Yet, when a State performs its photochemical modeling as part of the SIP process, it uses current actual emission rates from existing sources. Such modeling would continue to use current actual emission rates even though for NSR purposes sources may now use the 2-year high over a 10-year past period to represent baseline. Has EPA considered requiring those States that elect to adopt the 10-year window in its regulations, to use the higher baseline values in its photochemical modeling to ensure consistency in its planning process?

Response. We do not plan to change the emissions baseline for calculating source impacts. The purpose of selecting a different actual emissions baseline for NSR applicability purposes is to better determine the amount of any increase that will result only from the change itself.

Question 35. For the Clean Unit Exemption, EPA is presuming that a control technology approved within 10 years will generally be the same as a current control technology determination. Yet 10 years ago combustion technologies could achieve 9 ppm NOx for large turbines and 25 ppm NOx for small turbines. Today, catalytic combustion technologies have dropped these emissions down to approximately 3 ppm. Why is EPA making its presumption in the face of such contradictory evidence?

Response. EPA is not presuming that the control technology determination made within the past 10 years will generally be the same as the current control technology determination. We expect the state-of-the-art to continue to progress, but generally not at a rate that would require a source to upgrade its current controls if the source had initiated state-of-the-art controls within the prior 10 years (i.e., it is likely that no additional control requirements would be required in a PSD determination because the incremental and average cost effectiveness between the current level of control and retrofitting to achieve a greater level of control are likely to be determined to be too high compared to the added environmental benefit). In addition, we also based the timeframe for which an emissions unit is eligible to use the clean unit test on the average life expectancy of pollution control equipment. It is reasonable to allow the clean unit test for the average length of time it takes industry to recoup the capital investment in the controls.

Question 36. Comments Opposing or Supporting Administration's NSR Changes.—In your announcement of the Administration's intended changes to the NSR regulations, you stated that the "reforms" being adopted by the Administration enjoyed "broad-based support." EPA materials also implied that previous statements from Governors and State environmental commissioners offered support for the reforms being pursued by the Administration.

For the following specific changes to the NSR regulations announced by the Administration, please identify all comments or statements supporting those specific changes submitted by Governors; State environmental commissioners; any other State officials or their representatives, especially State air program officials; and environmental and public health organizations. Please quote the specific passages supportive of each respective change below and identify the author(s) of those passages. Separately, please identify any comments or statements from these same parties opposing these changes or similar changes.

Finally, please identify all comments or statements supporting those specific changes submitted by industry representatives, following the same format as above. If there are numerous industry comments that are responsive, you may provide a representative selection. However, if you do so, please provide information on the group from which the representative selection was taken (for example, "These comments represent comments made by approximately 50 petroleum refining companies.")

A. Plantwide Applicability Limits (PALs):

(ix) An actual emissions baseline based upon "the highest consecutive 24 month period within the immediately preceding 10 years, taking into account the current emissions factor (which would reflect emissions limitations, other required emissions reductions, and permanent shutdowns since the baseline period) in combination with the utilization level from the 24-month time period selected."

(x) A 10-year term for a PAL, in attainment or nonattainment areas.

(xi) A PAL that remains static during the 10-year term, i.e., one whose plantwide cap is not required to decline during its term.

(xii) A PAL that does not require installation of pollution controls qualifying as BACT or LAER (or their equivalents) on emissions units covered by the PAL.

(xii) The ability to increase a PAL's cap levels provided EPA's criteria are met.

(xiv) Requiring States to provide for PALs in their State implementation plans.

B. Clean Unit Exclusion:

(i) Eligibility for the exclusion based upon whether an emissions unit has undergone "a valid BACT/LAER process or State minor source BACT since 1990."

(ii) Ability of significant emissions increases to escape new source review and further control for a period of 10 years, or a period of 15 years.

(iii) Eligibility for the exclusion based upon whether an emissions unit "installed Maximum Achievable Control Technology (MACT), Reasonably Available Control Technology (RACT) or undertook pollution prevention that required capital expenditures . . ., provided the results are determined to be comparable to BACT or LAER that would have been employed at the time the control measures or devices were originally installed."

(iv) Eligibility for the exclusion based upon whether sources "invest capital to purchase equipment or implement processes that are inherently clean or lower emitting and which achieve emission reductions comparable to BACT or LAER at the time the investment was made."

(v) Requiring States to include the Clean Unit Exclusion in their State implementation plans.

C. Pollution Control and Prevention Project Exclusion:

(i) A source's ability to qualify for the exclusion merely by providing notice to the permitting authority and "maintaining records supporting the source's determination onsite."

(ii) The ability of pollution prevention projects to qualify for this exclusion.

(iii) Requiring States to include the pollution control and prevention project exclusion in their SIPs.

D. Actual to Projected Future Actual Methodology:

(vi) The concept of a demand growth exclusion, including making this exclusion available for non-utilities and continuing to make it available for utilities.

(vii) Allowing sources owners or operators to determine themselves whether an activity resulted in a significant net increase in emissions, without requiring the permitting authority to be involved.

E. Emissions Baseline:

For sources other than electric utility steam generating units, an "actual" emissions baseline based upon "the highest consecutive 24-month period within the immediately preceding 10 years, taking into account the current emissions factor (which would reflect emissions limitations, other required emissions reductions, and permanent shutdowns since the baseline period) in combination with the utilization level from the 24-month time period selected."

Response. There is nearly universal agreement among stakeholder groups that the NSR program should be reformed. Thus, the Administrator articulated that the NSR reform effort enjoys a "broad-based support." This does not mean that all stakeholders agree with all aspects of the reform effort.

A complete summary of all the comments we received and our responses to them will be available when we finalize the regulations. We currently are working to fin-

ish this "response to comments" document. We would be happy to provide you with a copy when it is finalized. In the meantime, please refer to the complete set of the comments we received on the NSR proposed rules provided to you previously.

Question 37. Statutory Authority.—For the specific issues and measures listed below, please quote all words in the Clean Air Act that provide legal authority to EPA to adopt the announced changes to NSR regulations—final and proposed—implementing the statutory PSD and nonattainment NSR programs of the Act. Provide statutory citations for these quotations as well. Finally, explain any other legal authorities upon which EPA is relying to adopt the Administration's announced changes to NSR and PSD rules, policies, or interpretations. Please ensure that the responses follow the numbering system below.

A. Plantwide Applicability Limits (PALs):

(viii) The concept of PALs.

(ix) An emissions baseline for PALs based upon "the highest consecutive 24 month period within the immediately preceding 10 years, taking into account the current emissions factor (which would reflect emissions limitations, other required emissions reductions, and permanent shutdowns since the baseline period) in combination with the utilization level from the 24-month time period selected."

(x) A 10-year term for a PAL, in attainment or nonattainment areas.

(xi) A PAL that remains static during the 10-year term, i.e., one whose plantwide cap is not required to decline during its term, for example, to reflect installation of BACT and LAER that otherwise would be required for modifications that occur at the source.

(xii) A PAL that does not require installation of pollution controls qualifying as BACT or LAER (or their equivalents) on emissions units covered by the PAL.

(xiii) The ability to increase a PAL's cap levels provided EPA's criteria are met.

(xiv) Renewal of a PAL, and requirements governing that process.

(xv) The likelihood that a PAL could be renewed at the end of 10 years without being reevaluated, even if the level of the PAL was based on actual emissions from up to 20 years previously.

(xvi) The likelihood that a facility located in a serious or severe ozone nonattainment area could, with a PAL, increase emissions of ozone precursors more than 25 tons over a 5-year period.

(xvii) Requiring State implementation plans to allow PALs.

B. Clean Unit Exclusion:

(i) The concept of the clean unit exclusion.

(ii) Eligibility for the exclusion based upon whether an emissions unit has undergone "a valid BACT/LAER process or State minor source BACT since 1990."

(xviii) Ability of significant emissions increases to escape new source review and further control for a period of 10 years, or a period of 15 years.

(xiv) Eligibility for the exclusion based upon whether an emissions unit "installed Maximum Achievable Control Technology (MACT), Reasonably Available Control Technology (RACT) or undertook pollution prevention that required capital expenditures . . . , provided the results are determined to be comparable to BACT or LAER that would have been employed at the time the control measures or devices were originally installed."

(xx) Eligibility for the exclusion based upon whether sources "invest capital to purchase equipment or implement processes that are inherently clean or lower emitting and which achieve emission reductions comparable to BACT or LAER at the time the investment was made."

(xxi) The apparently self-implementing nature of this exclusion.

(xxii) Requiring States to provide for the Clean Unit Exclusion in their State implementation plans.

C. Pollution Control and Prevention Project Exclusion:

(i) The concept of the pollution control and prevention project exclusion.

(ii) The exemption from new source review of pollution control and prevention project physical changes or changes in the method of operation that result in emissions increases above the significance threshold.

(xxiii) A source's ability to qualify for the exclusion merely by providing notice to the permitting authority and "maintaining records supporting the source's determination onsite."

(xxiv) The eligibility of pollution prevention projects for this exclusion.

(vi) Requiring States to provide for the pollution control and prevention project exclusion in their State implementation plans.

D. Actual to Projected Future Actual Methodology:

(i) The concept of a demand growth exclusion, including making this exclusion available for non-utilities and continuing to make it available for utilities.

(ii) Allowing sources owners or operators to determine themselves whether an activity resulted in a significant net increase in emissions, without requiring the permitting authority to be involved.

E. Emissions Baseline:

For sources other than electric utility steam generating units, an "actual" emissions baseline based upon "the highest consecutive 24 month period within the immediately preceding 10 years, taking into account the current emissions factor (which would reflect emissions limitations, other required emissions reductions, and permanent shutdowns since the baseline period) in combination with the utilization level from the 24-month time period selected."

F. Routine Maintenance, Repair and Replacement Safe Harbor:

(i) The concept of the routine maintenance, repair and replacement exemption as it exists under current EPA regulations, as an exemption from consideration as a "modification" under the NSR program. Please reference in your response any relevant documentation, including applicability determinations, guidance documents, statements made by Agency representatives in litigation, briefs or memoranda of law filed with a court, etc.

(ii) The concept of the routine maintenance, repair and replacement safe harbor announced by the Administration, as a threshold for exclusion from consideration as a "modification" under the NSR program.

(iii) The concept of the routine maintenance, repair and replacement safe harbor as a threshold for exclusion from consideration as a "modification" under the New Source Performance Standard (NSPS) program.

(iv) For the NSPS program, the "capital replacement value of an affected source [as] a relevant basis for determining the need for installing modern pollution controls when a project is implemented."

(v) For the NSPS program, an exclusion for projects that "increase utilization at an affected source if they come below 'annual asset guideline repair allowance' percentage thresholds (defined by the IRS for specific industry categories) ranging from 1.5 to 15 percent."

(vi) Whether "the aggregate cost of maintenance expenses and capital repair and replacement projects" for relevant units exceeding specified dollar thresholds is a basis for not subjecting emissions increases from those activities to NSR.

(vii) Whether such an NSR safe harbor may be based upon "annual dollar cost thresholds, averaged on a rolling basis over a 5-year period (except where maintenance cycles in a particular industry dictate a different period) established for entire utility stationary sources and refinery and other industry processing and production units . . . ."

(viii) EPA's basis for excluding from this calculation costs incurred for installing and maintaining pollution control technology.

Response. The legal basis for the final and proposed rules that EPA plans to issue in the next few months will be set forth in the preambles to the Federal Register notices for those rules.

Question 38a. Internal EPA Disagreements Over Directions of Administration NSR Rule Changes.—In January of this year, EPA staff prepared several charts detailing a series of topics and elements associated with PALs; the clean unit exclusion; and a revised "major modification" test for existing emissions units. The charts set forth the initial directions by EPA's Office of Air and Radiation (OAR) concerning these topics or elements; identified "Resolved and Non-Elevation Issues"; and "Issues That Need Resolution." This last category, in turn, set forth areas of serious disagreement among OAR, EPA's Office of Enforcement and Compliance Assurance (OECA), and EPA's Office of General Counsel (OGC) about the legality, validity and consequences of OAR's initial directions. In an alarming number of instances, OECA or OGC raised highly troubling objections to the legal basis for certain of those directions, or to the air quality harms that would result from those directions. Based upon a comparison between the issues and objections in these charts, on one hand, and the intended changes to the NSR rules recently announced by the Administration on the other, it appears that the Administration has ignored, overridden or otherwise rejected the objections reflected in these charts.

In light of the very serious concerns reflected in these documents, which go the heart of whether EPA is correctly carrying out its statutory responsibilities, and implementing the NSR program requirements in a way that best protects the nation's air quality and public health, respond to the following questions. For ease of ref-

erence and where relevant, the questions are followed by page numbers on these charts where the issues are discussed.

Identify all current or former EPA staff that participated in the meetings that resulted in the creation of these charts, including the offices for which these staff work or worked. Also identify the staff that contributed to the creation of these charts.

Response. The following is a list of EPA staff (SES and political) who participated in the meetings resulting in the creation of the referenced NSR summary charts:

William Harnett, division director, Information Transfer and Program Integration Division, Office of Air Quality Planning and Standards.

Bruce Buckheit, director, Air Enforcement Division, Office of Enforcement and Compliance Assurance.

Alan Eckert, principal associate general counsel, Office of General Counsel.

William Wehrum, counsel to the assistant administrator, Office of Air and Radiation.

Question 38b. Plantwide Applicability Limits (PALs). (i) Legal rationale:

(a) Is the PAL approach planned for adoption by EPA consistent with OGC's legal advice that "Pals should work within a netting frame work"? (1) What legal rationale has been advanced by OAR that would not work within "a netting framework"? If PALs are not governed by a netting framework, then what are PALs under the Clean Air Act and what legal rationale justifies PALs?

(b) Disagreeing with OAR, OGC states that "A PAL with no adjustments are not comparable to current system, citing industry study showing that current system results in loss of 32 percent of allowable emissions every 10 years." (1) What studies, analysis or other experience is OAR relying upon to support the claim that PALs are comparable to the current system? Attach the industry study referenced above, as well as any studies or analysis relied upon by OAR.

(c) Considering that PALs were first proposed by EPA in 1996, that EPA has instituted or approved many PALs since then, and that EPA now plans to move forward with adoption of a PAL approach, how is it that "no agreement" existed on the "legal rationale" for PALs as of the drafting of this chart in January 2002? (d) Was the issue of the "legal rationale" behind PALs elevated to EPA management, as suggested by this chart, and what was the outcome of that elevation? (1)

(ii) PAL in conflict with section 182(c)(6):

(a) OGC states that a PAL "is in conflict" with Clean Air Act section 182(c)(6), and notes that the "[s]tatute requires a 5-year rolling aggregation of net increases." (2) Did EPA reject the legal advice of OGC in allowing 10-year PALs in serious and severe ozone nonattainment areas and, if so, why? What is the legal authority for 10-year PALs in serious and severe ozone nonattainment areas? How does EPA reconcile a PAL whose term exceeds 5 years in serious and severe ozone nonattainment areas with section 182(c)(6)? Provide any legislative history or quotes of statutory language to support your responses.

(b) The chart indicates that "[t]here was no resolution of this issue pending outcome of further legal discussions. May be an elevation issue." (2) Was this issue elevated to EPA management and how was it resolved?

(iii) Basis for 10-year PAL:

(a) Disagreeing with OAR that a 10-year PAL is reasonable, OGC states that "PAL must be based on reasonably contemporaneous period, which is more consistent with a 5-year period." (3) What evidence in the Clean Air Act, its legislative history, court decisions, or English usage is EPA relying upon to support the claim that 10 years is a "contemporaneous period" within a netting framework? What legal authority is EPA relying upon as the basis for a 10-year PAL? Why was there "no agreement on this issue" as of January 2002? Was this issue elevated to EPA management, as suggested by the chart, and how was the disagreement resolved?

(b) How does EPA reconcile the Federal 5-year statute of limitations governing Clean Air Act violations with EPA's ability to enforce Clean Air Act requirements associated with a 10-year PAL? (3)

(iv) PAL adjustments for newly applicable requirements:

(a) OGC states that it will elevate to EPA management "issue of not considering future applicable rules that are known at the time the PAL is set." (4) Was this issue elevated and what was the resolution?

(b) Will a PAL that is not adjusted for newly applicable requirements be dirtier, that is allow more pollution, than one that is? Why would OAR support the dirtier outcome of not requiring the PAL to be adjusted downward to account for new emissions limits that become effective during the PAL's effective period?

(c) If a new emissions limit becomes effective during a PAL term, requiring emissions at a given unit to be reduced, does that not allow other units at the

facility to pollute more so long as the PAL is not exceeded, thereby undermining the air quality benefit of the new emissions limit? What is the legal basis, and policy rationale, for not requiring downward adjustment of the PAL for Reasonably Available Control Technology (RACT) and Maximum Achievable Control Technology (MACT) requirements? What evidence does EPA find in the statute or its legislative history for the apparent belief that Congress did not intend air quality to benefit by the emissions reductions achieved by RACT and MACT requirements?

(d) Under today's rules governing netting, may a source use emissions reductions required by applicable requirements as netting credits? [Check: Is the answer to this Yes? If so, then drop this question.]

(v) Control requirements for new and existing units under the PAL:

(a) OAR expresses the intent to require no controls for new and existing units under the PAL. (5) Identify all comments from State and local officials, environmental groups, and public health organizations supporting and, separately, opposing, this approach. Identify all comments or statements supporting this approach submitted by industry representatives. If there are numerous industry comments that are responsive, you may provide a representative selection.

(b) The failure to require controls for new or existing units under a PAL would appear to produces a dirtier outcome than requiring such controls; if you disagree, please explain. In light of this, what is the policy rationale for refusing to require new or existing units under a PAL? What is the legal rationale? By failing to require such controls, how does EPA believe it is carrying out the statutory purpose of requiring grand fathered existing facilities to clean up over time?

(c) OGC disagrees with OAR's claim that a "P4 study" and EPA's experience with PALs can be generalized given the "self-selecting nature" and "limited number" of the sources covered. What evidence is OAR relying upon in support of its apparent belief that all sources eligible for the PAL recently announced by EPA will control new units when not required to do so? What differences exist between the sources covered by EPA's P4 study and the universe of sources eligible for the PAL planned for adoption by EPA? Does EPA believe that sources given a choice between a PAL and the traditional form of NSR regulation for modifications will select the option with the greater air quality benefits? What evidence is EPA relying upon in support of its belief? What evidence is EPA aware of that contradicts this belief?

(vi) PAL renewal-setting level: The chart reveals OAR's intention to require no adjustment downward to the PAL upon renewal. OAR also intends to allow PALs to be renewed at the same level as the original level, and therefore not use the actual emissions baseline existing at the time of renewal. (7)

(a) Would this approach allow a source with actual emissions well below the PAL to increase its emissions at any time in the future without control, consuming increment in an attainment area, for example, so long as other applicable requirements were not violated (e.g., no NAAQS violation)?

Response. We believe that intra-agency discussions and correspondence are internal and non-discoverable. Our policy and legal justification for these rules will be set out in the final packages. The data and information accumulated during the 10-year rulemaking effort will be included in the public docket.

Question 38c. Clean Unit Test:

(i) What triggers NSR:
(ii) Duration:
(iii) Availability:
(iv) Process to Qualify:
(v) Application of Clean Unit designation to past determinations:

Response. We noted in our June 13th Report and Recommendations that EPA plans to finalize a 10-year duration for the Clean Unit provision, but also propose to later revise the duration to 15 years. We will not take final action on the 15-year proposal until after providing ample opportunities for public comment.

Question 38d. Revised "Major Modification" Test For Existing Emissions Units

(i) [Several categories of inquiries to include from chart]

Response. This question makes reference to categories of inquiries from a chart. We did not receive a chart with such inquiries, so are not able to provide a response.

Question 39a. Modification as Any Physical Change or Change in the Method of Operation.—For the NSPS and NSR programs, the Clean Air Act defines "modification" as "any physical change in, or change in the method of operation of, a sta-

tionary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." 42 U.S.C. § 7411(a)(4) (emphasis supplied). As the United States Court of Appeals for the 7th Circuit noted in its decision, *Wisconsin Electric Power Company* v. *EPA,* 893 F.2d 901, 908–909 (Jan. 19, 1990), referring to the views of one of the congressional architects of the 1977 Clean Air Act amendments:

The Supreme Court reported in Chevron that Senator Muskie, one of the principal supporters of the Clean Air Act, remarked: "A source . . . is subject to all the nonattainment requirements as a modified source if it makes any physical change which increases the amount of any air pollutant. . . ." 467 U.S. at 853, 104 S.Ct. at 2787 (quoting 123 Cong. Rec. 26847 (1977)) (emphasis supplied). And other courts considering the modification provisions of NSPS and PSD have assumed that "any physical change" means precisely that 893 F.2d at 908. The court concluded that to adopt WEPCO's more narrow definition of "physical change" would "open vistas of indefinite immunity from the provisions of NSPS and PSD." Id. at 909.

What evidence, if any, does EPA find in the Clean Air Act's language or legislative history to contradict the conclusion that the language "any physical change in, or change in the method of operation of, a stationary source" is meant to be read as broadly as this language reads on its face, as broadly as the 7th Circuit did in the WEPCO decision, and as broadly as numerous other courts have read this language?

Response. Please see the response to Question 37.

Question 39b. EPA has made the claim that Congress did not intend for pollution control projects to be a physical change or change in the method of operation subject to NSR, notwithstanding whether pollution increases, including significant or toxic pollution increases, resulted from such projects. See 57 Fed. Reg. 32319. The "pollution control and prevention project" exclusion announced by the Administration appears to rest on this same assertion. In addition, several other pollution-increasing activities excluded from NSR under the Administration's announced plans also appear to rest on the claim that those activities are not physical changes or changes in the method of operation at a stationary source within the meaning of the Clean Air Act.

For the following activities and measures, what evidence, if any, does EPA find in the Clean Air Act's language or legislative history to support the claim that these activities are not covered by the language "any physical change in, or change in the method of operation of, a stationary source"? Please quote that language and provide all necessary citations.

(i) Pollution control and prevention projects, as defined by EPA in its WEPCO rulemaking or June 13, 2002 announcements, including those that "increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted."

(ii) Changes, investments or processes occurring at a "clean unit" as defined by EPA in its June 13, 2002 announcement about a "clean unit exclusion," including any activity associated with those units that "increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted."

(iii) "Routine maintenance, repair, or replacement" activities as set forth in the Code of Federal Regulations, including those that "increase the amount of any air pollutant emitted by such source or which result in the emission of any air pollutant not previously emitted."

(iv) Activities covered or potentially covered by the "routine maintenance, repair, and replacement" safe harbor proposal described by EPA on June 13, 2002.

Response. Please see the response to Question 37.

Question 40a. Public Participation in Permit Actions for Pollution-Increasing Activities in Their Communities

The announced changes appear likely to drastically reduce the number of modifications to existing major sources that undergo NSR, particularly in nonattainment areas. By avoiding major NSR, these changes will also avoid the public scrutiny provided through NSR.

Has EPA done any analysis to determine how many of those source activities—previously treated as modifications subject to NSR/PSD but now exempt from NSR/PSD as a result of EPA's planned changes will be subject to State minor NSR programs pursuant to Clean Air Act section 110(a)(2)(C)? If so, please provide the Agency's best estimate; if not, please explain why.

Response. EPA will be prepared to discuss these issues as they relate to the final rules upon publication. There may also be subjects we can appropriately explore on aspects of the proposed rule once a Notice of Proposed Rulemaking has been published.

Question 40b. EPA regulations require Federal, federally delegated, and SIP-approved State minor NSR programs to provide opportunities for public comment and review for all new minor sources and "minor modifications" at existing sources. See 40 CFR §§ 51.161 51.164. How many State SIP-approved minor NSR programs, and federally delegated State minor NSR programs currently provide opportunities for public comment and review consistent with these Federal regulations? How many do not? How many "SIP calls" or other corrective actions has EPA undertaken with respect to State minor NSR programs that are inconsistent wit these Federal regulations? Does EPA plan to require States to take corrective actions to their State minor NSR programs that are inconsistent wit these Federal regulations, by the time EPA adopts final changes to its NSR regulations?

Response. At the current time, most States have minor NSR programs that have been approved into the States' SIPs. We are aware that there are concerns that some of these SIPs (which we approved through notice and comment rulemaking) may not comport with the requirements in our regulations. However, we have not made any determination that any specific program is inadequate. We plan to review this issue in the future and, if appropriate, take the appropriate actions to ensure that all programs comport with our regulations.

Question 41a. Federalism, State Preemption, and Criticisms by State Air Regulators.—In its 1996 NSR rulemaking proposal, EPA proposed to adopt the rule changes "as a menu of options from which a State may pick and choose in order to customize a specific approach for its individual needs." 61 Fed. Reg. 38250, 38253 (July 23, 1996). EPA explained this approach as follows : "For instance, if EPA adopts in its final rulemaking both the 'Clean Unit' exclusion and the PAL option, a State could retain its current federally approved applicability approach without making changes, retain its existing approach and add a Clean Unit Test, or retain its existing approach and add both a Clean Unit Test and an option for PAL."

How many comments from State or local officials did EPA receive opposing the proposal to allow States the option to adopt or decline to adopt the various rule changes? How many comments from State or local officials did EPA receive supporting this proposal? Please attach both supportive and non-supportive State and local comments.

Response. EPA has already provided a complete set of all comments received on the NSR proposed rules. We are currently preparing a complete summary of these comments and our responses. This "response to comment" document will be available when the regulations are published.

Question 41b. Will EPA reject the approach set forth in its 1996 proposal and force States to adopt any or all of the changes to the NSR regulations, regardless of whether a State wishes to adopt those changes, regardless of whether a State believes the changes will weaken their current regulations, or regardless of whether a State believes one or more of the changes would degrade air quality or hamper State efforts to attain or maintain the NAAQS? If EPA has not reached a final decision on this question, is EPA considering forcing these changes upon States opposed to adopting them? If EPA has decided this or is considering doing this, how does EPA reconcile this position with Clean Air Act section 116, which (1) retains State authority to adopt or enforce "any standard or limitation respecting emissions of air pollutants or any requirement respecting control or abatement of air pollution, and (2) prohibits States or political subdivisions from adopting or enforcing any emission standard or limitation which is less stringent than standards or limitations under an applicable implementation plan or sections 110, 111 or 112 of the Act?

Response. Until such time as the NSR Reform rulemaking package is published, it would be premature to say what the Agency will reject or accept relating to State regulations.

Question 41c. In a January 23, 2002 letter to Administrator Whitman from the State and Territorial Air Pollution Program Administrators (STAPPA) and Association of Local Air Pollution Control Officials (ALAPCO), the nation's State air regulators expressed deep concerns about the closed process conducted by EPA in the all-important months preceding announcement and adoption of changes to the NSR program regulations. These State officials also expressed serious concerns about the directions of EPA's changes and "the impact that these changes will have on our nation's ability to achieve and sustain clean, healthful air." The serious concerns held by these officials were not assuaged by EPA's June 13, 2002 announcements, with a response statement released by STAPPA/ALAPCO on that date noting that "[n]othing in EPA's announcement today indicates that the Agency has revised its NSR reform plans to address our concerns." This statement reiterated the States' displeasure over EPA's refusal to "convene a broad stakeholder meeting to allow for an open dialog on the reforms under consideration." The State air regulators' state-

ment ended with this chilling conclusion: "we believe the controversial reforms being pursued by EPA will not only result in unchecked emission increases that will degrade our air quality and endanger public health, they will also undermine the chances of any responsible changes to the NSR program ever taking effect."

Please explain why the Administration has failed to address the concerns of State regulators with respect to the issues identified below. In addition, provide a detailed response to the specific criticisms that STAPPA & ALAPCO levels at these issues; if you disagree with these criticisms, explain in detail why STAPPA & ALAPCO are wrong. Finally, explain all analysis undertaken by EPA with respect to these issues that contradicts the conclusion by STAPPA & ALAPCO that "the controversial reforms being pursued by EPA will . . . result in unchecked emission increases that will degrade our air quality and endanger public health." Attach all documents reflecting or supporting that analysis.

Response. In 1992, EPA empaneled a Federal advisory committee (FACA) for the sole purpose of investigating whether NSR could be improved and, if so, how. STAPPA and ALAPCO were charter members of this FACA. After nearly 4 years of extensive consultation and hard work, EPA published a proposed rule addressing many of the ideas developed during this multi-year effort. Between the 1996 proposal and January 2001, EPA held two public hearings and more than 50 meetings with a variety of stakeholders including environmental groups, industry, and State, local and Federal Agency representatives. Over 600 detailed comments have been submitted to EPA between 1992 and 2001.

In response to the President's recent request for EPA's review of the NSR program, the Agency met with more than 100 groups, held four public meetings around the country, and received more than 130,000 written comments. Moreover, over the years, EPA has seldom turned down a request to meet with any stakeholder group that wishes to discuss improving NSR. STAPPA and ALAPCO have been long-time and active participants in this process. The claim that this has been a "closed process" are obviously baseless.

We disagree that our NSR reforms will result in "unchecked emissions increases."

Question 42a. Air Quality Impacts.—In the 1996 rulemaking proposal, EPA stated that it had prepared a draft Regulatory Impact Analysis (RIA) for the proposed regulations and included that draft RIA in the docket for the proposed regulations. 61 Fed. Reg. at 38318. With that document as background and context, please explain the bases for the following estimated impacts:

(i) Revising the period for establishing the baseline for actual emissions from which to calculate emission increases to the highest consecutive 12 months in the previous 10 years would cause 20 percent fewer sources to be classified as major;

(ii) Adding exemptions for pollution control projects and clean units would cause another 6 percent of sources to be classified as major;

(iii) Allowing sources to use projected future actual emissions in calculating whether increases in emissions resulting from physical or operational changes trigger NSR would exclude an additional 25 percent of sources from major NSR.

Please identify differences between the proposed regulations and the planned final regulations that could alter these estimated impacts (for example, if every permitting authority were required to adopt a pollution control project exclusion, the number of exempt sources would likely be higher than it would have been if the exclusion were optional).

Response. (i) & (ii) In preparation of the 1996 RIA for the proposed NSR Reform package, the Agency had several choices for its analytical baseline. Since it was the most recent analysis of the NSR process at the time, the Agency chose to use the baseline from the ICR prepared in 1994. From that baseline, to determine the expected number of permits affected by the NSR Reform rule, EPA analyzed Standard Industrial Code (SIC) groups which tend to have the greatest number of NSR permits each year. Three major changes impacted the number of sources which must undergo major NSR in the 1996 RIA: a new applicability test for "Clean Units", a change in the netting baseline, and an exemption for Pollution Control Projects (PCPs). The number of sources not subject to permitting under the major NSR through these programs is not additive. However, the Agency expected the effect of this double-counting to be negligible and therefore double counting was ignored. Combining all the applicability changes above, the Agency estimated there are approximately 340 sources that would have been subject to major NSR and would not have needed an NSR permit as a result of the proposed changes. We note that the environmental benefits of the NSR programs are not necessarily tied to the number of permits actually issued or that on the basis of certain assumptions, might be required under the program.

(iii) The 1996 RIA for the NSR Reform program also claimed an actual-to-future-actual applicability test, in conjunction with an extension to the actual emissions baseline, could reduce the number of affected sources (from the 1995 baseline) by 25 percent. As with the determination of the expected effect of the other programs addressed in this question, there are no data available upon which the Agency could rely for its initial assessment of that impact. EPA polled industry experts and State and local permitting experts on the potential impact of the actual-to-future-actual applicability test and included a representative (and conservative) estimate from that polling process in the 1996 RIA.

Question 42b. Please explain how EPA has revised its RIA and provided an opportunity for permitting authorities, members of the public, and regulated entities to comment on the revised RIA.

Response. The public was afforded an opportunity to comment on this RIA at the time of the 1996 proposal. Very few comments were received. The RIA for the final rule and additional analyses of the final rule will be placed in the docket when EPA publishes the rule.

Question 42c. Please explain how EPA has responded to comments on the additional analysis conducted to assess the impacts of the regulations as the Agency plans to finalize them.

Response. EPA considered the comments submitted on the 1996 proposed rule. A complete summary of these comments and our responses will be available when we publish the rules.

Question 42d. If the Agency does not plan to conduct further analysis relevant to the rules that the Agency has announced plans to finalize, on what basis would the Agency justify that decision?

Response. Until we publish the proposed regulations, EPA continues to work on analyzing the impacts of different regulatory options. All analyses that are conducted will be available at the time the rules are published.

Question 42e. Have any EPA offices, personnel, or contractors worked to estimate the impacts of changing the NSR regulations (either as proposed or in any other way) more recently than the draft RIA described in the proposal? If so, please describe those activities and their subject, scope, work product, conclusions, and outcome.

Response. EPA continues to work on analyzing the impacts of different regulatory options. All analyses that are conducted by EPA offices, personnel, or contractors will be available at the time the rules are published.

Question 43. The "clean unit exclusion" announced by the Administration would provide that emissions increases from a qualifying unit "would only trigger NSR if permitted allowable emissions increase." The Administration claims that "[t]he Clean Unit Exclusion would provide greater certainty and flexibility for changes at clean emission units without sacrificing the environmental benefit provided by the current program or meaningful public participation." In stark contrast, EPA previously has noted the following about NSR exemptions turning upon whether a source's potential to emit increases:

An exclusion of projects that do not increase a source's potential to emit would create an exclusion that could considerably reduce the effectiveness of the NSR program. Almost any modernization that a source undertakes has the incidental effect of lowering emissions. A new emissions unit or modernization generally has fewer emissions than one built 40 years earlier. Since these types of changes would not likely increase a source's potential to emit, industry would claim this as a pollution prevention project—even though its pollution prevention aspects are likely to be negligible and actual emissions may increase dramatically due to increased utilization. "Responses to Issues Raised by Industry on Clean Air Act Implementation Reform," (May 30, 1995), at 20 (Response to Issue 3: Pollution Prevention Exemption)

On what basis does EPA now conclude that a clean unit exclusion, applied retroactively and prospectively, and turning upon whether the unit's permitted allowable emissions increase, would not "considerably reduce the effectiveness of the NSR program." What analysis has EPA undertaken to support this conclusion and to contradict its earlier conclusion?

Response. In 1996, EPA proposed and took comment on an alternative applicability test based on a "potential-to-potential" test. The Agency expressed many concerns with the environmental impact of such an approach. However, we also received many comments that support this approach based on the benefits such an approach provides. For example, commenters stated that it would reduce the complexity of the NSR applicability determination, reduce unnecessary costs and delays, prevent the confiscation of unused capacity, and improve compliance and enforce-

ment. The Clean Unit test we are currently considering would capture the benefits of a potential-to-potential test but adds additional safeguards to ensure environmental protection because the installation of clean units represent state-of-the-art emissions controls that will have undergone public review and a review for impacts on air quality.

Question 44. If the 1.5–15 percent capital investment threshold being contemplated for the changes to the definition of routine maintenance, repair and replacement safe harbor were in place at the time of the alleged NSR violations by utilities and refineries, how many, if any, of the alleged violations prosecuted since initiation of EPA's NSR enforcement initiative would have qualified for the safe harbor? For any activities qualifying for the safe harbor and avoiding NSR pollution controls, how many tons of pollution, on an annual and total basis, would have been allowed to increase potentially uncontrolled since the time of the modification?

Response. The capital investment threshold concept is still in the pre-proposal stage. The issues presented in this question will be addressed in the proposal.

NEW SOURCE REVIEW: REPORT TO THE PRESIDENT, JUNE 2002

RECOMMENDED IMPROVEMENTS TO THE NEW SOURCE REVIEW PROGRAM

The President's National Energy Policy Report directed the U.S. Environmental Protection Agency (EPA), in consultation with the Department of Energy (DOE) and other relevant agencies, to review the New Source Review (NSR) program and to issue a report on the impact of the program on investment in new utility and refinery generation capacity, energy efficiency and environmental protection. Having carefully considered the comments received during this review and other relevant information, EPA has identified the following ways in which to reform existing rules and guidance to improve and streamline NSR applicability provisions. Also, with respect to electricity generators and refiners, these changes will help to address the extreme demands being placed on our nation's energy supply infrastructure. These changes would assure that the NSR program operates in a manner that provides greater regulatory certainty and flexibility for business investment decisions, while at the same time protecting the environment.

(1) PLANTWIDE APPLICABILITY LIMITS (PALS)

EPA would finalize its 1996 NSR reform proposal for PALs by allowing source owners to make changes to their facilities without obtaining a major NSR permit, provided their emissions do not exceed the plantwide cap. A source could apply for and obtain a PAL based upon its actual emissions baseline. The actual emissions baseline would be determined according to the method described in Section 4, below. The framework of the actual PAL requirements is as follows: PALs would be valid for a term of 10 years. Once a PAL is established at a facility, the company may make any change without undergoing major NSR provided the emissions do not increase above the PAL level. Upon renewal of the PAL, the emissions levels set by the PAL may be reevaluated by the State or local permitting authority to determine the need for an adjustment based on air quality needs, advances in technology and control cost effectiveness considerations. A PAL may be increased provided certain criteria are met. If the area is nonattainment, the State must provide an opportunity for public participation, model the increase as appropriate, apply control technology to the changed or new emissions unit and secure the necessary offsets. If the area is in attainment, the State must provide an opportunity for public participation, model the increase, apply control technology to the changed or new emissions unit and undertake any mitigation measures that might be required. Using this approach, we also plan to develop an alternative that would give a source the option of obtaining a PAL based on allowable emissions.

We believe that PALs offer a number of advantages for industry, permitting authorities and the environment. First, PALs provide certainty and operational flexibility. Source owners would be able to make any change to their facilities without obtaining a major NSR permit, provided their emissions do not exceed the plantwide cap. We believe the cap ensures environmental protection and that facility owners that use PALs will have the incentive to install good controls to maximize their flexibility and certainty. Finally, the public obtains a complete picture of the emissions profile of the source and is assured that there is an opportunity for public participation in the event emissions are increased in the future.

(2) CLEAN UNIT EXCLUSION

EPA would finalize its 1996 proposal for the Clean Unit Exclusion. A unit would be considered to be "clean" if it underwent a review process that resulted in its achieving Federal Best Available Control Technology (BACT) or Lowest Achievable Emission Rate (LAER) control levels or comparable State minor source BACT. A clean unit would only trigger NSR if permitted allowable emissions increase. This exclusion would provide an incentive for source owners to install the best emission controls on new or modified emission units. Specifically, a source that underwent a valid BACT/LAER process or State minor source BACT since 1990 would be entitled to the exclusion. The exclusion would be valid for 10 to 15 years and would run from the date the control technology was installed or the project was implemented. Sources that installed Maximum Achievable Control Technology (MACT), Reasonably Available Control Technology (RACT) or undertook pollution prevention that required capital expenditures could also qualify for the exclusion, provided the results are determined to be comparable to BACT or LAER that would have been employed at the time the control measures or devices were originally installed. Finally, sources that invest capital to purchase equipment or implement processes that are inherently clean or lower emitting and which achieve emission reductions comparable to BACT or LAER at the time the investment was made would also qualify for the exclusion. The Clean Unit Exclusion would provide greater certainty and flexibility for changes at clean emission units without sacrificing the environmental benefit provided by the current program or meaningful public participation.

(3) POLLUTION CONTROL AND PREVENTION PROJECTS

The EPA's policy is to promote pollution control and prevention approaches and to remove regulatory disincentives to companies seeking to develop and implement these solutions to the extent allowed under the Clean Air Act. As part of finalizing its 1996 NSR reform rulemaking, the Agency will revise its Prevention of Significant Deterioration (PSD) and nonattainment NSR regulations to exclude from NSR projects that will result in a net overall reduction of air pollutants, including where a source switches to a cleaner burning fuel, regardless of the primary purpose of the project. Specifically, the Agency will revise its PSD and nonattainment regulations to exclude from NSR the addition, replacement or use at an existing emissions unit of any system, process, control or device whose overall net impact on the environment is beneficial, subject to certain conditions. As an overarching safeguard, a project cannot result in an emissions increase that will cause a violation of a National Ambient Air Quality Standards (NAAQS) or PSD increment or result in an adverse impact on Class I areas. Moreover, the complete replacement or reconstruction of an existing emissions unit will not qualify under this exclusion. For example, replacement of a pulverized coal boiler with an atmospheric fluidized bed combustion unit, with inherent NOx and SO_2 reduction technology, would not be treated as a pollution control project for purposes of this exclusion. Projects qualifying for this exclusion will not be considered to be a "physical or operational change" within the definition of major modification under the Act.

EPA will provide a list of environmentally beneficial technologies that will be presumptively eligible for the exclusion. This list shall include those technologies identified in the WEPCO pollution control exclusion (40 CAR Section 52.21(B)(32)) and those set forth in EPA's 1996 proposed NCR reform rulemaking (61 far 38250, 38261 (1996)). Unless covered under another NCR exclusion, pollution prevention and control projects that are not on this list must be determined to be environmentally beneficial before such projects can qualify to be excluded from NCR. Furthermore, new pollution control and prevention technologies that are not on the list also can qualify for case-by-case approval for this exclusion if their effectiveness in reducing emissions is demonstrated in practice, they are determined to be environmentally beneficial and their application will not cause a violation of a NAAQS or PHD increment or result in an adverse impact on Class I areas. EPA will establish a process through rulemaking for adding pollution control and prevention technologies to the list of projects that will be presumed to be environmentally beneficial.

A source may qualify for the exclusion by providing prior notice to the permitting authority and maintaining records supporting the source's determination onsite. A source would have the option of seeking a determination from its permitting authority prior to implementing the exclusion.

(4) ACTUAL TO PROJECTED FUTURE ACTUAL METHODOLOGY

EPA would finalize its 1996 NCR reform rulemaking by using an actual to projected future actual methodology for calculating emissions increases for all industrial sectors. Owners and operators of facilities would calculate emissions increases for a physical change or change in method of operation at an existing unit by comparing representative pre-change actual emissions with projected post-change actual emissions. The "actual to future actual" test would be applied to all physical or operational changes at existing sources, except those that are an addition of a new unit or constitute a complete replacement of an existing unit. Records supporting the source's determination and records of actual emissions for the following 5 years must be maintained on site.

Causation.—Consistent with pre-existing statutory and regulatory requirements, only emissions increases caused by a given change are considered in measuring the emissions increase associated with the change. In particular, as part of the actual to projected future actual methodology, EPA will continue to apply the causation test incorporated into the WEPCO rule. EPA will exclude from the emissions increase calculation that portion of the post-change emissions that both: (1) could have been accommodated before the change within the representative baseline period; and (2) is attributable to an increase in projected capacity utilization at the unit that is unrelated to the particular change.

Actual Emissions Baseline.—For sources other than electric utility steam generating units, the actual emissions baseline will be the highest consecutive 24-month-period within the immediately preceding 10 years, taking into account the current emissions factor (which would reflect emissions limitations, other required emissions reductions, and permanent shutdowns since the baseline period) in combination with the utilization level from the 24-month time period selected.

(5) ROUTINE MAINTENANCE, REPAIR AND REPLACEMENT (RMR&R)

Safe Harbor Test: Through notice and comment rulemaking, EPA will set forth cost-based thresholds using well-established precedents from the Agency's long-standing New Source Performance Standard (USPS) regulations. Projects whose aggregated costs are below the threshold would automatically be given RMR&R treatment. Projects whose costs exceed the threshold would remain eligible for RMR&R treatment if they otherwise qualify, without any presumption that they did not qualify by virtue of their being outside the safe harbor.

In approaching this test, we have considered two different provisions in the USPS standards. First, the reconstruction provisions of 40 CAR Section 60.15 clearly provide that capital replacement value of an affected source is a relevant basis for determining the need for installing modem pollution controls when a project is implemented. Second, the USPS excludes projects that increase utilization at an affected source if they come below "annual asset guideline repair allowance" percentage thresholds (defined by the IRS for specific industry categories) ranging from 1.5 to 15 percent.

These USPS provisions would be adapted to operate in the NSR context. For example, the NSPS limits operate on specific projects, but in the context of an RMR&R safe harbor, annual dollar cost thresholds, averaged on a rolling basis over a 5-year period (except where maintenance cycles in a particular industry dictate a different period) established for entire utility stationary sources and refinery and other industry processing and production units, might be more appropriate. These thresholds would be applied so that if the aggregate cost of maintenance expenses and capital repair and replacement projects for the relevant unit do not exceed the specified dollar threshold then the activities would be deemed to be "routine maintenance" and, thus, not subject to NSR.

The cost threshold for the relevant source or unit would be set so as to cover RMR&R capital and non-capital costs incurred to facilitate the safety, efficiency, and reliability of the operation of the unit. In the context of the NSPS increase in production rate exclusion, these are set by reference to historical invested basis. In the context of establishing a safe harbor for routine maintenance, repair, and replacement, however, a more appropriate comparison point might be capital replacement cost or another measure that sets a consistent threshold for all facilities in a given industry.

As noted above, under the NSPS exclusion for increases in production rate, the annual cost thresholds are set on an industry-by-industry basis, with an "annual asset guideline repair allowance" percentage assigned to each industry. These percentages range from 1.5 percent to 15 percent. There is good reason to think that the industry-specific basis and the specific percentages are appropriate in the RMR&R context as well. EPA would also entertain comment, however, on the appro-

priateness of the industry-specific approach and the appropriateness of the particular thresholds for the various industries in this context.

Excluded Costs: Costs incurred for installing and maintaining pollution control technology would not be included in calculating costs under the safe harbor threshold test. EPA also would consider excluding certain costs associated with forced outages involving the unanticipated failure of one or more major components.

Expenses Beyond the Safe Harbor: If aggregate maintenance costs of work undertaken exceed the applicable cost threshold, that work would not thereby be presumed to be non-routine.

Other Considerations: EPA also would take comment on particular safe harbor implementation issues. For example, as noted above, the Agency intends to set thresholds at levels that will cover the RMR&R costs needed to facilitate the safety, efficiency, and reliability of operations at industrial facilities. Because expenditures that fall below these thresholds would automatically be excluded from NSR, the Agency is concerned that, in some cases, such thresholds might allow a facility to undertake relatively low-cost projects (such as installation of new burners or painting equipment) that can increase emissions significantly and should not automatically be excluded from NSR. As part of the rulemaking for setting cost-based thresholds, EPA could identify specific types of projects that cannot be excluded from review by virtue of the thresholds. However, for some types of sources, such as electric utilities and refineries, the better approach may be to utilize maximum achievable hourly emissions rate as the mechanism for addressing this concern.

Definitional Issues.—Through notice and comment rulemaking, EPA will propose that the replacement of existing equipment with equipment that serves the same function and that does not alter the basic design parameters of the unit (for example in the case of utilities this means maximum heat input and fuel consumption specifications) typically would be considered RMR&R. In addition, this rulemaking will provide clear guidelines for RMR&R activities undertaken to facilitate, restore, or improve efficiency, reliability, availability, or safety within normal facility operations. EPA also will consider provisions identifying the types of projects that are undertaken as RMR&R activities in particular industrial sectors. The absence of a project from such a list would not disqualify it from being considered RMR&R but would simply result in its being evaluated on a case-by-case basis as to whether it was routine.

In the case of the utility sector, equipment that is maintained, repaired and replaced can be categorized along functional lines (for example, boiler tube assemblies, air heaters, coal handling equipment, pumps, fans, etc.) Using these categories, EPA could identify RMR&R activities undertaken to facilitate reliability, availability, efficiency, or safety within normal facility operations. In particular, the EPA would focus on projects where the consequences of delaying or foregoing the work could lead to lower availability or the failure of the generating unit and create or add to safety concerns. For example, DOE suggests that such a rule could be informed by maintenance, repair and replacement activities identified as common practice by the North American Electric Reliability Council.

Along the same lines, EPA could identify routine maintenance, repair and replacement undertaken by refineries during "turnarounds."

Also in the context of RMR&R, EPA will address energy efficiency projects. EPA will affirm that existing NSR rules are not intended to discourage activities that increase efficiency. The Agency will propose that energy efficiency improvements undertaken through routine maintenance, replacement and repair activities will be considered to be RMR&R. In this context, energy efficiency projects will be considered to be routine if the improvement results from the replacement of existing equipment with equipment that serves the same function and that does not alter the original design parameters of the unit (for example in the case of utilities this means maximum heat input and fuel consumption specifications).

EPA will also take steps to provide additional certainty about RMR&R activities during the pendency of this rulemaking.

(6) DEBOTTLENECKING

Through notice and comment rulemaking, EPA will clarify that, when calculating actual emissions associated with a physical change or change in the method of operation, sources generally should look only at the unit undergoing the change. Emissions from units "upstream" or "downstream" of the unit being changed should be considered only when the permitted emissions limit of the upstream or downstream unit would be exceeded or increased as a result of the change.

(7) AGGREGATION

Through notice and comment rulemaking, EPA would clarify its nonaggregation policy as follows. For purposes of determining NSR applicability, a project would be considered separate and independent from any other project at a major stationary source unless (1) the project is dependent upon another project to be economically or technically viable or (2) the project is intentionally split from other projects to avoid NSR. Also, EPA generally would defer to the States to implement the Agency's aggregation rule.

NEW SOURCE REVIEW: REPORT TO THE PRESIDENT

OVERVIEW

The New Source Review (NSR) program is one of many programs created by the Clean Air Act to reduce emissions of air pollutants—particularly "criteria pollutants" that are emitted from a wide variety of sources and have an adverse impact on human health and the environment. Other key programs include the Title IV Acid Rain Program, "MACT" standards and other air toxics standards, New Source Performance Standards, the 22-state NO, "SIP Call," the Regional Haze Program, numerous mobile source programs, and other State and local SIP-based emissions standards. Government officials from both major political parties and industry groups have expressed the belief that the NSR program is unnecessarily complicated and often serves as an unnecessary obstacle to environmentally beneficial projects in the energy sector, such as those that improve energy reliability and efficiency and promote the use of renewable resources.

The President's National Energy Policy Development Group asked EPA to investigate whether the NSR program does, in fact, have such impacts. The Agency's review of the NSR program was broad-based. EPA held four public hearings, had individual meetings with over 100 groups representing the public, industry and State and local agencies, and reviewed over 130,000 comments from private citizens, environmental groups, State officials and industry representatives.

With regard to the energy sector, EPA finds that the NSR program has not significantly impeded investment in new power plants or refineries. For the utility industry, this is evidenced by significant recent and future planned investment in new power plants. Lack of construction of new greenfield refineries is generally attributed to economic reasons and environmental restrictions unrelated to NSR.

As applied to existing power plants and refineries, EPA concludes that the NSR program has impeded or resulted in the cancellation of projects which would maintain and improve reliability, efficiency and safety of existing energy capacity. Such discouragement results in lost capacity, as well as lost opportunities to improve energy efficiency and reduce air pollution.

For the refining and other industries, EPA concludes that NSR as applied to existing plants discourages projects that would have provided needed capacity or efficiency improvements and would not have increased air pollution—in fact in some cases air pollution may have decreased. EPA believes this can result in lost capacity or foregone opportunities to increase capacity without increasing emissions.

Finally, with regard to environmental protection, EPA concludes that preventing emissions of pollutants covered by NSR does result in significant environmental and public health benefits. Specifically quantifying the NSR program's contribution to these benefits is very difficult because of the variety of Clean Air Act programs that address these pollutants and because there is no tracking by any government agency of the reductions in emissions that sources make due to the program. Moreover, EPA recognizes that the Agency does not currently have other information that would be necessary to quantify risk reduction benefits associated with the program. However, EPA believes that the inability to make exact estimates does not mean that the benefits of the NSR program are insignificant. EPA also believes, however, that for particular industry sectors the benefits currently attributed to NSR could be achieved much more efficiently and at much lower cost through the implementation of a multi-pollutant national cap and trade program. In particular the President's Clear Skies initiative is a much more certain and effective way of achieving emissions reductions from the power generation sector.

For virtually the entire history of the NSR program, representatives of industry, State and local agencies, and environmental groups have worked with EPA on developing improvements to the NSR program. These efforts came to a head in 1996, when EPA proposed a rule to "reform" the NSR program. Even after the proposal, stakeholders have invested countless hours in trying to find ways to make the program better. Based on the conclusions of this study and the recommendations from

the State Governors and Environmental Commissioners[1] and other stakeholders, EPA now plans to finish the task of improving and reforming the NSR program.

I. THE CHARGE TO EPA

In its May 2001 National Energy Policy Report, the National Energy Policy Development (NEPD) Group recommended that the Administrator of the Environmental Protection Agency (EPA), in consultation with the Secretary of Energy and other Federal agencies, "review New Source Review regulations, including administrative interpretations and implementation, and report to the President within 90 days on the impact of the regulations on investment in new utility and refinery generation capacity, energy efficiency, and environmental protection." Consistent with this recommendation, EPA conducted its examination and is now issuing this report. This report describes EPA's conclusions about the impacts of NSR on these three issues based on its review of the available information and comments.

II. BACKGROUND

EPA assembled an interagency team for this project, including representatives from the Department of Energy (DOE), Department of the Interior (DOI), Office of Management and Budget (OMB), White House Council on Environmental Quality (CEQ), and the National Economic Council (NEC). In consultation with this group, EPA prepared a background paper, which was released on June 22, 2001 (EPA Background Paper). This paper described available data relevant to the three issues EPA was charged with reporting on: investment in utility and refinery capacity, energy efficiency, and environmental protection. The background paper included EPA's own data, as well as data provided in a supporting report by ICF Consulting Inc. (ICF Report), which summarized ICF's survey of the available literature and public statements on NSR issues. The background paper presented the data to facilitate public comment, and to provide the opportunity for external reviewers to provide additional relevant data. The background paper did not draw conclusions or make recommendations.

Following the background paper's release, EPA initiated an intensive public outreach effort, consisting of three components: (1) a 30-day public comment period; (2) a series of four public hearings held in locations across the country; and (3) a series of meetings with more than 100 stakeholder groups, including environmental organizations, industry representatives, and. State and local governments. During this public outreach period, EPA received written comments from over 130,000 individuals and organizations. A total of 255 people testified at the four hearings. All of the materials received during the public outreach period, including written comments, transcripts of the hearings, and attendance lists and written materials in connection with the stakeholder meetings, are available in public docket number A–2001–19 at the EPA's Office of Air and Radiation Docket and Information Center.

This report discusses the statutory and regulatory provisions of the New Source Review (NSR) pre-construction permitting program. While the report explains the views of many parties regarding the requirements of the NSR program, it is not intended to affect the NSR program or actions that EPA has taken to implement or enforce the NSR program[2]. This report does not substitute for statutory provisions or regulations, nor is it a guidance document reflecting EPA's interpretation of statutory or regulatory provisions. Its purpose is to summarize information that EPA has received relating to the NSR program and to report on EPA's findings concerning whether the NSR program has affected investment in new utility and refinery generation capacity, energy efficiency, and environmental protection.

New Source Review

EPA is strongly supportive of the goals of the NSR permitting program, whose basic requirements are established in parts C and D of Title I of the Clean Air Act (CAA). The purpose of the NSR program is to protect public health and welfare, as well as national parks and wilderness areas, as new sources of air pollution are built and when existing sources are modified in a way that significantly increases air pollutant emissions. Specifically, NSR's purpose is to ensure that when new

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[1] See, Resolution Number 01–12, Environmental Council of States on Reform of the New Source Review Regulations dated August 28, 2001, National Governors Association Policy Position, NR–18 Comprehensive National Energy Policy; Section 18.6.

[2] Note that many parties submitted comments concerning issues unrelated to the NEPD's recommendation for EPA to review on the impact of the regulations on investment in new utility and refinery generation capacity, energy efficiency, and environmental protection. For example, numerous parties offered comments as to the merits of pending NSR enforcement cases. This report does not summarize issues unrelated to the NEPD's charge.

sources are built or existing sources undergo major modifications: (1) air quality improves if the change occurs where the air currently does not meet Federal air quality standards; and (2) air quality is not significantly degraded where the air currently meets Federal standards. The fundamental philosophy underlying the NSR program is that a source should install modern pollution control equipment when it is built (for new sources) or when it makes a major modification (for existing sources). Congress believed that incorporating pollution controls into the design and construction when new units are built, or when major modifications occur, is generally more efficient than adding on controls after construction.

The NSR program is by no means the primary regulatory tool to address air pollution from existing sources. The Clean Air Act provides for several other public health-driven and visibility-related control efforts: for example, the National Ambient Air Quality Standards Program implemented through enforceable State Implementation Plans, the NOx SIP Call, the Acid Rain Program, the Regional Haze Program, etc. Thus, while NSR was designed by Congress to focus particularly on sources that are newly constructed or that make major modifications, Congress provided numerous other tools for assuring that emissions from existing sources are adequately controlled. For example, the national cap on SO_2 emissions established under the Acid Rain Program applies to all existing electricity generating units, without regard to the date of construction or whether a given source has been modified.

NSR operates by requiring a source to obtain a permit prior to construction or major modification. The permit establishes various actions that the source must undertake to control its emissions of air pollution. However, NSR only applies if the construction project will emit air pollution that exceeds threshold levels established in the NSR regulations. For a new source, NSR is triggered only if the potential emissions qualify as major. For an existing major source making a modification, NSR is only triggered if the modification will result in a significant net increase in emissions.

The major NSR program comprises two separate parts: Nonattainment NSR and Prevention of Significant Deterioration (PSD).[3] These two programs have separate requirements to address the differing air quality planning needs in the areas where they apply. Nonattainment NSR applies in areas where air is unhealthy to breathe—i.e. where the established national ambient air quality standards (NAAQS) for a CAA criteria pollutant are not being met. These areas are called nonattainment areas. Nonattainment NSR for major sources of certain pollutants also applies in the federally designated ozone transport region (OTR), which consists of 11 northeastern States and Washington, D.C.[4] PSD applies to major sources located in areas where air quality is currently acceptable—i.e., where the NAAQS for CAA criteria pollutants are being met. These are called attainment areas. Because nonattainment areas have poorer air quality, nonattainment NSR requirements are generally more stringent than PSD requirements.

III. IMPACT ON INVESTMENT IN NEW AND EXISTING UTILITY AND REFINERY GENERATION CAPACITY—AND ENERGY EFFICIENCY

The EPA begins by examining the question of whether the NSR program has an impact on investment in projects that would increase or preserve utility and refinery generation capacity or that would improve energy efficiency. We received extensive comments on this issue, reflecting widely varying views on whether there is an impact and, if so, on its nature and extent.

In general, comments made by both the electric utility industry and the petroleum refining industry consistently assert that the NSR program has a significant and adverse impact on investment in expanding and preserving capacity, as well as on energy efficiency.[5] These commenters assert that the program is in need of funda-

[3] The term NSR usually refers to the overall program, but is sometimes also used as shorthand to refer to nonattainment NSR, which may be a source of confusion. In this document, we will use NSR to refer to the general program (both nonattainment NSR and PSD), and will use nonattainment NSR when referring specifically to NSR for nonattainment areas.

[4] Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Washington, DC.

[5] These comments were consistently raised by companies representing virtually all types (*e.g.*, coal-fired; oil-fired or gas-fired) and sizes of electric generating facilities. See, e.g., Comments of the Clean Energy Group (CEG) [II–D–291]; Comments of the Utility Air Regulatory Group (UARG) [II–D–303]; Comments of Class of '85 Regulatory Response Group (Class of 1985 Group) [II–D–268]; Comments of National Rural Electric Cooperative Associations (NRECA) [II–D–322]. The members of these groups, as well as individual utilities that filed comments expressing the same conclusion, span the entire United States. See, e.g., Comments of Northeast Utilities Service Company (NUSCO) [II–D–331]; Comments of Cinergy [II–D–270]; Comments of Sunflower

mental reform. Other industries (as discussed in Section IV below) made similar assertions, as did some State permitting authorities. These commenters said that investment is hindered by (1) regulatory uncertainty and lack of flexibility resulting from alleged recent policy "re-interpretations" related to the applicability of the program's requirements; and (2) the added costs and delays imposed by the NSR process.[6] Other commenters, including environmental groups and some State and local permitting authorities, expressed the opposite view. They assert that NSR does not appear to be significantly hindering such investment, adding that NSR has resulted in large benefits to the environment while allowing for increased energy and/or fuel supplies.[7] One environmental commenter does not believe that there is sufficient information to conclude that NSR is a primary factor driving decisions to invest or not to invest in capacity.[8]

This section discusses our conclusions based on a review of the available data and comments received regarding investment in new capacity and energy efficiency. Because the issues associated with new and modified source permitting differ, this paper will discuss separately the impact on new sources and the impact on existing sources undergoing changes.

A. New Sources

Focusing first on the impacts of NSR on investment in new capacity, the EPA finds that NSR does not appear to have a significant impact on investment in new utility or refinery plants. The discussion below indicates that, for utilities, significant new capacity has been permitted in recent years and substantial additional greenfield capacity is planned. For refiners, decisions about whether to construct new greenfield refineries are primarily driven by economic and environmental considerations. It does not appear that NSR has a significant impact on these considerations.

1. Utilities

For electric utilities, significant new sources were permitted in recent years (dominated by natural gas-fired systems) and more are planned. The background paper noted current plans of certain companies to bring into service units producing more than 120 Gigawatts (GW) in the coming years. An analysis by the NorthBridge group, prepared for the Clean Air Task Force, uses RDI's NewGen data base to estimate that it is likely that 214 GW—and possibly as much as 400 GW—of new generating capacity will come online before 2005, based on a survey of data on plants at various stages of development.[9] Several State commenters presented similar data. For example, New Jersey stated that it had permitted over 2500 MW of new electric generation since July 1999, and had proposed to approve another 1700 MW in July of 2001[10]. Another 5800 MW of applications were under review, and another 2000 MW of projects were in the pre-application meeting stage. These projects cover 22 facilities and 49 units. This 12,000 MW will result in a 60 percent increase over the 18,000 MW of existing generating capacity in New Jersey.[11] Other States and environmental group commenters presented similar data.[12] Although most of these projects will be subject to NSR, the program does not appear to be hindering their development.

In general, the DOE's experience is that far more capacity is planned than is ever actually realized. As it related to the analysis by the NorthBridge group, the DOE

Electric Power Corporation [II–D–292]; Comments of Tri-State Generation and Transmission Association [II–D–335]; Comments of West Associates [II–D–216]; Comments of Salt River Project (SRP) [II–D–320]. Even waste-to-energy facilities agreed with this conclusion. See e.g., Comments of American Ref-Fuel [II–D–214]. The refining industry offered similar comments. See NPRA Letter to Stephanie Daigle, EPA, 7/23/2001.

[6] See comments by Michigan Department of Environmental Quality, representing a workgroup including Alabama, Michigan, North Carolina, South Carolina, Virginia and West Virginia permitting staff. [II–E–09].

[7] For other State comments, see STAPPA/ALAPCO, [II–D–313], CARB [II–D–468], RAPCA [II–D–302], Wisconsin, Missouri, et. al. For environmental groups, see, Clean Air Task Force [II–D–236], NRDC, Sierra Club [II–D–437], et. al.

[8] See Natural Resources Defense Council (NRDC) comments [II–D–267] at 1.

[9] This 214 GW increase would represent a 30 percent increase over the current installed capacity level, and would restore national reserve margins to about 25 percent, from a low of 8 percent in 1999.

[10] See New Jersey DEP comments [I1–D–310].

[11] The State of Kentucky, in fact, put a hold on any new permit applications for electrical generation sources until it can analyze the environmental impacts of the large volume of pending permit applications.

[12] See, e.g., California Air Resources Board (CARB) [II–D–468], Georgia Department of Natural Resources (DNR) [II–D–341], Wisconsin DNR [II–G–71], STAPPA/ALAPCO [II–D–303], Clean Air Task Force [II–D–236], NRDC [1I–D–267] and other similar comments.

projects in its 2001 Annual Energy Outlook that only a small fraction of the capacity estimates by NorthBridge will actually come on line by 2005. For the period of 1999 to 2005, DOE estimates the following:

• Overall generation will increase from 3386 billion kilowatt-hours (BKWH) to 3810 BKWH.

• Overall capacity will increase by 74 GW (from 745 gigawatts (GW) to 819 GW).

• For coal-fired power plants, capacity will decrease slightly (from 306 GW to 301 GW), while generation increases from 1833 BKWH to 2085 BKWH, as existing units increase their hours of operation.

• For gas-fired plants, combined-cycle units will increase in capacity from 20 GW to 50 GW, while generation increases from 371 BKWH to 584 BKWH.

While these data indicate continued expansion in new generating capacity, some industry commenters assert that NSR can nevertheless introduce costs and delays to the process of bringing new generating units online, as well as have an impact on fuel supply flexibility. Utilities cited implementation of the requirements for preconstruction monitoring, modeling, and consultation with Federal Land Managers, saying that the processing time by Federal, State and local governments and potential permit appeals can result in significant costs and delays in obtaining a permit. In particular, industry commenters, as well as some State permitting authorities, attribute a significant portion of the delay in obtaining NSR permits to the large body of NSR guidance that has been issued over the course of many years, by both EPA and State agencies administering delegated programs. This guidance frequently is case-specific in nature. Many commenters consider the guidance to be ambiguous and, in some cases, inconsistent.

Among the various aspects of the NSR program that industry commenters more specifically identified as concerns for new sources included the following:

• How to determine which emissions control technologies qualify as best available control technology ("BACT") or lowest achievable emissions rate ("LAER") technology using EPA's "top down" policy and the Agency's BACT/LAER clearinghouse.

• Procedural concerns about guidance issued by Federal Land Managers related to permitting near Class I areas.

• The limitation on construction activities prior to issuance of a permit, which is of particular concern when (1) the permit undergoes lengthy appeals processes, or (2) the climate is cold and the construction season is thus shorter.

• The cost and availability of offsets in nonattainment areas. Commenters, particularly in California and New York, noted that shortages in available offsets have the potential to significantly increase the cost of NSR permitting in certain limited areas. Permitting authority commenters noted that offsets represent from 1–6 percent of the cost of a new power plant.[13]

Commenters further stated that NSR control requirements affect fuel supply choices for new installations. They point out that the cost of air pollution control represents a much greater proportion of the cost of construction at coal-fired facilities than at gas-fired plants.[14] Operation and maintenance costs are also higher. They believe this discourages investment in new coalfired plants.

Other stakeholders offered a different view. Several State and local permitting authorities noted that the NSR process can generally be accomplished in a reasonable time, and within the same timeframe as the other elements involved in planning of a typical electric generator project.[15] Some States reported acceleration of permitting times for new utility sources consistent with that reported in the EPA Background Paper.[16] One State commenter suggested that the perception that NSR is lengthy, cost-intensive, and uncertain is really not the norm, though it can be true in exceptional cases.[17]

In EPA's experience, NSR has, in some individual cases, impeded new power projects. However, as a general matter, available information indicates that NSR typically does not represent a significant barrier to the construction of new electricity plants. As for the impact of NSR on fuel choices for new facilities, EPA notes

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[13] STAPPA/ALAPCO comments [II–D–313] at 6.

[14] The primary air pollution control requirement commonly imposed on natural gas combustion is selective catalytic reduction, which adds about $30 per kilowatt to the cost of a combined cycle generation system. New pulverized coal systems require electrostatic precipitators or fabric filters for particulate matter control, scrubbers for sulfur dioxide control, selective catalytic reduction for nitrogen oxide control, and perhaps additional control technology for air toxics. Cumulatively, the systems needed for coal-based generation cost over $200 per kilowatt, and add about 20 percent to the cost of a new coal-fired system. For a 1000 MW unit, these translate into a cost of $200 million.

[15] See, e.g., STAPPA [II–D–313] at 3, New Jersey DEP [II–D–310] at 2.

[16] See CARB [II–D–468] at 4.

[17] Wisconsin DNR comments [II–G–71] at 1.

that NSR typically does not require significantly greater levels of control at new coal-fired plants than the recently updated NSPS for large electric generating units. Thus, NSR itself is not the only driver with regard to air pollution control costs at new coal-fired units and does not appear to significantly influence fuel choices at new facilities.

2. Refineries

As noted earlier, the construction of new "greenfield" petroleum refineries in the near future seems unlikely for various economic and regulatory reasons, primarily unattractive profit margins. Industry has reported that the rates of return for refineries have averaged about 5 percent in the last decade, roughly equivalent to the return from a passbook savings account, but with much greater risk. As a result, building new plants at new sites is highly unlikely.[18] The EPA agrees with this assessment. Moreover, while any new refinery would be required to obtain an NSR permit, the available information does not indicate that NSR permitting is among the most significant impediments to the construction of new refineries. Refinery commenters indicate that any additional U.S. refinery capacity must come from either efficiency improvements or expansion at existing refineries (discussed below).

B. Existing Sources

The vast majority of concerns about NSR raised during the review pertained to existing sources. As discussed below, the EPA believes that commenters have identified areas where NSR can discourage investment in both preserving and maintaining utility and refinery generating capacity as well as in improving energy efficiency and expanding capacity.

1. Utilities

With respect to existing sources, comments from across the spectrum of the utility industry consistently asserted that the NSR program imposes significant burdens on the utility practices necessary to maintain the safety, availability, efficiency and reliability of the electricity supply at existing sources. They further assert it can have a highly negative impact on the nation's power supply. The result, they conclude, is that the program hinders investment in projects intended to expand and preserve generating capacity at existing electric generation units. In addition, as discussed below, many utility commenters believe that the current NSR program has actively discouraged efficiency improvement projects, which they believe not only can have net environmental benefits, but also can provide an effective short-term response to tight reserve margins at many locations in the United States. On the other hand, environmental groups do not believe that there is sufficient information to conclude that NSR is the primary factor driving decisions to invest in new capacity at existing sources or that, absent NSR, significant investments would have been made that are presently not being made in recapturing lost existing capacity due to deterioration of equipment. This section examines more closely the capacity issues at electric utilities, followed by the energy efficiency issues.

a. Impact on Utility Projects to Maintain the Availability, Reliability, and Safety of the Electric Power Supply

(i) NSR Applicability.—The utility industry comments predominantly focused on the exclusion from major NSR permitting requirements for activities that represent "routine maintenance, repair and replacement." They asserted that, in recent years, EPA has narrowed its interpretation of this exclusion to the point where NSR potentially applies to repair and replacement activities that are customarily undertaken within the industry to assure the availability, reliability, and safety of power plant operations. Commenters believe that under such an interpretation NSR would be required whenever the work involved: (1) a component that is replaced infrequently in the life of an industrial facility; (2) a component that is large and expensive (in absolute terms); or (3) a replacement component that is better designed and will improve the availability or efficiency of the facility.

Thus, according to the utility commenters, because electricity generation units are inherently large, complex, and expensive (in absolute terms), most power plant repair and replacement activity would not be covered by the exclusion. Because of the costs and potential delays associated with NSR, they believe that this has discouraged activities intended to maintain the reliability, availability, and safety of existing power plants; and/or has required generators to limit the output of their power

[18] See, Testimony of the National Petrochemical and Refiners Association (NPRA) before the Senate Subcommittee on Clean Air, Wetlands, Private Property and Nuclear Safety on Apr. 5, 2001.

plants to avoid triggering NSR, regardless of their capacity, in order to maintain the units during their normal useful lives. NSR costs and delays are of particular concern to commenters for such changes at existing units because (1) while certain projects might be relatively inexpensive absent NSR, they believe the cost of controls resulting from NSR can make them cost-prohibitive to undertake, which, in turn, can adversely affect the availability and reliability of plant operations and discourage such projects, and (2) they believe that units may need to be offline until permitting can occur, so delays in permitting can have significant impacts on energy supply through lost generation during this time.

Although utilities stated that NSR-required controls are expensive relative to the gains associated with projects that might trigger NSR, other commenters noted that these costs are small compared to the company's revenue. The Clean Air Task Force submitted a study by MSB Energy Associates performed on a sample of 51 existing coal-fired utility units. The study concludes that if these units triggered NSR and had to install BACT-level controls, the cost would be modest relative to the size and revenue level of the companies.[19] In the commenters' view, this impact is exchanged for significant environmental benefits, estimated at 2.8 million tons per year of sulfur dioxide (SO_2) (22 percent of all power plant SO_2 emissions in the United States) and 1.0 million tons per year of NOx (19 percent of all power plant NOx emissions in the United States).

According to industry, thousands of repair and replacement projects are undertaken by facilities each year and that, as a result, NSR permitting is potentially triggered early in the life of virtually every electric utility plant, and then repeatedly thereafter.[20] The industry commenters submitted information about the types of projects they stated that they typically undertake, which they maintain are required to ensure reliability, availability, or safety of their facilities, but which they believe EPA would classify as non-routine and therefore would potentially be subject to NSR if they resulted in a significant net emissions increase.[21]

For example, a survey undertaken by the Tennessee Valley Authority (TVA) reported the frequency with which particular repair and replacement projects are undertaken within the electric utility industry.[22] The, TVA survey covered approximately 20 percent of the electric utility industry—219 units totaling about 80,000 MW—and included a review of case studies and statistics regarding cyclone replacement, balanced-draft conversion, reheater replacement, and economizer replacement. For example, their survey States that, at the 190 units in the survey that had reheaters, there were 213 reheater replacement projects (some reheaters were replaced more than once). At the 202 units in the survey that had economizers, there were 98 economizer replacement projects. For both components, replacements occurred as early as 5 years after initiation of a unit's commercial operation, or as late as 40 to 50 years. Similarly, at 151 boilers originally constructed as forced draft systems, utilities replaced 79 systems with balanced draft systems, primarily to address "equipment degradation, maintenance problems, health and safety concerns, and pollution control requirements."[23] Finally, the TVA survey reported that, since 1979, 300 cyclones out of 701 had been replaced at the 96 electricity-generating stations in the United States powered by cyclone boilers. UARG similarly reported a more complete, recent census of the entire coal-fired steam electric generating industry.[24] This census sought industrywide information regarding the frequency of maintenance, repair and replacement activities that they believe EPA considers non-routine. The census results are reported to show:

• The industry has undertaken tens of thousands of such maintenance, repair or replacement activities;

Every unit in the industry has undertaken such activities;

• Approximately 50 percent of the units in the industry will have undertaken such activity within 5 years of the unit's in-service date;

• Each unit in the industry undertakes on average annually at least one such activity.

In short, in the view of many industry commenters, an inappropriately narrow routine maintenance exclusion would not exclude many common maintenance projects. According to these commenters, this would leave nearly every coal-fired generating unit in a constant state of obligation to evaluate whether each of these

[19] See Clean Air Task Force Comments [II-D–236], Appendix D.

[20] UARG Comments [II–D–303] at 29–32.

[21] UARG Comments [II–D–303] Attachment C.

[22] See Jerry Golden, TVA, Routine Maintenance of Electric Generating Stations (February 2000) ("TVA 2000 Report"), described in UARG Comments [II–D–303] at 29–31.

[23] TVA 2000 Report at 25.

[24] UARG Comments [II–D–303] at 31–32.

numerous projects would trigger NSR, and if so, whether the costs associated with NSR (including, if applicable, the costs of add-on controls and potential downtime) would render such projects cost-prohibitive. As discussed below, if such projects are found to be cost prohibitive, commenters predict steady deterioration of existing capacity, and limited investment in the recovery of such capacity at existing sources. Many industry commenters echoed this conclusion and asserted that the situation is unacceptable and must be corrected to reflect the real environment surrounding routine maintenance within the electrical utility industry."[25]

On the other hand, environmental group commenters and some permitting authorities felt that the routine maintenance exclusion is appropriate. They believed that a less narrow exclusion would allow the exception to swallow the rule. In this vein, commenters expressed concerns that large-scale capital projects, such as major life extension projects, should not qualify as routine.[26] One of these commenters expressed concern that a facility could be virtually rebuilt without triggering NSR under industry's preferred interpretations of the routine maintenance exemption[27].

After reviewing the comments, the EPA notes that there are differing opinions amongst the commenters about the appropriate scope of the routine maintenance exemption and the resulting NSR impacts. In determining whether an activity is "routine" for purposes of being excluded from NSR, EPA consistently has taken a case-by-case approach, weighing the nature, extent, purpose, frequency and cost of the work, as well as other relevant factors. Nevertheless, the Agency recognizes that many industry commenters expressed uncertainty about the scope of the routine exclusion and argued that this uncertainty will cause them to delay or forego projects critical to maintaining the availability, reliability and safety of their facilities. In light of the volume of anecdotal evidence presented, the EPA concludes that concern about the scope of the routine maintenance exclusion is having an adverse impact on projects that affect availability, reliability, efficiency, and safety. Changes to the NSR program that add to the clarity and certainty of the scope of the routine maintenance exclusion will improve the process by reducing the unintended consequences of discouraging worthwhile projects that are in fact outside the scope of NSR.

(ii) Energy Impacts.—According to utility commenters, the energy impact of an inappropriately narrow NSR routine maintenance exclusion would be adverse and potentially quite significant. In addition, the industry commenters stated that an inappropriately narrow exclusion would leave many activities potentially subject to NSR. This circumstance, they believe, would result in limited alternatives for utility managers. They describe three alternatives.

First, utilities could go through the NSR pre-construction permitting process. The principal complaints against this alternative were protracted processing delays and the attendant costs, including the costs of pollution control retrofits.[28] In addition, commenters feared that, if the interpretation of routine were to be narrowed, thousands of projects would trigger NSR per year, and would result in even more substantial delays by flooding the permit process with more permit applications than it has the capacity to process quickly.

Second, a company could accept enforceable emissions limits (through a "minor" NSR permit) in the form of a cap on emissions from the affected units.[29] Commenters stated, however, that acceptance of such a cap would require a utility to limit the affected unit's hours of operation and production rates to representative emission levels just prior to the change, which could restrict the electricity supply in a particular area.[30] Commenters also could limit emissions by adding pollution control technology, but commenters felt this was also not a workable NSR avoidance strategy because it also could be infeasible, cost-prohibitive, and would only be a

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[25] NRECA Comments [II–D–322] It 14–15; see also Class of 1985 Group Comments [II–D268] at 9 ("Electric generating plant personnel have been placed in the untenable position of not being able to correct and improve the reliability and efficiency of their plants, resulting in compromised safety to plant employees and the general public, without risking an enforcement action."); Dairyland Comments (II–D–324) at 4 (EPA's current "interpretation may compromise the reliability and efficiency of existing plants and could undermine the preservation of a diverse energy supply.").

[26] See, e.g., RAPCA [II–D–302], Adirondack Council [II–D–136], Public Citizen [II–D327].

[27] Public Citizen [II–D–327].

[28] See, e.g., Class of 1985 Group Comments [II–D–268] at 9–10.

[29] Commenters also complained of delays in the minor NSR permitting process (an average of 3–8 months in one utility's service area.) See Jerry L. Golden & Donald P. Houston, TVA, Impacts of EPA's Reinterpretation of New Source Review Requirements—Potential Loss of Generating Capability on the TVA System, at 8 (July 19, 2001) ("TVA 2001 Report") (Attachment E to UARG Comments [II–D–303]).

[30] See UARG Comments at 39–42; see also EPA Background Paper at 7.

temporary solution.[31] Moreover, commenters stated that the delays associated with the minor NSR process required to create the limit still severely impact a unit's ability to replace components necessary to get back online quickly after a forced outage.[32] For example, when a turbine rotor shaft cracks or slag falls and destroys a boiler floor, the utility must repair the component as quickly as possible and restore the unit to service. Commenters claim that, if the necessary repairs were not considered routine maintenance, repair and replacement, the repair could not be made until the source obtained an NSR permit. In the meantime, the commenters believe that the utility could lose the entire capacity of the unit, which could endanger the stability of the electrical grid and create a risk of regional blackouts.[33]

Commenters also argued that avoiding NSR by accepting caps on emissions through operational limits would constrain electrical system operators' flexibility to deliver necessary electricity at the least cost. In this regard, several utilities analyzed their systems to estimate the restrictions on their ability to produce electricity, had what they consider to be a narrow interpretation of the routine exclusion been applied over the last 20 years and had the utilities elected to obtain minor NSR permits limiting generation to recent levels in every instance they undertook certain replacement projects.

For example, TVA (serving approximately 2.3 million homes in the Tennessee River Valley),[34] reported that, over the last 20 years, it would have lost 32 percent of its coal system's energy capability, or 34 million megawatt-hours (MW-hr) annually. In a similar analysis, the Southern Company found that, by the year 2000, it would have had an energy shortfall of 57.5 million MW-hr, and that it would not have been able to meet 38 percent of its customer demand.[35] Similarly, First Energy estimated that it would have lost 39 percent of its coal-fired generating capacity between 1981 and 2000.[36] West Associates (a western utility with a younger fleet of generating units) estimated a loss of 27 percent of generating capacity of one of its plants just in the next 6 years. West Associates also estimated that, after 10 years of operation under this "cap system," the Western System Coordinating Council (WSCC) would have lost 65 million MW-hr of generating capacity, or the equivalent of 32 power plants with a net capacity of 250 MW each.[37] The National Rural Electric Cooperative Association (NRECA) estimated that, in one maintenance cycle, the loss of capability for the approximately 21,000 MW of cooperative-owned plants would be 12 percent to 24 percent.[38] Nationally, using this analysis method, one commenter stated that it would take 200 new 500 megawatt power plants just to make up the lost capacity, that is, to stay at the current levels of available supply.[39] Maximizing the utilization of existing generation capacity can be critical to ensuring the ability of utilities to meet consumer demand in peak periods.

Third, according to industry commenters, a company could simply choose not to undertake the needed maintenance, repair and replacement projects in question, so as to avoid triggering NSR. They believe this would result in a loss of electricity generating capacity, because delayed and foregone maintenance leads to a decrease in availability and reliability.

In addition, commenters suggest that such a decrease also could have a negative impact on the energy efficiency of the unit and the overall efficiency of a utility system. This is because, if a larger utility unit becomes unavailable during a period when it would have been utilized to meet consumer demand, then multiple smaller, less efficient units often must be utilized in its place.[40] One utility commented that only through maintenance of highly efficient low-cost baseline generation is the retirement of more inefficient units possible.[41] The commenter asserted that less effi-

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[31] See UARG comments at 39–42.

[32] See, e.g., Class of 1985 Group Comments [II–D–268] at 7, TVA 2001 report at 7 (Attachment E to UARG Comments [II–D–303]).

[33] See, e.g., id.

[34] TVA 2001 report at 12–14.

[35] Southern Company, The Dismantling of Energy Supply Capacity Through New Source Review (Attachment D to UARG Comments [II-D–303]).

[36] First Energy Comments [II-D–261] at 1.

[37] West Associates Comments [II-D–216] at 7.

[38] NRECA Comments [II–D–322] at 7. Other commenters that submitted similar analyses include: Minnesota Power Comments [II-D–165] (25 percent lost production); Dairyland Comments [II–D–324] at 7 (41 percent lost generating capacity); SRP Comments [II–D–320] at 6 (18.5 percent loss).

[39] See UARG Comments [II–D–303] at 39.

[40] See Ralph L. Roberson & Richard D. McRanie, Thoughts on Power Plant Efficiency, at 7 (Attachment F to UARG Comments [II–D–303]) (RMB Report); see also Class of 1985 Group Comments [II–D–268] at 5–6 (noting that utilization of base-loaded units displaces less efficient, more polluting plants).

[41] First Energy Comments [II–D–261] at 1.

cient units are more costly to operate and generally produce more pollution per unit of electric output.

EPA notes that the possible energy impacts predicted by industry commenters appear to flow from the industry's reported uncertainty regarding the scope of the routine maintenance exclusion. Consistent with our conclusion in the previous section of this report, we conclude that concern about the scope of the routine maintenance exclusion is having an adverse impact on projects that would improve the reliability and availability of existing electric generating facilities. We also note that, when catastrophic forced outages have occurred in the past, the Agency has consistently worked with industry and State and local permitting authorities to allow the facility to get the unit back and running quickly.

b. Impact on Efficiency Improvement Projects

(i) NSR Applicability.—With respect to the issue of energy efficiency, a significant number of industry commenters stated that an inappropriately narrow routine maintenance, repair and replacement exclusion would prevent electricity generators from taking advantage of opportunities to improve their generating efficiency. One measure of such efficiency is "heat rate," or the amount of fuelbound energy required to produce a unit of electrical power (typically expressed in million BTU per kW-hr). Improving an electric unit's efficiency—e.g., its heat rate—means that less fuel is required to produce the same amount of electrical power, reducing pollution per unit of production output. Alternatively, improved efficiency may allow a unit to produce more electricity for the same amount of fuel burned (*i.e.*, with no greater amount of emissions). New electric generation technologies often lead to energy efficiency improvements, but industry raised concerns that applying these new technologies (*i.e.*, replacing boiler or turbine components with components of better design and materials) often could trigger NSR—in some cases even if the unit's emissions rate does not increase—because the source uses the more efficient unit more than it used the old one.

These commenters stated that the turbine blade project that was the subject of the Detroit Edison applicability determination is a good example of such a project.[42] Industry reports that, under a voluntary self-reporting program initiated by the Energy Information Administration (EIA), utilities have reported numerous projects that are expected to increase efficiency.[43] Commenters cited as examples projects ranging from load optimization programs and improved boiler controls to replacing turbine blades and rotors, to upgrades or replacements of components like superheaters and condensers.[44]

Industry commenters noted that EPA views such energy efficiency projects as the Detroit Edison turbine blade upgrade as "markedly different from the frequent, inexpensive, necessary, and incremental maintenance and replacement" of deteriorated components and, therefore, not within the scope of the routine maintenance exclusion.[45] Industry commenters expressed concern that this could result in the discouragement of energy efficiency improvements because they could be subject to NSR. For utilities, this is a particular concern in any jurisdiction that has not incorporated the WEPCO rule emission increase methodology because the "actual-to-potential" test applies in these jurisdictions.[46] In non-WEPCO jurisdictions, and in all jurisdictions for nonutility activities, industry commenters said that NSR could apply to any project that both corrects availability/reliability problems and improves efficiency (because of the belief that any project that corrects availability/reliability problems could result in an emissions increase under the actual-to-potential test), and to any efficiency improvement project at a unit that is not at the very top of a system's loading order. Even for units that are at the top of the loading order of a particular system, like Detroit Edison's Monroe units, industry commenters expressed concern about whether any efficiency improvement could be shown not to

[42] EPA Background Paper at 28.

[43] RMB Report at 6 (Attachment F to UARG Comments [II–D–303]).

[44] Industry commenters state that most energy efficiency improvements can be linked with tangible benefits to the environment and that unless the power source is in close proximity to the process in which energy efficiency is improved, the emissions benefits are not necessarily local. If the power source is a grid, it may not be possible to predict where all the benefits will occur, nor what their magnitude would be. Nevertheless, commenters believe that energy efficiency should be an important aspect of meeting national air pollution goals because the energy saved is energy that would have otherwise been generated.

[45] EPA Background Paper at 28 (citing Detroit Edison Applicability Determination, May 23, 2000.

[46] Under EPA's "WEPCO rule," NSR is not triggered for existing utility sources unless there is a significant net increase in actual emissions using an actual to predicted future actual methodology.

increase emissions, because an efficiency improvement almost always makes the improved unit more attractive to run.

Utility commenters stated that the Detroit Edison applicability determination discourages utilities from undertaking efficiency improvement projects.[47] They suggested that utilities are likely to forego efficiency improvements in order to avoid the uncertainty, delays and potential costs associated with NSR applicability. One commenter sought to illustrate this point in responding to the EPA Background Paper's inquiry regarding whether NSR applicability alters the economics of efficiency improvement projects by evaluating a typical turbine efficiency improvement project. This evaluation showed that such a project would cost approximately $937,000 for a 250 MW unit, and would be expected to yield additional revenues of $21.5 million (present value). For such a unit, however, the commenter determined that NSR applicability would result in expensive retrofits, with a capital cost (i.e., excluding operation and maintenance of the retrofits) approximating $68.4 million.[48]

Industry commenters said that discouraging efficiency improvement projects also results in more emissions than if the projects could go forward without NSR. They argue that, on a megawatt basis, efficiency improvements reduce pollution,[49] and that, even if utilization increases at the unit with improved efficiency, the dynamics of economic dispatch of electric generating units mean that the increased utilization at that unit necessarily displaces less efficient, and therefore more-polluting, plants.[50] Thus, the industry concludes that discouraging efficiency improvements almost always results in higher emissions than if these improvements had been made. As an example, the Detroit Edison case was again cited, where the use of the more efficient blades would have permitted each generating unit to produce the same amount of electricity as it had in 1994 while burning 112,635 fewer tons of coal. The result, according to commenters, would have been a reduction of 1,826 tons per year (tpy) in SO_2 emissions, 1,402 tpy in NOx emissions, and 259,111 tpy in carbon dioxide ($C0_2$) emissions, assuming that input design parameters (maximum heat input and fuel consumption specifications) remained the same. Detroit Edison estimated that more than 1,000 other electric utility units in the United States have the capability to achieve similar reductions through similar turbine blade replacements and other projects; thus, extrapolating based upon these estimates, they predict that by encouraging the adoption of blading efficiency improvements, CO_2 emissions would be reduced by 81 million tons per year or more, provided input design parameters (maximum heat input and fuel consumption specifications) remained the same. They predict that SO_2 and NOx emissions would also be reduced significantly.

In contrast, commenters from environmental groups believe that NSR treats energy efficiency improvement projects appropriately. They stated that NSR only applies when a project results in an emissions increase and that the types of projects discussed above where significant reductions are achieved would not trigger NSR. However, if an energy efficiency project also results in a significant emissions increase, these commenters felt that it would be inappropriate to exempt the increase from review under NSR.[51] One commenter also questioned whether NSR is the predominant factor in influencing a decision about whether to proceed with an efficiency project, noting that some analysts believe that the regulation of utility rates—and specifically their treatment of cost recovery—has lessened the incentive for heat rate improvements.[52]

In reviewing the information regarding energy efficiency projects, the EPA concludes that NSR may discourage some energy efficiency improvements. EPA notes that as long as utilization remains constant, energy efficiency improvements can result in significant emissions reductions. Such projects would not trigger NSR if there were not a significant emissions increase.[53] Because such projects are not subject to the NSR regulations, NSR generally has a negligible impact in such cases. However, as noted above, energy efficiency improvements are often associated with increases in utilization, because the more efficient generating units are dispatched more often. Efficiency improvements can also result in an increase in capacity or availability. In such cases, there can be local emissions increases that trigger NSR

[47] See, e.g., Class of 1985 Group Comments [11–D–268] at 5; UARG Comments [II–D–303] at 45.

[48] See Comments of Xcel Energy [II–D–213] at 6–7.

[49] EPA Background Paper at 28.

[50] See Class of 1985 Group Comments [II–D–268] at 5–6; see also FirstEnergy Comments [11–D–261] at 1–2.

[51] See, e.g., July 20 testimony of John Walke, NRDC.

[52] NRDC Comments [II–D–267].

[53] This was the case in Detroit Edison, where there was no expected increase and therefore the proposed project did not trigger NSR. [See Detroit Edison Applicability Determination]

if the projects are not routine maintenance. For example, in Detroit Edison, if a 5 percent increase in operation were to result, actual increases on the order of 800 tons of NOx and 2000 tons of SO_2 would occur. Even if these emissions increases occur at the same time as emissions decrease somewhere else, some commenters expressed concerns about the localized impacts of potentially large emissions increases, and felt that review under NSR was needed to address them.

Congress provided that where physical changes at a plant result in significant increases in air pollution, these plants should go through NSR and take steps to control emissions. Even if a physical change is relatively inexpensive when compared to the cost of the controls that are projected to result from NSR, the change could still result in emissions increases that Congress believed should undergo review. However, as noted in the example turbine efficiency improvement project above, and echoed throughout many comments, the costs associated with NSR, particularly the costs to retrofit pollution controls, can render these projects uneconomical. Thus, the EPA finds that NSR discourages some types of energy efficiency improvements when the benefit to the company of performing such improvements is outweighed by the costs to retrofit pollution controls or to take measures necessary to avoid a significant net emissions increase. The EPA recognizes the need to promote the development of efficient and more environmentally friendly designs.

On the other hand, it is also clear that a wide range of activities at an electric utility can have energy efficiency benefits, from everyday maintenance to major capital projects. In general, the EPA encourages efficiency improvements wherever feasible. However, the scope and magnitude of some of the kinds of changes, their impact on recovering capacity that had been lost to deterioration of equipment, their impact on significantly extending the life of the boiler, turbine, etc., and the resulting significant emissions increase, necessitates that certain projects which may result in efficiency improvements, must be reviewed under NSR. Though projects of this magnitude still may go forward once their air quality impacts are addressed, the EPA finds that NSR can discourage companies from undertaking them.

(ii) Energy Impacts.—The ICF report in support of the EPA Background Paper referred to various data, such as those of the National Coal Council (NCC) May 2001 report, which estimate that repairs and replacements that improve efficiency at existing coal-fired facilities could result in an increase in capacity of 5 percent to 10 percent. Applied across the entire coal-fired electric generation capacity of the United States (over 300 GW) this would result in an additional capacity of 15,000–30,000 MW. This is the equivalent to 30–60 new 500 MW plants or enough power for 10–20 million homes.

Similarly, as noted in the EPA Background Paper, the NCC report found that coal-fired units over 20 years of age had been substantially derated, and concluded that: "If all existing conditions resulting in a derating could be addressed, approximately 20,000 MWs of increased capacity could be obtained from regaining lost capacity due to unit deratings." Likewise, the NCC reported that 20,000 MW of additional capacity could be gained by "increasing heat input and/or electrical output from [existing] generating equipment." Moreover, the NCC found that this restoration and increase of capacity from existing units could only be economically viably pursued by the facility owners if, among other factors, the increased availability and/or electrical output would clearly not trigger NSR. Other industry representatives supported this estimate.

Conversely, environmental group commenters expressed the view that such investments are not as profitable as investments in completely new electric generation capacity and that this is why the industry is not pursuing them, as opposed to NSR being the major impediment.[54] They also estimate that the emissions reductions from efficiency improvement projects would be small compared to the reductions that would be achieved if NSR applied.

In conclusion, for the utility industry, with respect to existing sources, and in contrast to new sources, the EPA finds that the available information indicates that the NSR program is having an adverse impact on investment in both electric generation capacity and energy efficiency. While there are only limited data that prove that NSR has resulted in the cancellation of otherwise economical projects of either type, a significant number of industry commenters presented a variety of projects at existing sources that could have increased capacity, improved reliability, or enhanced efficiency, but were made uneconomical due to delays and costs associated with NSR. The EPA finds many of these cases to be credible and based on real-world examples, and believes that they demonstrate that NSR has an adverse impact on such investment at existing sources. It is reasonable to conclude that the foregone investment has resulted in foregone capacity increases through decreased

[54] Clean Air Task Force comments [II–D–236] at 49 and App. C.

reliability and availability that are not recovered, and through foregone efficiency improvements.

2. Refineries

Turning to the question of NSR impacts on investment in capacity at existing refineries, the EPA finds that the comments again highlight areas where NSR may adversely impact investment in capacity and energy efficiency projects. These areas are examined further in this section in order to assess their nature and extent.

Refinery commenters observe that the refining industry differs considerably from the electric utility industry in several respects. For example, it is operating much closer to full capacity than the utility industry, and it is not transitioning from an economically regulated basis to a market basis. Even while operating at very high utilization rates, commenters noted that the industry must be able to respond rapidly to changes in raw material availability, market demands, and environmental requirements. API explained that, "[r]efiners are required by law to make adjustments to fuel specifications from one season to another, produce fuels meeting multiple specifications in various regions of the country, and reconfigure to refine cleaner burning low sulfur diesel and gasoline, all while being able to supply fuels to meet constantly changing customer demand."[55] API suggested that these requirements necessitate frequent and rapid responses that may involve changes to a refinery's facilities and processes. Moreover, they note that, to meet demand for petroleum products and avoid market disruptions that can lead to shortages and price volatility, the refining industry must be able to maintain the availability, reliability, and safety of its facilities. NPRA's comments noted, "Refining operations are continuous and complex. They depend on the simultaneous operation of many individual, but inter-related, pieces of equipment ("units"). A delay or inability to change or improve operations of a single unit can have a significant cumulative impact on the refinery's ability to produce the fuels that its customers, and the national economy, rely upon.[56] To meet increasing demand without major construction of new refining facilities, commenters believe that the industry must improve the efficiency of its existing facilities, and it must engage in what one industry commenter described as a "continuous incremental improvement in production capacity."[57] Finally, as noted in the Background Paper, and above, with no new refineries likely to be built in the near future, assessing the impact of NSR on existing sources is particularly critical.

As with utilities, refineries maintain that the exclusion for "routine maintenance repair and replacement" has been narrowed by EPA in recent years and undercuts their ability to respond quickly to market changes and raw material availability. In addition, refinery industry commenters expressed concern about the test used to determine whether a change results in an emissions increase at non-utility source categories (i.e., the "actual to potential" test). In the view of many refinery commenters, the NSR program has the effect of constraining the industry's ability to (1) expand domestic refining capacity, (2) increase the supply of cleaner burning fuels, and (3) enhance energy efficiency.[58] The commenters said that under the NSR program, numerous common activities at a refinery—whether required to respond to demand changes, to repair or replace a broken piece of equipment, to improve efficiency, to expand refining capacity, or even to respond to environmental requirements—are potentially subject to NSR permitting.[59] One industry commenter states that hundreds of such activities are undertaken each year at existing U.S. refineries.[60] According to commenters, the lengthy, costly, and uncertain nature of the current NSR permitting process discourages those activities to which it potentially applies, or at least introduces significant delays in and constraints on the ability of the operator to make the required changes in an efficient and timely manner.

Refining industry commenters also noted that, in their opinion, the NSR emissions increase test for non-utilities (the "actual-to-potential" comparison) presumes that virtually any activity at a refinery increases emissions within the meaning of NSR, even if the activity were, in fact, to result in decreased actual emissions.[61] Thus, these commenters stated that, of the activities undertaken at a given refinery, only those activities ultimately deemed to constitute "routine maintenance, repair

[55] API Comments [II–D–134] at 1–2.
[56] See NPRA Comments [II–E–27] at 2.
[57] See BP America comments [II–D–307] at 2.
[58] NPRA letter to Stephanie Daigle, EPA, 7/23/2001.
[59] See API Comments [II–D–134] at 2; ExxonMobil Comments [II–D–418] at 2; NPRA Comments [II–E–27] at 3.
[60] See Marathon Ashland Petroleum LLC (MAP) Comments [II–D–253] at 2.
[61] See, e.g., ExxonMobil Comments [II–D–418] at 11 (commenting that actual-to-potential test "fabricate[s] emission increases" where no increases actually occur).

or replacement" might avoid NSR. However, according to industry commenters, few activities beyond the most mundane maintenance activities that may be undertaken each year at a given facility would be deemed "routine" under the NSR regulations.[62] One commenter maintained that the NSR program would apply NSR to any change that: (a) results in an increase in capacity or capacity utilization of an existing process unit; or (b) increases the efficiency or lowers the unit operating costs; or (c) extends the useful life of that unit . . ."[or (d)] increase[s] unit reliability."[63] According to industry, these are precisely the types of activities that U.S. refineries must constantly undertake to meet demand and minimize fuel supply disruptions and price volatility. Moreover, commenters suggest that the use of an actual-to-potential test encourages industry to maximize current actual emissions within permit limits, rather than providing incentives for emissions reductions.[64]

Industry commenters provided a list of activities that they reportedly undertake to maintain reliability, improve efficiency, and expand capacity that, in their view, are typically undertaken in the industry but, nevertheless, are potentially subject to NSR under the current program.[65] According to industry, the potential applicability of NSR, which they believe could encompass virtually any given project, tends to discourage operators from undertaking particular projects because NSR would add significant delays and costs.[66] Industry commenters observed that the EPA Background Paper's estimate for the length of time typically necessary to obtain an NSR permit did not include the time spent prior to submittal of a complete application. If such time is included, the length of the NSR permitting process in the experience of refinery commenters is at least 7 to 22 months, excluding any post-issuance appeals and challenges.[67] An industry commenter further predicted that, if the listed activities are viewed as non-routine, the refining industry, as well as other U.S. industries, would experience much longer lead times in obtaining NSR permits than already occur.[68]

Like utilities, refiners also raised the concern that there would be limited options for projects that are potentially subject to NSR.[69] They described three options. First, the operator could seek to obtain an NSR permit, accepting the delays, uncertainties, and potentially significant costs that commenters say are associated with such permits.[70] Alternatively, an operator could seek to "avoid" NSR by limiting emissions to past, actual levels through a minor NSR permit (a permit which, according to industry, can take 3–12 months to obtain), thus giving up refinery capacity and "deprive[ing] the source of the 'headspace' between actual and allowable emissions that is crucial to long-term operating flexibility and the ability to respond quickly to changes in demand."[71] A third option would be to simply cancel the project, and forego the projected benefit that was the reason for the project in the first place.

Overall, the comments submitted by refinery and other commenters during this review process emphasize their belief that by imposing significant costs and delays, the NSR program discourages investment in projects that are necessary to maintain the reliability of existing refineries, improve their efficiency, expand capacity, and respond flexibly to rapidly changing consumer demand for petroleum products. According to one commenter, what the industry most needs is certainty and flexibility in its efforts to meet both the energy needs of the Nation and environmental requirements.[72]

In contrast, NRDC's comments suggest that poor return on investment is more important than environmental considerations (of which NSR is only a small part, and is not specifically named by sources examined in the EPA Background Paper) in any decisions not to invest in new capacity.[73] They point to information presented in the Background Paper showing that, in recent years, there has been significant investment in refinery capacity at existing sources.

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[62] See ExxonMobil Comments [II–D–418] at 12; BP America Comments [II–D–307] at 2; MAP Comments [II–D–253] at 2.
[63] See BP America Comments [II–D–307] at 2.
[64] NPRA Comments [II–E–27] at Attachment 1, No. 1.
[65] See, e.g., NPRA comments [II–D–400] and API comments [II–D–134].
[66] NPRA Comments [II–E–27] at 2.
[67] See API comments [II–D–134] at 8.
[68] See ExxonMobil Comments [II–D–418] at 16.
[69] See BP America Comments [II–D–307] at 2.
[70] See id.; see also ExxonMobil Comments [II–D–418] at 18 (noting both the cost and scheduling impacts of NSR on project economics).
[71] See BP America Comments [II–D–307] at 2–3.
[72] See API Comments [II–D–134] at 2.
[73] NRDC comments [II–D–267] at 5.

As discussed above for utilities, the EPA notes that for refineries there are also differences of opinion amongst the commenters about the scope of the routine maintenance exclusion and the resulting impacts. In determining whether an activity is "routine" for purposes of being excluded from NSR, EPA consistently has taken a case-by-case approach, weighing the nature, extent, purpose, frequency and cost of the work, as well as other relevant factors. However, EPA acknowledges, as it did for utilities, that the comments report significant uncertainty about the scope of the "routine" exemption. Such uncertainty can result in the delay or cancellation of projects. Changes to the NSR program that add to the clarity and certainty of the scope of the routine maintenance exclusion will improve the process by reducing the unintended consequences of discouraging worthwhile projects that are in fact outside the scope of NSR.

A key difference between utilities and refineries is the fact that refineries use the "actual-to-potential test" for determining NSR applicability, while utilities generally do not. The EPA has reviewed a number of examples where projects could have provided capacity increases or energy efficiency improvements, and likely could have done so without increasing actual emissions, and in some cases the projects appear likely to decrease actual emissions. Such projects, if they occur at units operating below capacity, could trigger NSR or, at least, trigger a need to cap the units below capacity or install pollution controls to avoid NSR. Again, the determination of whether a change results in an emissions increase is a case-by-case determination, but the EPA believes that the commenters' examples make a credible case that some capacity or efficiency projects that do not increase actual emissions are not undertaken because they trigger NSR under the actual-to-potential test. Although the information is mostly anecdotal in nature, the EPA believes that the information presented is based on real world experience, and makes a credible case that some projects are not going forward in part because of NSR. The EPA believes that this results in lost refining capacity, or foregone opportunities to increase capacity without increasing emissions.

IV. IMPACT ON INDUSTRIES OTHER THAN ELECTRIC UTILITIES AND PETROLEUM REFINERIES

In addition to the information supplied to EPA by utility and refinery commenters, the Agency received numerous comments from other industries regarding the NSR program's impact on energy use, efficiency, and capacity. These comments came principally from a variety of industry associations and coalitions of manufacturers representing the automobile, aerospace, chemical, electronics, food, aluminum and steel, packaging, paper, printing, pharmaceutical, and other manufacturing sectors. Like the utility and refining industries, these commenters were primarily concerned with the current application of the NSR program to existing sources. They noted many anecdotal instances where projects would have reduced energy demand and/or increased energy efficiency, but were abandoned because of NSR permitting delays and/or costs associated with the retrofit of existing equipment with the BACT or LAER emissions controls mandated by NSR rules. Other commenters presented similar examples of pollution control and pollution prevention projects abandoned because of potential NSR applicability. According to the commenters, the cancellation of projects that would have improved energy efficiency or decreased pollution means that NSR is having an adverse impact on investment in both energy efficiency and environmental protection.

Among the general concerns voiced by commenters in addition to pollution control costs were claims that (1) the NSR program is complex and gives rise to uncertainty and associated delays, (2) it hinders flexibility for industry to quickly make needed changes, and (3) that it results in the loss of production capacity where NSR is triggered based on the application of the actual-to-potential test, even if emissions will not actually increase. Furthermore, commenters argued that if a source wants to avoid NSR, it faces the undesirable outcome of accepting new emissions limits in the NSR permit that, according to commenters, effectively reduce a plant or unit's productive capacity.[74]

A. NSR Applicability

1. Routine Maintenance, Repair & Replacement

As with utilities and refineries, many commenters from other industry sectors focused on the NSR "routine maintenance, repair and replacement" exclusion. Like the industries discussed above, they believe that EPA has narrowed the exclusion in recent years. Thus, they stated this was the day-to-day largest problem in main-

[74] See, e.g., Comments of NEDA/CARP [II–D–272] at 9–10.

taining the availability, reliability, and safety of production equipment.[75] In particular, commenters asserted that projects involving repair or replacement components incorporating "state-of-the-art" improvements in materials or design may be subject to NSR since they may not qualify as routine maintenance, or may result in more efficient utilization of fuel and/or raw materials that may potentially increase a facility's emissions. For instance, at one plant, a company states that it elected not to replace spray nozzles in a process dryer, even though it determined that significant energy savings could result, because it concluded that the new Teflon coated nozzles would not be equivalent parts and, therefore, the project would not be exempt from NSR as routine. According to the commenter, the new nozzles would have resolved the repeated need to replace the existing equipment, and may have provided a safer and more reliable operating environment.[76]

Similarly, commenters complained that NSR application discouraged engineering design innovations that provide better quality and control assurances during sometimes-dangerous production processes. One example, provided by the chemical industry, was the installation of a temperature regulating system on a thermal jacket around a dryer that is equipped with a heated jacket that uses a temperature control system in the jacket. The temperature control system works by regulating the flow of steam or hot liquids similar to radiator fluids in the jacket that surrounds the dryer. The current system uses an older design and is relatively ineffective because of the system's wide temperature variation, which causes risks of explosion and lengthens the drying process time. Both problems could be eliminated with the installation of a temperature regulating system, which would also reduce energy demands on the process by 20 percent. Although work is often performed on the jacket regulating system, the company suggested that it did not go forward with the change because work on the temperature regulating system, utilizing a unique new system, would not be considered "routine.[77]

It was also suggested that application of the NSR program impeded the ability of companies to undertake projects to ensure the reliability of their equipment that might also result in significant energy efficiency gains. Commenters presented a number of examples of such projects, including examples from the chemical, packaging, aluminum and general manufacturing sectors. One illustration from the American Forest and Paper Association described replacement of outdated analog controllers at a series of six batch digesters. The original controllers were no longer manufactured, although new digital controllers, costing approximately $50,000, are capable of receiving inputs from the digester vessel temperature, pressure and chemical/steam flow. The new controllers would have more precisely filled and pressurized digesters with chips, chemicals and steam (whereas the old controllers added materials in timed sequence), thus bringing a batch digester on line faster. However, the source determined that under the NSR program this project would not be considered to be routine because, although repairs to the analog system might have been frequent at the company involved, replacement of the system with a digitalized, computerized system would not qualify as "routine."[78]

As with utilities and refineries, EPA notes that there are widely differing views on the scope of the routine maintenance exclusion on other industries. As before, we therefore conclude that concern about the scope of the routine maintenance exclusion is having an adverse impact for industries outside the energy sector. It also is credible to conclude that projects have been discouraged that might have been economically and/or environmentally beneficial without increasing actual emissions. Changes to the NSR program that add to the clarity and certainty of the scope of the routine maintenance exclusion will improve the process by reducing the unintended consequences of discouraging worthwhile projects that are in fact outside the scope of NSR.

2. Pollution Prevention Projects

Another series of examples provided by commenters from the manufacturing sector involved pollution prevention projects, many with significant energy savings potential. Pollution prevention projects at manufacturing facilities may qualify for exemption under the NSR program. This determination is made on a case-by-case basis under EPA's 1994 guidance which addresses pollution control projects and

[75] See, e.g., FPA Comments [II–D–271] at 2–3.

[76] NEDA/CARP Comments [II–D–272] Attachment A, Example #1.

[77] NEDA/CARP Comments [II–D–272] Attachment A, Example #4. According to this example, only 2 tons per year of regulated emissions would have resulted from the change, but potential emissions could have increased over 100 TPY of VOC because operation of an incinerator with a 98 percent control efficiency voluntarily installed by the company is not considered to be "federally enforceable."

[78] AFPA Comments [II-E–15], Tab 3, Case in Point #4.

NSR applicability. Although this guidance was intended to create incentives for industry to undertake such projects, some comments suggested that it might actually discourage such projects. One example comes from the chemical industry. In that case, a chemical facility considered installation of a new, more efficient CFC refrigeration system. Completion of this project, according to the commenter, would have resulted in decreased CFC emissions and less electricity demand, reducing overall emissions from the facility's power generating plant. However, this project would not have qualified for the pollution control project exclusion because the primary purpose of the project was not to reduce emissions. Therefore, because the project otherwise would have triggered NSR, the company elected not to undertake it.[79]

In a second example, an aerospace company suggested that it was unable to avoid NSR, using EPA's 1994 pollution control project policy, because the purpose of a particular project was to improve energy efficiency, although significant pollution control benefits would also have resulted. The company had proposed to speed up its manufacturing process (for parts and subassemblies) by using a new adhesive that would dry (or cure) faster. The company stated that the project would have resulted in pollution prevention both because the new adhesive had a lower volatile organic compound (VOC) content than the one in use and because more parts could be processed in less time, consuming less energy overall. However, this project could not qualify for the pollution control project exclusion because its purpose was to improve efficiency, rather than to abate pollution and because the new adhesive system would have increased the utilization of production equipment at the plant. Because the project otherwise would have triggered NSR applicability, the company declined to make the change.[80]

EPA believes that these examples indicate that NSR is having an adverse impact on some pollution control and prevention projects.

B. Energy Efficiency

The Agency also received a number of industry comments explaining the NSR program's effect on energy efficiency and demand. These comments suggest that the delays and costs associated with NSR have discouraged the adoption or implementation of various energy conservation and efficiency measures. Examples provided by commenters included efforts to conserve fuel and programs that will result in energy demand reductions at major industrial plants. The commenters allege that, in many cases, the projects would ultimately reduce actual emissions, but nonetheless trigger NSR under the actual-to-potential test.

For instance, NSR was cited as a principal reason for not undertaking energy efficiency projects for the installation of heat exchangers and overfire air by various manufacturing sectors including the electronics and appliance industries, plastics, and paper industries. Heat exchangers recover heat from boiler flue gas streams to heat water used in the system's deaerator units. By preheating the water used in the deaerator units, the heat exchanger reduces the steam needed to run the deaerators. This increases the overall efficiency of the boiler house and reduces fuel usage. It also reduces annual boiler emissions. At a plastics plant, a commenter pointed out that installation of a heat exchanger would be expected to reduce natural gas consumption by 7.5 percent, NOx emissions by 7.5 percent, SO_2 emissions by 5.8 percent and carbon monoxide (CO) emissions by 7.6 percent, particulate matter (PM) emissions by 9 percent, and VOC emissions by 9.3 percent. The project achieves these benefits through pollution prevention rather than add-on controls.[81] In this case, the industry applicant sought exclusion from NSR applicability under the pollution control project exclusion. However, this project did not qualify as a pollution control project because its primary purpose was not pollution control or prevention. Moreover, because the boilers required back-up firing with oil during the winter to ensure operation, the "actual to potential" emission test would have caused the project to trigger NSR. To avoid the installation of new controls that would be mandated as the result of NSR applicability, the source states that it is considering burning more fuel oil over the next 2 years to increase base level of emissions (actual emissions).

Another example from a boiler at a pulp and paper mill illustrates a similar problem. According to the comment, the mill's industrial boiler currently experiences extensive, internal erosion as a result of the carryover of solids such as sand and wire from the burning of tire-derived fuel, and burned bark particles, which have led to decreased boiler efficiency. As a result, the mill proposed to install a new overfire air system to allow for more complete combustion of the bark fuel. By getting more

[79] Comments of American Chemistry Council [II–D–416] example 1.
[80] NEDA/CARP Comments [II–D–272] Attachment A, Example #14.
[81] NEDA/CARP Comments [II–D–272] Attachment A, Example #15.

heating value from the same amount of bark burned, less natural gas would be required to provide supplemental heat at an annual natural gas savings of about $1 million (in July, 2001 dollars). According to the comment, future actual emissions of NO, CO and VOCs would decrease after completion of this project. However, because the boiler is currently operating below its rated capacity, the potential emissions after completion of the project would increase over past actual emissions, triggering NSR. The commenter estimates that the cost of NSR controls would be $17 million.[82] At the time this project was under consideration, the relevant company estimated that the annual savings in natural gas usage equated to roughly 200 million cubic feet of natural gas. This amount of gas has a heating value of approximately 0.2 trillion Btu.

The Department of Energy has estimated that overfire systems could be installed on 20 percent of the 200 coal fired boilers in the industry, resulting in 680,000 MW-hr in energy savings annually. Additional energy savings reportedly are possible if overfire air provides similar benefits in wood-fired systems. Potential reductions in NON, SO_2, CO, PM, VOCs and other pollutants such as mercury would accompany such energy savings.

Commenters also expressed a need for operational flexibility, and asserted that NSR delays can limit such flexibility, with the result that if changes are projected to trigger NSR, even changes that improve energy efficiency, they are no longer economically viable. Because some industries must make rapid changes in their product lines it is very difficult for them to manage NSR compliance. One such example was provided by the flexible packaging industry. In that case, the industry has been moving steadily toward the replacement of solvent-based inks and coatings with water-based inks and coatings in the production of packaging for foods, drugs, cosmetics, and other household goods. However, certain product orders reportedly require, from time-to-time, solvent-based inks or coatings, and these operations are required to operate large thermal oxidizers by their permits. In addition many of the low VOC coatings contain materials that can poison a thermal oxidizer's catalyst. Therefore, the plant asked its permitting agency to change its permit to run the oxidizer only when it runs VOC-based coatings.[83]

In this instance, the operator calculated that the change could save approximately 15,000 cubic feet of gas and 650 kWh of electricity each day. However, the commenter felt that the change would probably be a change in the plant's method of operation, triggering NSR, even though actual emissions were expected to be reduced by the change. Because of the nature of its operations, involving product batches sometimes constituting only hours of a day's run, the company did not feel it could accept limits on its hours of operation. Therefore, the project, which according to the commenter was conceived as a way to create large energy savings, did not go forward.[84]

A number of commenters claimed to have abandoned energy conservation projects because they determined that NSR would apply and make the project cost-prohibitive. For instance, at one commenter's automobile assembly plant, the company wanted to eliminate one shift of a two-shift operation due to downward market fluctuations. This would have resulted in a reduction of roughly 30 percent (0.4 billion cubic feet) of annual natural gas usage in the plant's boilers, ovens, thermal oxidizers and other fuel combustion equipment at a cost savings of greater than $2 million annually. In addition, electrical power consumption would have been reduced by roughly 10 percent, at a cost savings of greater than $700,000 annually. In order to accommodate this change, however, the facility needed to install certain pieces of equipment, consisting mostly of assembly motors to increase the production capability of a single shift by two automobiles per hour. According to the comment, because of the actual-to-potential test, and the source's reluctance to take a cap limiting it to one-shift operation, the project would have triggered NSR and the project would no longer have been economically viable.[85]

Overall, the comments received from industries other than utilities and refineries also provide additional evidence suggesting that the current NSR program is having an adverse impact on energy efficiency by discouraging projects that may improve energy efficiency, or may increase capacity and reliability without actually increasing pollutant emissions. In some cases it may even be discouraging projects that decrease emissions, because of the "actual-to-potential" test used for these industries.

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[82] AFPA Comments [II–E–15], Tab 3, Case in Point #1.
[83] FPA Comments [II–D–2711 at 6–7.
[84] Id.
[85] NEDA/CARP Comments [II–D–272] Attachment A, Example #12.

V. IMPACT ON ENVIRONMENTAL PROTECTION

Overall, EPA believes that preventing emissions of pollutants covered by NSR does result in significant environmental and public health benefits. Attempting to specifically quantify the NSR program's contribution to these benefits is very difficult because of the variety of Clean Air Act programs that address these pollutants and because there is no tracking by any government agency of the reductions in emissions that sources make due to the NSR program. Moreover, EPA recognizes that measuring risk reduction benefits associated with any given reduction in emissions requires complex risk assessments that would, in turn, require more specific information than has been gathered in the context of this review.

We note that NSR is implemented in the context of several other significant Clean Air Act programs. Available information indicates that these other programs result in substantial emissions reductions. For example, the Title IV Acid Rain Program has reduced SO_2 emissions from the electric utility industry by more than 7 million tons per year. The Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements will ultimately achieve NO, reductions of 2.8 million tons per year. Standards for highway heavy-duty vehicles and engines will reduce NO, emissions by 2.6 million tons per year. Standards for non-road diesel engines are anticipated to reduce NO, emissions by about 1.5 million tons per year. The NO, "SIP Call" will reduce NO, emissions by over 1 million tons per year. Altogether, these and other similar programs achieve emissions reductions that far exceed those attributable to the NSR program. Moreover, most of these other programs are much more efficient, streamlined, and simple than NSR because they do not entail the same resource-intensive, case-by-case review that is required under NSR.

It would be very difficult to estimate or quantify the benefits of the NSR program. However, EPA believes that the inability to make exact estimates does not mean that these benefits are insignificant or nonexistent. Notably, industry concerns about NSR focused almost exclusively on problems associated with applying the program to existing sources. These comments illustrated a potential dichotomy in that the benefits of the NSR program are largely attributable to new sources while the existing sources reportedly are more burdened by the program.

Electric utilities and petroleum refineries are significant sources of air emissions. The major regulated air pollutants emitted from power plants are SO_2, NOx, PM, and mercury. Refineries primarily emit SO_2 and NOx, as well as VOCs. Based on 2000 emissions, the electric utility industry is the single largest source of SO_2 emissions and the second largest source of NOx emissions (on road mobile sources are the largest). In 2000, the electric utility industry emitted 11.2 million tons of SO_2, 5.1 million tons of NOx, and 302,000 tons of PM. In 1999, refineries emitted 479,000 tons of SO_2, 299,000 tons of NOx and 161,200 of volatile organic compounds. Emissions of these pollutants from all sectors in 1999 totaled 18.9 million tons SO_2, 25.4 million tons NOx, 18.1 million tons VOC, and 23.7 million tons PM.

There is a significant body of scientific literature linking air pollution to several health effects. These include: premature mortality, chronic asthma and increased asthma attacks, chronic and acute bronchitis, other chronic respiratory diseases and damage, increased airway responsiveness to stimuli, inflammation in the lung, respiratory cell damage, premature aging of the lungs, increased susceptibility to respiratory infection, decreased lung function, developmental effects, infant mortality, low birth weight, cancer, decreased time to onset of angina, other cardiovascular effects. Additional effects include decreased worker productivity; increased emergency room visits for respiratory and cardiovascular effects, and more hospital admissions for respiratory and cardiac diseases.[86]

Potential effects beyond human health effects include direct damage to plants and forests, decreased yields for crops and forest products, damage to ecosystem functions, decreased visibility, corrosion and soiling of buildings and monuments, eu-

[86] In response to public requests for more such information, the Agency has added to the docket some general benefits information about reductions in emissions of pollutants likely to be impacted by the NSR regulations. (A) U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Regulatory Impact Analysis for the NOx SIP call, FIP, and Section 126 Petitions: Volume 1, Cost and Economic Impacts. September, 1998. Located on the Internet at *www.epa.gov/ttn/oarpg/otag/sipriavl.zip*; (B) U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Regulatory Impact Analysis for the NOx SIP call, FIP, and Section 126 Petitions: Volume 2, Health and Welfare Benefits. December, 1998. Located on the Internet at *www.epa.gov/ttn/oarpg/otag/sipriav2.zip; (C) U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Regulatory Impact Analysis for the Final Regional Haze Rule. April, 1999. Located on the Internet at www.epa.vov/ttnioarpv/tl/reports/riaes.pdf*; and (D) U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Regulatory Impact Analysis for the Final Section 126 Petition Rule. December, 1999. Located on the Internet at www.epa.gov/ttn/oarpg/t1 /reports/riaes.pdf.

trophication (i.e., explosive algae growth leading to a depletion of oxygen in the water), acidic deposition and acidification of water bodies, and impacts on recreational demand from damaged aesthetics and decreased visibility.

The EPA Background Paper provided some preliminary estimates of the amount of emissions prevented by the NSR program for all industries in "clean" areas (e.g., emissions that would have otherwise occurred from construction/modification). The NSR program in such clean areas is known as the PSD program. The Paper stated that for the period 1997 through 1999, new or modified source compliance with PSD for all industries prevented approximately 1.4 million tons of air pollution from being emitted per year. The vast majority of these reductions are attributable to the application of NSR to new gas fired electric generating units. The Background Paper also reported that this number underestimates total emission. reductions because it does not include estimates of emissions prevented in nonattainment areas through nonattainment NSR permitting requirements during that same time period.

Several commenters reiterated this position and noted that as a general rule these reductions would be greater because the control requirements are more stringent and the offset requirements essentially result in a net emissions decrease. Although EPA agrees that there are additional emission reductions that result from compliance with the offsets requirements of nonattainment NSR program, at this time the Agency does not have information quantifying those emissions reductions. Finally, other commenters noted that the EPA Background Paper failed to address the emission reductions of SO_2 and NOx that occur as a result of sources reducing their emissions so as to avoid the applicability of NSR altogether. On the other hand, since SO_2 emissions from the utility industry are capped by the Title IV acid rain program, NSR does not produce overall net reduction in SO_2 emissions from the industry. Similarly, in nonattainment areas, Title I effectively caps emissions of the nonattainment pollutant. To a degree, the same is true for seasonally or geographically limited cap and trade programs, such as the "NOx SIP call." Furthermore, as noted below, industry commenters note that these estimates of emission reductions attributed to NSR do not account for foregone emissions reductions that they allege would have occurred in the absence of NSR's disincentives to proceed with projects that increase efficiency.[87]

A large number of commenters, primarily citizens and environmental groups, expressed strong support for the benefits that derive from reducing emissions from these industrial sectors, either by installing pollution reduction controls on new sources as they are built, or on existing sources as they are modified. Many groups argued that the public health threat from the air emissions of power plants and refineries is urgent and further reductions are needed. Noting environmental justice concerns, one commenter stated that 80 percent of the refineries in the Texas oil refinery communities are either populated by minority citizens or contain significant minority representation and reported that approximately three million minority citizens live in these Texas communities.

The EPA Background Paper also presented previous estimates of the health benefits per ton of pollutant reduced for SO_2 and NOx emissions based on a study of emissions at utilities. The work cited in the EPA Background Paper is based on the benefits of reducing premature mortality associated with long-term exposure to PM. However, many citizen and environmental group commenters requested a more detailed discussion of additional health benefits like the avoidance of reduced lung function, asthma attacks, lost work days and premature death, which have been linked to these air pollutants. For example, one commenter representing 43 environmental groups cited a study by Abt Associates presenting their estimate that national power plant emissions accounted for more than 6,000 asthma attacks, 30,000 premature deaths, and 5 million lost work days per year, noting that elderly people with respiratory disease and children are at the greatest risk.

Commenters requested that EPA present information on the benefits due to avoided emissions of other pollutants, including pollutants that are reduced collaterally when criteria pollutants are controlled (e.g., mercury). One commenter notes that EPA documents identify coal-fired power plants as the largest industrial emitters of mercury, another pollutant with well-documented health and environmental effects. Thus, without addressing the benefits that derive from reductions of these pollutants as well, several commenters argue that the EPA Background Paper significantly underestimates public health and environmental benefits of NSR.

Many commenters also mentioned numerous other benefits that result from lower emissions from power plants and refineries. They presented information about im-

[87] First Energy Corporation testimony on NSR, 7/10/2001, stated that current interpretations of NSR would have prevented projects now resulting in a reduction of 40,000 TPY of SO_2 and NOx emissions.

pacts primarily of power plant emissions on the environment, particularly in National Parks. For example, several groups provided information regarding the adverse impact of power plant emissions in particular on visibility in National Parks. Some commenters also note that ground level ozone (smog) not only impacts vegetation (more than 50 species of plants and trees allegedly harmed by ozone), but also the health of visitors to National Parks. Additionally, commenters note the impact of SO_2 and NOx emissions on the formation of acid rain and its impact on ecosystems (e.g., red spruce decline, fish killed). Finally, many commenters were also concerned about CO_2 emissions and their potential to affect climate, and believed that NSR plays a role in preventing these emissions as well. Commenters urged EPA to discuss the benefits generally of reduced emissions in all these areas more explicitly, and quantify them as they relate to the NSR program.

In addition, several commenters noted that in nonattainment areas, a source's failure to reduce emissions through NSR places the burden on other sources to reduce emissions. In other words, because the State has to reduce emissions somewhere in order to attain air quality standards, it will target other sources (e.g., construction activities), or even consumers in order to create those reductions. Even in attainment areas, compliance with PSD requirements can help maintain the area's ability to continue to grow.

Some state and local governments supported the role NSR plays in preventing emissions from new and modified sources.[88] They believe, based on their experience, that without NSR, emissions from new and modified sources would severely interfere with their efforts to attain and maintain air quality standards. While there are several important programs that reduce emissions from existing sources, they felt NSR was a critical complementary program because it minimized emissions from new sources.

Some commenters also expressed support for the technology-forcing aspect of the NSR program, arguing that it is the only CAA program that automatically mirrors improvements in control technology over time, and therefore encourages continued development of cleaner technology. Commenters urged EPA to estimate the benefits of this effect as well.

Industry commenters felt that the current NSR program actually acts as a barrier to improved environmental protection in certain instances. Although NSR is only triggered when emissions increase, these commenters argued that the way EPA calculates an increase in emissions can actually have the effect of subjecting a project to NSR that would decrease actual emissions. Because of the delay and costs associated with applying NSR to a project, NSR renders these environmentally beneficial projects uneconomical, and they may be rejected. Similarly, again because of the way that NSR calculates emissions increases, several industry commenters noted an incentive to keep actual emissions high because the closer actual emissions are to a source's maximum capacity to emit, the less likely it is to trigger NSR.

VI. CONCLUSION

Based upon the information examined during this review of the NSR program, there appears to be little incremental impact of the program on the construction of new electricity generation and refinery facilities but a more dramatic impact on investment in utility and refinery generating capacity and energy efficiency at existing utility and refinery plants. Looking at industry as a whole, there also is clear evidence of NSR's benefits for environmental protection.

With respect to environmental protection, the EPA finds that NSR is not designed to play the primary role in reducing emissions from existing sources. In fact, for pollutants covered by a national cap and trade program (such as the Title IV acid rain program), the NSR program does not necessarily produce any overall emissions reductions. Furthermore, EPA believes that in particular industry sectors—especially the utility sector—the benefits currently attributed to NSR could be achieved much more efficiently and at much lower cost through the implementation of a multi-pollutant national cap and trade program.

Nevertheless, the NSR program plays a role in attainment and maintenance of the NAAQS, particularly with regard to new sources. It helps ensure that as industry continues to grow and expand, air quality is managed appropriately (i.e., by helping assure that clean areas do not worsen and that dirty areas get cleaner). It also helps to protect sensitive areas like national parks and wilderness areas, and promotes new and more effective pollution controls. As described in this report, and thoroughly detailed in the comments and other references provided, NSR also provides health and ecological benefits.

[88] See, e.g. STAPPA/ALAPCO comments.

With respect to new facilities, the NSR program's principal impacts are in the form of delays and additional costs, but there is little evidence that these delays and costs are preventing new source construction in the utility industry. Indeed there is substantial evidence that significant new generating capacity is being brought online within normal timeframes for planning such projects.

With respect to the maintenance and operation of existing utility generation capacity, there is more evidence of adverse impacts from NSR. Credible examples were presented of cases in which uncertainty about the exemption for routine activities has resulted in delay or cancellation of projects which sources say are done for the purposes of maintaining and improving the reliability, efficiency and safety of existing energy capacity.[89] Such discouragement results in lost capacity, as well as lost opportunities to improve energy efficiency and reduce air pollution.

There appeared to be little impact of NSR on planning for new greenfield refineries, because new refineries are not being built for economic and environmental reasons unrelated to NSR. For existing refineries, the points raised above about the routine maintenance exclusion apply equally well to refineries as they do for utilities—the EPA observed that commenters expressed uncertainty about the application of the exclusion to any particular project. Existing refineries, however, face an additional issue: the actual-to-potential emissions test. The EPA found credible examples of projects at existing units that would have provided needed capacity or efficiency improvements and would likely not have increased and in some cases may have decreased—actual emissions. Due to the actual-to-potential test, such projects, if they occur at units operating below capacity, could trigger NSR unless the company committed to continue operating the units below capacity or installed pollution controls. The EPA believes that this potentially results in lost refining capacity, or foregone opportunities to increase capacity without increasing emissions, which could contribute to price volatility and shortages in fuel supply.[90]

With respect to energy efficiency, the EPA recognizes that the NSR program applies to certain projects that have the effect of increasing efficiency (e.g., projects that increase electricity output for a given fuel input). The ordinary costs and permitting times associated with NSR may, in the EPA's judgment, result in the delay or cancellation of certain projects that could, improve energy efficiency. EPA encourages energy efficiency improvements wherever feasible. However, the EPA notes that some changes that improve energy efficiency also can result in significant emissions increases that have adverse air quality impacts that must be reviewed, even though the proposed project could reduce regional or national emissions. Thus, of the universe of possible efficiency improvements, the appropriate focus of the NSR program is on those that are non-routine and that significantly increase emissions. At non-utility source categories, the "actual to potential" emissions test can discourage efficiency improvement projects even where there would not be an increase in actual emissions. It is clear that some of these efficiency improvements can still go forward (by going through NSR or taking steps to avoid NSR); however, it also is clear that others are in fact canceled due to the costs and delays associated with NSR.

As noted at the beginning of this report, representatives of industry, state and local agencies, and environmental groups have worked with EPA for over a decade on developing improvements to the NSR program. Our findings in this report ratify a longstanding and broadly-held belief that parts of the NSR program can and should be improved. For example, we conclude above that changes to NSR that add to the clarity and certainty of the scope of the routine maintenance exclusion will improve the program by reducing the unintended consequences of discouraging worthwhile projects that are in fact outside the scope of NSR. For these reasons, EPA is recommending a number of changes to the NSR program that will address the concerns raised during this NSR review as well as many other concerns presented to EPA about NSR over the past decade.

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[89] Very few commenters provided sufficiently detailed examples for EPA to make definitive judgments as to whether the given projects would have been considered nonroutine or ultimately triggered NSR. As a result, EPA cannot quantify the number of projects affected or the corresponding impacts on capacity, reliability, efficiency, safety, or other relevant factors. Based on the information presented, it appears unlikely that many of the examples discussed would trigger NSR either because they would qualify for the routine exclusion or they would not increase emissions significantly. Nevertheless, the anecdotal information was sufficient to support our conclusions with regard to the overall impact of the NSR program.

[90] The EPA notes that its conclusions for refiners are equally valid for the numerous non-utility/non-refinery sources that commented during the review.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,
Research Triangle Park, NC, June 20, 2001.

MEMORANDUM

SUBJECT: Benefits Associated with Electricity Generating Emissions Reductions Realized Under the NSR Program

TO: File

FROM: Bryan Hubbell, Senior Economist, Innovative Strategies and Economics Group

As part of the EPA analysis of the impact of the NSR program on energy investment and supply, I did a calculation of the monetized benefits of the NSR program. The details of this calculation are contained in the attachment to this memo. Based on the estimated emissions avoided due to PSD BACT permitting, I estimated the magnitude of the benefits associated with this program. This estimate is lower than the actual benefits of the NSR program because I do not quantify all the health and environmental benefits, nor do I capture the benefits of the nonattainment NSR program. Also, my estimate does not capture the benefits of the reductions in emissions of pollutants other than SO_2 or NOx. However, my calculation does show that the benefits of this program are substantial.

Based on the information provided to me, there are roughly 400,000 tons of SO_2 and 822,000 tons of NOx emission reductions avoided annually as a result of the PSD program. Ninety percent of these reductions are thought to be from electricity-generating facilities. Based on previous EPA analyses, the average mortality-related benefits per ton of NOx reduced are around $1,300 and the average benefits per ton of SO_2 reduced are around $7,300 for electricity-generating units. For simplicity, I provided estimates only for mortality impacts which generally account for over 90 percent of monetary benefits in previous analyses. Using these estimates as the basis for my calculation, total mortality-related benefits of these avoided emissions of SO_2 and NOx are around $3.6 billion (1999$). This is due to an estimated reduction of 586 incidences of premature mortality from reduced exposure to these electricity-generating unit emissions.

Attachment

BENEFITS ASSOCIATED WITH ELECTRICITY GENERATING UNIT EMISSIONS REDUCTIONS REALIZED UNDER THE NSR PROGRAM

There is a well-established body of evidence on the harmful health and environmental effects of SO_2, NOx (as primary pollutant emissions) and their related atmospheric transformation products, termed "secondary pollutants" (such as sulfates, nitrates, fine particles, and ozone). The scientific studies on health and environmental effects of sulfur dioxide, nitrogen dioxide, particulate matter and ozone have been amply documented and peer reviewed in the comprehensive Criteria Documents and Staff Papers prepared for recent National Ambient Air Quality Standards reviews (EPA 1982a, 1982b, 1986a, 1986b, 1993, 1994a, 1994b, 1995, 1996a, 1996b, 1996c, 1996d).

Sulfur dioxide and nitrogen oxides act as precursors in the development of fine particles and acid rain; nitrogen oxides also contribute to the production of ozone. This discussion first summarizes the general nature of health and certain environmental effects expected from the presence of such emissions, and then outlines existing quantitative estimates associated with large-scale regional emissions reductions from multiple sources, as well as relevant material on potential benefits of reductions at individual power plants. Finally, annual benefits of the NSR program over the period from 1997 to 1999 are calculated by applying benefit-per-ton estimates obtained from previous analyses of the benefits of emission reductions from electricity-generating utilities.

HUMAN HEALTH

Fine particle exposure has been associated with health effects such as decreased lung function, increased hospital admissions and emergency room visits, increased respiratory symptoms and disease, and premature mortality at a number of locations throughout the United States as well as in other countries (EPA, 1996a). A number of the locations where such associations have been observed are included in the eastern part of the Nation, which is subject to regionally-elevated concentrations of fine particles that are in large measure derived from utility emissions (EPA,

1996d). While there are well-recognized uncertainties in any such studies, EPA has concluded, with the concurrence of its scientific advisors, that the associations seen even at the lower concentrations that occur in the eastern United States are "likely causal" (EPA, 1996a). Increased hospital admissions and emergency room visits for respiratory causes have been associated with ambient ozone exposures, which also are elevated on a regional scale in the eastern United States (EPA, 1996b). Exposures to ozone can make people more susceptible to respiratory infection, result in lung inflammation, and aggravate preexisting respiratory diseases such as asthma. Other health effects attributed to short-term and prolonged exposures to ozone, generally while individuals are engaged in moderate or heavy exertion, include significant decreases in lung function and increased respiratory symptoms such as chest pain and cough (EPA, 1996b).

Short-term exposure to high levels of sulfur dioxide while at moderate exertion may result in reduced lung function that may be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. People with asthma are more sensitive than the general population to this effect. Other effects that have been associated with longer-term exposures to higher concentrations of SO_2, in conjunction with high levels of PM, include respiratory illness, alterations in the lungs' defenses, and aggravation of existing cardiovascular disease (EPA, 1982a,b, 1986a,b, EPA 1994a,b). Health effects associated with exposure to nitrogen oxides include increases in airway responsiveness and decreases in pulmonary function in individuals with preexisting respiratory illness and increases in respiratory illness in children (EPA, 1993, 1995).

ANIMAL LIFE AND VEGETATION

Nitrogen oxides and SO_2 contribute to a wide range of harmful effects on public welfare and the environment. This section focuses on the harmful effects to animal life and vegetation of NOx and SO_2 separately, in combination, and as precursors to other secondary pollutants (i.e., ozone and particles).

Nitrogen oxides are important precursors of ozone. Ozone is considered to be the most toxic of the ambient air pollutants to vegetation. Specifically, ozone has been shown to reduce agricultural and commercial forest yields, reduce survivability of sensitive tree seedlings, and increase plant susceptibility to disease, pests, and other environmental stresses such as harsh weather. In long-lived species, these effects may become evident only after several years or even decades. As ozone-sensitive species are out-competed by more tolerant ones, long-term changes to forest ecosystems and habitat quality for wildlife occurs. Additionally, ozone injury to the foliage of trees and other plants decreases the aesthetic value of ornamental species as well as the natural beauty of national parks and recreation areas.

Deposition of nitrogen to terrestrial, wetland and aquatic (e.g., fresh, estuarine, and/or coastal) systems can lead to harmful effects on vegetation and animal populations from fertilization, eutrophication, or acidification. For example, fertilization of nitrogen-limited terrestrial systems alters competition between existing plant species, leading to. changes in the number and type of species (composition) present within a community. Species specifically adapted for nitrogen-poor environments (e.g., insectivorous plants found in wetlands) may be replaced by species better adapted to take advantage of the higher nitrogen levels. Since the animal population in a community is closely tied to the type of vegetation present, this in turn, affects which animals can successfully thrive in that habitat. As a result, the overall nutrient cycles of the system may change. Additionally, eutrophication of some aquatic systems can produce explosive algae growth leading to low oxygen levels in the water and/or an increase in levels of toxins harmful to fish and other aquatic life, leading to large fish and shellfish kills. Nitric acid (HNO_3) is also a contributor to the acidification of soils and both chronic and episodic or acute acidification of water bodies in the United States. Acidification of soils can alter the availability of plant nutrients and expose tree roots to toxic levels of aluminum and manganese. If sufficient levels of aluminum are mobilized and leached from the system into waterways, it can be toxic to fish. Many species of aquatic animal and plant are adapted to live within a narrow range of water conditions, including acidity. As waters become more acid, many species of aquatic animals and plants can no longer survive in them and so are displaced by more acid-tolerant species.

SO_2 and its derivatives have also been implicated in the acidification of terrestrial and aquatic ecosystems, so many of the harmful impacts described for NOx above apply for SO_2 as well. In addition, SO_2 emissions contribute to the formation of acid rain, clouds and fog. In some high elevation sites, acid clouds or fog (which can be more acidic than acid rain) have been shown to damage trees. Sulfur dioxide expo-

sure to vegetation can increase foliar injury, decrease plant growth and yield, and decrease the number and variety of plant species in a given community.

RECENT ESTIMATES OF THE HEALTH BENEFITS OF REDUCING EMISSIONS FROM ELECTRIC UTILITIES

Power plant emissions contribute to ambient air concentrations of the primary pollutants SO_2, NOx, as well as secondary pollutants such as sulfates, nitrates, ozone and fine particles. Further, the characteristic transport distances for fine particle and acid rain-related pollutants can range as high as 500 to 1000 km (300 to 600 mi) or more, meaning—that emissions from plants in States such as Indiana and Illinois can reach a large part of the East. Therefore, it is reasonable to expect that emissions from power plants in the NSR program would contribute significantly to regional air pollutant problems associated with the elevated SOx and NOx emissions in the eastern United States.

Substantial quantitative evidence do the regional effects of power plant emissions impacts in the United States is available from the Regulatory Impact Analyses (RIA) that have been prepared for a number of recent rules or EPA actions. In each case, the RIA was intended to generally inform the public about the potential costs and benefits that may result using an illustrative State implementation scenario, recognizing that specific State actions would ultimately determine the actual costs and benefits of the rule. It is essential to recognize the uncertainties as documented in the RIM that are inherent in any such assessments. Also, the health and environmental impacts outlined in an RIA represent only those endpoints that can be quantified or monetized; thus, the findings may well represent an underestimate of the total health and environmental impacts.

A regional analysis was conducted to estimate the benefits associated with reducing SO_2 and NOx emissions from all coal-fired electricity-generating units (Abt Associates, Inc., 1996). Very substantial health and environmental impacts were estimated to result from a scenario that called for significant reductions beyond that required by the acid rain provisions of the Clean Air Act Amendments of 1990. National emissions reductions of about 3 million tons of SO_2 and 900 thousand tons of NOx were modeled to predict consequent reductions in ambient concentrations of those pollutants and related secondary pollutants, ozone and particulate matter. These annual health benefits include 11 thousand lives prolonged, 3,700 avoided hospital admissions for heart or lung diseases, and 161 thousand occurrences of respiratory symptoms. The environmental benefits of these SO_2 and NOx emissions reductions were estimated on a monetary basis, and included $160 million per year in reduced household soiling and $1,700 million per year in improved visibility (Abt Associates, Inc., 1996).

A second recent analysis estimated (the benefits of reduced ambient ozone and PM concentrations that would result from similar regional reductions in summertime NOx emissions; as stated previously, nitrogen oxides serve as a precursor for both ozone and fine particles. This analysis is based on an estimated emission reduction from 1.1 million tons of NOx, including over 900 thousand tons of NOx emissions from electricity-generating units. Resulting decreases in ambient particulate matter concentrations were estimated to result in annual benefits of 370 lives prolonged. Decreased ozone and particulate concentrations resulted in an estimated 1,200 avoided hospital admissions for heart or lung diseases per year and over 62 thousand avoided incidences of chronic or acute bronchitis or respiratory symptoms per year. In addition, environmental benefits of reducing NOx emissions, expressed as monetary benefits, were estimated to include $280 million commodity crop benefits, and $210 million in commercial forest benefits, and $7 million in household soiling benefits. In addition, a number of benefit categories were discussed as potentially significant, but unquantifiable, including residential and recreational visibility impairment, materials damage, and damage to ecosystems, nitrates in drinking water (EPA 1998).

Another recent analysis was based on emissions reductions estimates of 659,000 tons of NOx, including 611,000 tons of NOx emissions reductions from electricity-generating units. Annual health benefits associated with ambient particulate matter concentration changes expected to result from this rule include 200 avoided premature deaths, 400 avoided cases of acute bronchitis in children, 3800 avoided lower respiratory symptoms in children, 3900 avoided upper respiratory symptoms in children, and 29,000 avoided work loss days (EPA, 1999b). Annual health benefits associated with the ambient ozone concentration changes expected to result from the final rule were estimated to include 371 avoided cases of chronic asthma, 529 avoided hospital admissions for respiratory causes, 136 avoided hospital admissions for dysrhythmias, and 165 emergency room visits for asthma. Reductions in both ozone

and particulate matter concentrations resulting from this rule were estimated to result in nearly 2 million avoided minor restricted activity days for acute respiratory symptoms. An estimated $51 million/year in welfare benefits, on a monetary basis, was estimated on the basis of improved visibility and decreased commercial agricultural losses, with recognition of many welfare and ecosystem effects (e.g., commercial forestry benefits, decreased worker productivity, residential visibility, household soiling and materials damage, nitrogen deposition) that could not be quantified on a monetary basis (EPA, 2000a).

Finally, a recent analysis of emission reductions associated with the provisions of Senate Bill 172 (S. 172) calculated the benefits of reducing emissions of SO_2 and NOx from electricity-generating units by 3,740 thousand tons and 3,192 thousand tons, respectively (EPA, 2000). This analysis projected annual health benefits of 10,600 avoided premature deaths, 5,400 avoided new incidences of chronic bronchitis, over 5,000 avoided hospital and emergency room visits, hundreds of thousands of avoided respiratory symptoms in children, 1.5 million avoided lost work days, and over 8 million minor restricted activity days. Most of these benefits (89 percent) occur in the Eastern United States. In addition to health benefits, reductions in SO_2 and NOx emissions were also projected to provide over $1.2 billion in benefits from improved visibility in Eastern Class I national parks.

Analyses of the Health Impacts of Individual Power Plants

In addition to the national or regional analyses discussed above, several recent studies have assessed public health impacts associated with changes in emissions from specific power plants. Substantial public health impacts were also found in these analyses, as described below:

• Levy et al. (2000) evaluated public health impacts of emissions from two power plants in Massachusetts, Salem Harbor (805 MW) and Brayton Point (1611 MW), for the surrounding population of approximately 32 million people. According to EPA Emissions Trends data for 1996, emissions from the Salem Harbor plant in 1996 included 4,900 tons NOx and 24,000 tons SO_2, and emissions from the Brayton Point plant included 14,000 tons NOx and 44,000 tons SO_2. The authors estimated that reductions in emissions of SO_2, NO_2 and PM_{10}, from actual emissions to emissions estimated from application of Best Available Control Technology, would result in substantial public health benefits, including 124 avoided premature deaths per year, 1330 avoided emergency room visits per year, and 33,600 avoided asthma attacks per year. (Average actual and target emission rates are presented by the authors for each unit of each plant, and the reductions range from about 60 percent to over 90 percent).

• A similar analysis was cited by Levy *et al*. (2000), on the public health impacts of emissions from the Centralia power plant (1340 MW capacity) in Washington State. The same general methodology was used, with some differences in air quality model and dose-response coefficients. Levy *et al* (2000) cite an estimate of 34 annual deaths due to particulate matter exposure resulting from the power plant emissions, based on estimates of the effect of long-term pollutant exposure on mortality.

• An earlier analysis by Levy and colleagues (1999) evaluated risks associated with emissions from a 62MW co-generation plant in Massachusetts. Annual emissions for 1994 were 2,100 tons of NOx and 330 tons of SO_2, and risks were calculated based on ambient pollutant concentration changes between areas near to and distant from the plant. The increased mortality risk was calculated to be 0.3 deaths per year, based on short-term pollutant exposures, and 0.9 deaths per year, based on estimates of risk with long-term exposure.

EPA has not conducted, nor are we aware of any studies or publications that have quantified health or environmental risks associated specifically with emissions reductions from the set of power plants covered by the NSR program. Nevertheless, the scale of the potential benefits can be approximated by making reasonable interpolations from previous regional and local scale assessments. As discussed above, power plant emissions have been associated with substantial health and environmental effects. For discussion purposes, the results of these analyses discussed above are summarized in the following table. It must be noted that these analyses were done for differing purposes, to answer different questions, and often using differing models or analytical methodologies, so the results cannot be directly compared but are illustrative of the health and environmental effects that might be associated with power plant emissions.

Estimated Emissions Changes	Study Population Size/Geographic Area	Examples of Annual Health and Environmental Benefits Estimates	Reference
2,965,000 tons of SO_2, 938,000 tons of NOx.	nationwide	11,00 premature deaths 3700 hospital admissions 160,000 respiratory symptoms $160 million household soiling $1,700 million visibility.	Abt Associates, Inc., 1996)
1,141,000 tons NOx (938,000 from utilities).	22 Eastern United States	370 premature deaths (long-term) 150 premature deaths (short-term) 1200 hospital admissions for heart or lung disease >62,000 incidences of acute or chronic bronchitis $280 million commodity crop benefits $210 million commercial forest benefits.	EPA 1998
659,000 tons NOx (611,000 from utilities.	12 Eastern United States	200 premature deaths 400 cases of acute bronchitis 530 hospital admissions for respiratory diseases 2 million minor restricted activity days $40 million improved visibility $11 million commercial agricultural losses.	EPA 1999b, 2000a
3,740,000 tons of SO_2, 3,192 tons of NOx.	nationwide	10,600 premature deaths 5,400 incidences of chronic bronchitis 5,100 hospital/emergency room visits 475,000 respiratory symptom days 1.5 million work loss days 8 million minor restricted activity days $1.2 billion improved visibility.	EPA, 2000b
Reductions up to 90 percent from 2 plants with combined 1996 emissions of 19,000 tons NOx and 68,000 tons SO_2.	32 million people	124 premature deaths 1330 ER visits 33,600 asthma attacks.	Levy et al., 2000
Reductions from emissions of 2095 tons NOx and 333 tons SO_2, (amount reduced not clear).	9.5 million people	0.3 deaths (short-term exposure) 0.9 deaths (long-term exposure).	Levy et al., 1999

QUANTIFIED HEALTH BENEFITS OF REDUCED EMISSIONS OF SO_2 AND NOx FROM UTILITIES AFFECTED BY THE NSR PROGRAM

As shown above, the health and environmental effects associated with power plant emissions reductions are indeed substantial. In order to provide an idea of the magnitude of health benefits that might be associated with emissions reduced by the NSR program, average benefits per ton, of precursor pollutant can be derived from previous analyses and applied to the NOx SO_2 emission reductions from the NSR program. For the purpose of this calculation, the Analysis of the Acid Deposition and Ozone Control Act (S. 172), completed in July 2000 will be used to derive the benefit per ton estimates. For simplicity, we are providing estimates only for

$PM_{2.5}$ related mortality impacts, which account for over 90 percent of monetized benefits.

The analysis of S. 172 examined the impacts of reducing SO_2 emissions by 3,740 thousand tons and NOx emissions by 3,192 thousand tons. Based on, an earlier analysis of the NOx SIP call rule, we expect that NOx emission reductions will have only 1/10 the impact on $PM_{2.5}$ concentrations as SO_2 emission reductions. As such, we multiply the 10,600 estimated premature mortalities by 0.9 to get the 9,540 attributable premature mortalities for the SO_2 emission reductions. Adjusting the estimated mortality to account for the change in C–R function from the Pope et al. (1995) estimate to the HEI/Krewski (2000) estimate results in an updated estimate of 7,100 attributable incidences of premature mortality. Dividing updated attributable incidences by tons results in an estimated 1.90 incidences of premature mortality per thousand tons of SO_2 reduced in 2010. On a per-person basis, this is 0.0064 mortality incidences per thousand tons per million people.

To obtain a similar estimate for NOx reductions, we multiply the 10,600 estimated premature mortalities by 0.1 to get the 1,060 attributable premature mortalities for the NOx emission reductions (319 thousand tons) used to derive the benefit/ton estimates. Adjusting the estimated mortality to account for the change in C–R function to the HEI/Krewski (2000) estimate results in an updated estimate of 773 attributable incidences of premature mortality. Dividing updated attributable incidences by tons results in an estimated 0.33 incidences of premature mortality per thousand tons of NOx reduced in 2010. On a per-person basis, this is 0.0011 mortality incidences per thousand tons per million people.

In order to calculate the potential benefits of the NSR program, three pieces of information are needed: (1) population expected to benefit from reductions in ambient $PM_{2.5}$ concentrations, (2) tons of NOx and SO_2 reduced, and (3) benefits per ton per million population for NOx and SO_2 There were 400,000 tons of SO_2 reductions, and 822,000 tons of NOx reductions that occurred annually from 1997 to 1999 as a result of NSR activities in States in the Eastern United States. Most of these reductions occurred at utility plants; however, some portion of these emission reductions occurred at refineries and other non-utility sources. However, it is likely that at least 90 percent of the SO_2 and NOx reductions come from utilities nationwide. For illustrative purposes, it is assumed that there were 0.9*400,000=360,000 tons of SO_2 reduced and 0.9*822,000=740,000 tons of NOx reduced at utilities due to the NSR program. Based on a population of around 188 million in the Eastern United States (east of Minnesota, Iowa, Missouri, Arkansas, and Louisiana, inclusive), the average mortality-related benefits per ton of NOx reduced are around $1,300 and the average benefits per ton of SO_2 reduced are around $7,300. Applying these estimates to the reductions in utility emissions due to the NSR program yields total mortality-related benefits of $2,628 million (1999$) for SO_2 emission reductions and 962 million (1999$) for NOx emission reductions. Thus, total mortality-related benefits of utility emission reductions of SO_2 and NOx could potentially be around $3.6 billion (1999$). This is due to an estimated reduction of 586 incidences of premature mortality related to $PM_{2.5}$ exposure. It is important to keep in mind the uncertainties that are inherent in these estimates. The estimates are intended to provide an order of magnitude approximation to the benefits rather than a precise estimate. There are many factors which may cause actual benefits to deviate from these estimates. These factors include whether the sources of emissions, meteorology, transport of emissions, initial PM concentrations, population density, and population demographics are reasonably consistent with those used in generating the benefit transfer values. A general rule is that as these factors diverge, the likelihood of significant error in the estimated benefits values will increase.

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STATEMENT OF WILLIAM H. SORRELL, ATTORNEY GENERAL OF THE STATE OF VERMONT

Chairman Jeffords, Chairman Leahy, and members of the Committees: Thank you very much for allowing me this opportunity to share my thoughts regarding the New Source Review program.

The quality of our nation's air is of critical importance—not just to those of us living in the northeastern United States, but also to everyone in this great Nation and most especially our children, the elderly, and those among us who suffer from respiratory illness.

We have worked hard in Vermont to attain the quality of life that is so important to us. We value our natural resources and do our best to be sure we are not soiling our own backyard. I believe it is fair to say that we join the dialog regarding air pollution with clean hands.

To give you an idea of the scope of the pollution caused by old, dirty coal-fired power plants, I want to impress upon you that in 1998, all Vermont sources of sulphur dioxide emitted a total of approximately 17,000 tons of SO_2. Just one of the plants at issue in the New Source Review enforcement case that Vermont has joined, the Cardinal Plant in Brilliant, Ohio operated by American Electric Power and its affiliated companies, emitted more than 152,000 tons of SO_2 in the same year—and this plant is not even the largest of the American Electric Power plants.

We have good reason to be deeply concerned about massive amounts of air pollution carried into our State by the prevailing winds. The impacts attributable to this wind-borne pollution, in Vermont and regionally, are sobering and bear repeating:

• In Vermont, 20 percent of lakes are moderately to extremely sensitive to acid deposition and several lakes are critically acidic and, thus, unable to support fish and/or other aquatic life.

• Federal studies conclude that the percentage of acidified lakes is expected to increase or even double over the next four decades unless upwind emissions of NOx and SO_2 are reduced extensively.

• Acid deposition is a major cause of the widespread decline of red spruce in high elevation forests throughout the Northeast. Since the 1960's, more than half of large canopy trees in the Adirondack Mountains of New York and the Green Mountains of Vermont and approximately one quarter of large canopy trees in the White Mountains of New Hampshire have died. There is also growing evidence that sugar maple decline is linked to acid deposition.

• According to one analysis, even with an 80 percent reduction in electric utility emissions beyond that required under the 1990 CAA, chemical recovery of certain watersheds to non-acidic levels will take 20–25 years and recovery of the acid—neutralizing compounds in soils will not occur until the year 2050. Biological recovery will take decades if not generations beyond that.

Our children and grandchildren and generations to come will know only of the devastating impacts resulting from decades of air pollution and will not see the recovery of the forests and lakes. Is this to be our legacy?

As a Nation, we must take swift and decisive action to improve the quality of the air. We applaud the efforts of EPA and the Department of Justice in working cooperatively with States to protect air quality. Our shared successes have included important victories affirming certain aspects of regulatory programs and the Agency's determinations regarding the long-range transport of ozone-forming pollutants.

We also appreciate the ongoing efforts by the Agency and DOJ in seeking full implementation of EPA's regional haze rule, which will help to protect and improve visibility in our nation's pristine wilderness areas, including Shenandoah, the Great Smokey Mountains, Yosemite and the Grand Canyon. New Hampshire, Maine and Vermont, joined by Utah and New Mexico, the National Tribal Environmental Council and national advocacy groups have been actively involved in supporting this effort. We are hopeful that these efforts will lead to real improvements in the quality of our nation's air in years to come.

The State of Vermont also is working cooperatively and productively with the Environmental Protection Agency, the Department of Justice, other States and national public interest advocacy groups to enforce the existing New Source Review program against big corporations operating numerous old, dirty coal-fired power plants. There is no question that implementation by EPA of the reform package will seriously undercut these efforts.

Now is not the time to water down the laws needed to protect air quality. The announced reforms of the New Source Review program will take us 180 degrees in the wrong direction. As one State regulator has put it, these reforms will assure longer lives for old, dirty coal-fired power plants and shorter lives for Americans.

We very much hope that the Administration will change course and not backtrack on existing environmental protections. However, if it chooses to go forward with its announced changes, we encourage Congress to reject such efforts to weaken the New Source Review program.

Thank you again for the opportunity to meet with you and to provide these comments.

SUPPLEMENTAL COMMENTS BY ATTORNEY GENERAL WILLIAM H. SORRELL

The New Source Review program has been the Act's most effective tool for reducing air pollution. However, the Administration's proposed changes announced June 13, 2002, will change this. These changes will amount to the largest and most significant weakening of clean air regulations in the history of the Act.

The weakening of these regulations is a major public health and environmental mistake. A rollback in the NSR program will result in increased respiratory disease, premature death, smog, acid rain, and degradation of our waters and forests. Pollution from power plants in the form of nitrogen oxides, sulfur dioxide, carbon dioxide and mercury costs Americans thousands of lives and billions of dollars each year. We need to reduce power plant emissions, not allow them to increase in the way proposed by the Administration.

When it originally established the program, Congress recognized that the most cost-efficient time to install new controls was when a power plant was being built or modified. Congress also recognized that many power plants were nearing the end of their useful lives and that requiring new pollution controls on these plants would not be effective or efficient. However, Congress declared that new or modified plants should be as clean as technologically feasible. The Administration's decision departs from this bedrock principle and will have grave consequences for each and every American.

POWER PLANT POLLUTION

In terms of the volume and variety of pollutants emitted, and the resulting adverse impacts, no source can compare to coal-burning power plants. These facilities emit the "worst" of our air pollutants—carbon dioxide, sulfur dioxide, nitrogen oxides, particulate matter and mercury. Coal-fired power plants collectively account for about 70 percent of annual sulfur dioxide (SO_2) emissions and 30 percent of nitrogen oxide (NOx) emissions in the United States. SO_2 interacts in the atmosphere to form sulfate aerosols. These aerosols often travel long distances in the air and contribute to acid rain and haze. NOx also is carried long distances and is a major contributing factor to the formation of ground level ozone, or smog. Coal-burning power plants are also a major source of particulate matter. All of these pollutants cause serious health and environmental impacts.

ADVERSE HUMAN HEALTH EFFECTS FROM POWER PLANT POLLUTION

The health effects caused by these pollutants are well known and bear repeating:

Premature Death.—Fine particulate matter pollution in the eastern United States is composed primarily of sulfate aerosols. Because these fine particles can be inhaled more deeply into the lungs than larger particles, they are associated with certain types of respiratory diseases and premature death. Particulate pollution claims the lives of over 30,000 Americans per year.[1]

Asthma.—Ozone or "smog" pollution, formed from nitrogen oxides, is increasing at an alarming rate. Smog pollution severely affects this country's 15 million asthmatics. A recent study found that coal-fired power plant emissions trigger 600,000 asthma attacks per year and are responsible for sending 20,000 Americans to the emergency room.[2] Power plant pollution results in 5 million lost workdays.[3]

Neurological and Developmental Damages from Mercury Contamination.—Americans should not have to worry about eating fish from rivers, lakes and oceans. Yet, over 40 States have advised their citizens to reduce their consumption of fish from contaminated waterways. Mercury contamination can cause serious neurological and developmental damages in children and infants, including subtle loss of sensory or

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[1] *The Particulate-Related Health Benefits of Reducing Power Plant Emissions* ("*Particulate Report*"), Abt Associates Inc., October 2000, at 5.1.

[2] *Particulate Report*, at 5.3.

[3] *Id.*

cognitive ability, delays in developmental milestones, such as walking and talking, and even birth defects.[4]

The most troublesome aspect of power plant pollution is that *our children* are the most vulnerable to its effects. Many factors increase the risk of children to air pollution as compared to adults. Due to the higher activity level of children, "pound for pound" they breathe more air for their size than adults do. In addition, their increased time spent playing outdoors further increases their exposure to outdoor air pollution. Studies suggest that children suffer a higher prevalence of asthma than adults, and, thus, asthma makes our children far more susceptible to impacts of air pollution. The lung's defense systems in children are still developing, and are unable to defend against the effects of pollutants as effectively as the lungs in adults.[5]

HUMAN HEALTH EFFECTS ATTRIBUTED TO POWER PLANTS CHARGED WITH NSR VIOLATIONS

A recent report delivered the sobering reality regarding the human health effects that are caused by the power plants that have been charged with NSR violations.[6] The key findings of this report include:

- Pollution from the 51 plants that are targets of the NSR enforcement actions shortens the lives of between 5,500 and 9,000 Americans each year;
- Requiring these plants to meet standards required by law would avoid 4,300 to 7,000 of these deaths;
- Pollution from the 51 NSR plants leads to between 107,000 and 170,000 asthma attacks each year;
- Between 80,000 and 120,000 of these asthma attacks could be avoided by requiring these plants to meet pollution standards as required by law;
- Although all of the plants that are current targets of NSR enforcement are located in the Midwest or Southeast, there is a "transport of death and disease." Pollution from these plants affects downwind Northeastern States resulting in 1,500 to 2,100 premature deaths and 30,000 to 39,000 asthma attacks per year in those States;
- Between 1,200 and 1,700 of the deaths, and between 23,000 and 31,000 of the asthma attacks in downwind Northeastern States would be avoided if the plants met standards required for new plants;
- Requiring the 51 NSR plants to meet pollution standards required by law would yield total estimated monetary benefits of $27 to $45 billion per year.

HARM TO NATURAL RESOURCES

Emissions of NOx and SO_2 from power plants also cause extensive harm to natural resources. In the atmosphere, the NOx and SO_2 are converted into acids, including nitric and sulfuric acids, and other acidifying compounds. These compounds fall to the ground as wet deposition (acid rain, fog, cloud water, sleet and snow) and dry deposition (gases, aerosols and particles). These acids and acidifying compounds are cycled through the soil, vegetation, and surface waters setting off a cascade of adverse ecological impacts.

Acid deposition has altered, and continues to alter, soils in areas of the Northeast in a number of ways. First, acid deposition has leached base cations, including calcium and magnesium, out of the soil, thereby reducing the soil's acid-neutralizing capacity and fundamentally altering soil processes. The depletion of these compounds has, in turn, resulted in the accumulation of sulfur and nitrogen in the soils. When leached out of the soil, sulfur and nitrogen contribute to the acidification and nitrogen loading of streams and lakes. Additionally, acid deposition facilitates the mobilization of dissolved inorganic aluminum, an ecologically harmful form of aluminum, into soil waters, vegetation, lakes and streams. High concentrations of aluminum can be toxic to fish, plants and other organisms.

Acid deposition also continues to impair the quality of water in lakes and steams throughout the Northeast by lowering pH levels, decreasing acid-neutralizing capacity and increasing aluminum concentrations. Power plant emissions are largely responsible for the fact that 20 percent of the lakes in New York's Adirondack Park region are too acidic to support fish life. In Vermont, 20 percent of lakes are moderately too extremely sensitive to acid deposition and several lakes are critically

[4] *Power Plants, Your Health and the Environment* ("*Power Plants*"), Clean the Air, Washington, DC, at 1.

[5] *Children at Risk; How Air Pollution for Power Plants Threatens the Health of America's Children*, Clean Air Task Force, April 2002, at 1.

[6] *Power to Kill*, Clean Air Task Force, July 2001, at 4; *Preliminary Analysis of the Benefits and Costs of Current New Source Review Litigation*, Clean Air Task Force, June 2002.

acidic and, thus, unable to support fish and/or other aquatic life. Similarly, in New Hampshire, nearly half of the lakes have been acidified with some so acidic that they do not support naturally reproducing fish populations. Federal studies conclude that that percentage of acidified lakes is expected to increase or even double over the next four decades unless upwind emissions of NOx and SO_2 are reduced extensively. Similar impacts are seen in the lakes and streams of other northeastern States that lie downwind of the defendants' power plants.

Decreases in pH and elevated concentrations of aluminum have reduced the species diversity and abundance of plankton, invertebrates, fish and other aquatic life in many streams and lakes in acid sensitive areas of the Northeast. Although chronically high acid levels stress aquatic life, acid episodes are particularly harmful. Spring runoff from snowmelt creates an annual pulse of acidified water, which enters lakes and streams in huge volumes. This phenomenon, known as acid shock, is particularly harmful to aquatic communities because it occurs during spawning or the early life-cycle stages of many species. Studies have shown that high acidity and aluminum levels disrupt the salt and water balances in a fish's blood, causing red blood cells to rupture and increasing blood viscosity, thereby resulting in a lethal heart attack.

In addition, acid deposition is a major cause of the widespread decline of red spruce in high elevation forests throughout the northeast. Since the 1960's, more than half of large canopy trees in the Adirondack Mountains of New York and the Green Mountains of Vermont and approximately one quarter of large canopy trees in the White Mountains of New Hampshire have died. Recent research suggests that acid deposition leaches calcium directly from cell membranes in spruce needles. This renders the needles more susceptible to freezing damage, thereby reducing a tree's cold tolerance and increasing the occurrence of winter injury. In addition, elevated aluminum levels in the soil, discussed above, limits the ability of red spruce to take up water and nutrients through its roots, leading to reduced tolerance for environmental stress.

There is also growing evidence that sugar maple decline is linked to acid deposition. Extensive mortality among sugar maples in Pennsylvania appears to result from deficiencies of base cations, together with other stresses such as insect defoliation or drought. Acid deposition, and its effect on soil chemistry is a predisposing factor in sugar maple decline.

Total power plant emissions of sulfur dioxide, and consequent deposition in the northeast of sulfuric acid and other sulfur particles, has declined since 1990. However, emissions of nitrogen oxides have remained essentially unchanged. Because of this and given the extensive loss of acid-neutralizing base cations, the mobilization of aluminum, and the accumulation of sulfur and nitrogen in the soil, the chemical and, in turn, biological recovery of forest and aquatic ecosystems will require extensive reductions of emissions. According to one analysis, even with an 80 percent reduction in electric utility emissions beyond that required under the 1990 CAA , recovery of certain watersheds to non-acidic levels will take 20–25 years and recovery of soil base cation and aluminum levels will not occur until the year 2050. Many ecosystems are more sensitive to the additional input of acids and acid forming compounds.

Nitrate deposition also contributes to the eutrophication of coastal bays and estuaries, which occurs when an excess of nitrogen causes algae growth that threatens the survival of other aquatic species.

Another significant effect of power plant pollution is the impairment of visibility throughout the Nation, including in our national parks and wilderness areas. Electric utility boilers are the predominant source of sulfur dioxide and a principal cause of reduced visibility.[7] Power plants annually release about 13 million tons of sulfur dioxide into the atmosphere, more than 60 percent of the national total. Data show that "visibility impairment caused by air pollution occurs virtually all the time at most national park and wilderness area monitoring stations."[8] States are impacted by the problem of impaired visibility not only because it affects their residents' quality of life, but also in more concrete economic terms due to lowered tourism, diminished appeal for new business activity, and adverse affects on businesses dependent on visitors to national parks and wilderness areas.

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[7] *Protecting Visibility in National Parks and Wilderness Areas,* National Academy of Science's National Research Council (National Academy Press, 1993) at 2.

[8] 62 Federal Register 41,138–41,139 (July 31, 1997).

CLIMATE CHANGE

Coal-burning power plants also emit CO_2 which contributes to global climate change. This is the most pressing environmental challenge of the 21st century. The global nature of the climate change problem would be most efficiently addressed by comprehensive regulatory action at the national level.

The Administration's recent report, *U.S. Climate Action Report 2002*, projects that emissions of greenhouse gases—primarily carbon dioxide produced from the combustion of fossil fuels—will increase by 43 percent by 2020. The *Report* also makes it clear that the question of whether global climate change is occurring is no longer in doubt, only the precise rate of change and the specific impacts of that change.

Some States are now initiating measures to achieve reductions in greenhouse gas emissions. For example, Massachusetts last year adopted State regulations requiring carbon dioxide reductions by power plants, and New Hampshire recently enacted "cap and trade" legislation. California's legislature has just passed a bill that will lead to the "maximum feasible" reductions of carbon dioxide emissions from vehicles. New York is also considering a carbon cap. While individual States are prepared to lead the way, a strong national approach will allow for more efficient solutions that will better protect the American economy in the long run.

CONCLUSION

In sum, I urge the respected members of these Committees to review critically the Administration's actions on environmental issues, especially the New Source Review program. Congress intended the NSR program to protect and improve air quality and to encourage the installation of cleaner plants. Congress should reaffirm these goals and reject efforts to weaken the New Source Review program.

STATEMENT OF ELIOT SPITZER, ATTORNEY GENERAL OF THE STATE OF NEW YORK

Chairman Leahy and Chairman Jeffords, Senator Schumer and Senator Clinton, and distinguished members of the committees: Thank you for convening this hearing and thank you for providing me with the opportunity to testify about the need to maintain and enforce the New Source Review (NSR) provisions of the Federal Clean Air Act.

New York State has been hard hit by air pollution from coal-burning power plants. Hundreds of lakes and ponds in the Adirondack and Catskill Mountains have been ravaged by acid rain. Ground level ozone has triggered asthma attacks and other respiratory diseases in every corner of our State, particularly in New York City. In addition, nitrate and sulfate particulates cause respiratory and cardiac illness, lung cancer and thousands of deaths in the regions downwind from polluting plants.

The New Source Review provisions of the Clean Air Act constitute a powerful tool to reign in this harmful pollution. For years, power plants have been exploiting an exemption, added to the Clean Air Act in 1977, which temporarily excused existing power plants from having to install modern pollution control devices. This exemption, however, was not intended to be permanent. Congress understood in 1977—25 years ago—that existing plants could not operate indefinitely without having to undertake expensive life extension projects. At that time, Congress mandated, power plants would have to install state-of-the-art pollution controls. But now, decades later, many of these power plants continue to spew huge quantities of air contaminants and operate with no pollution controls, in blatant violation of the Clean Air Act.

The aim of the Clean Air Act litigation brought by New York, other northeast States, the Federal Environmental Protection Agency (EPA) and various environmental organizations is to address these harms by going to their source. In 1999, working in partnership with EPA and other Attorneys General from the northeast, my office identified various power plants that were in violation of the New Source Review requirements. These coal-burning power plants had undergone major multimillion dollar improvements without installing NSR-dictated pollution controls. To date, I have filed lawsuits with respect to 17 of these power plants—which are located in Ohio, West Virginia, Virginia and Indiana—under the citizen suit provision of the Clean Air Act. Each of these cases has been joined by EPA and other States. The plants involved emit tons of nitrogen oxides and sulfur dioxide every day, harming New York's air quality and damaging its natural resources.

My office also has taken enforcement action against several power plants located in New York State even though they are generally responsible for much less pollution than their counterparts in the Midwestern and southern States. Working with

the New York State Department of Environmental Conservation, we have identified seven power plants that were in violation within New York, and we have filed a lawsuit against the owner of the two largest plants. The Commissioner of the State Department of Environmental Conservation and I are currently in negotiations with the owners of the other five plants.[1]

Unfortunately, however, our efforts to enforce the Clean Air Act have prompted the Bush Administration to propose a set of illegal regulatory changes that would essentially neutralize New Source Review as an enforcement mechanism and deprive the public of the benefits of this laudably farsighted legislation. The Administration's efforts to dismantle NSR must be defeated, and I will go to court, if necessary, to stop them. I also urge Congress to ensure that the proposed changes do not come to fruition. In the meantime, however, the Administration's retrenchment on clean air already has jeopardized all of the existing NSR cases brought by the States and the Federal Government, and threatens to thwart any future NSR enforcement efforts.

My testimony today addresses four points. First, I explain how the Administration's proposed changes would, if enacted, illegally contravene the Clean Air Act. I intend to go to court to challenge these illegal changes if the Administration puts them into effect. And I intend to win. Second, I demonstrate that the Administration's plans to gut the NSR provisions are already—before the changes even become effective—jeopardizing our existing enforcement cases and depriving us of the millions of tons in pollution reductions that those cases would yield. Third, I refute both the Administration's claim that the NSR program needs "clarification" and industry's contention that it was "unfairly surprised" by our enforcement cases. Finally, I offer my recommendations as to how Congress should respond to the Administration's assault on the Clean Air Act.

I. THE ADMINISTRATION'S PROPOSED CHANGES ARE ILLEGAL

The Administration's proposed changes—so far as we know them through EPA's press statements—are illegal because they purport to amend the Clean Air Act. I will first explain the existing law, as enacted and enforced under the prior Reagan and Bush Administrations. I will then review the changes and explain why they are illegal.

A. New Source Review Law and Regulations

In 1977, Congress created the Prevention of Significant Deterioration (PSD) program to ensure that increased pollution from the construction of new emissions sources or the modification of existing emission sources would be minimized, and to ensure that construction activities would be consistent with air quality planning requirements. This program only applied to areas of the country where the air quality met or exceeded the national ambient air quality standards. The non-attainment New Source Review program, also created in 1977 contains virtually identical requirements applicable to facilities in non-attainment areas. (I refer to both programs together as the NSR program.)

Generally, the NSR program requires such sources to obtain permits from the permitting authority before the sources undertake construction projects if those projects will result in an increase in pollution above a *de minimis* amount. In addition, the NSR regulations usually require that sources install state-of-the-art controls to limit or eliminate pollution. Congress required and fully expected that those older existing sources would either incorporate the required controls as they underwent "modifications," or would instead be allowed to "die" and be replaced with new, state-of-the-art units that fully complied with pollution control requirements.

The Clean Air Act defines "modification" as any physical change or change in the method of operation that increases the amount of an air pollutant emitted by the source. 42 U.S.C. § 7411(a). Courts for many years have interpreted the Clean Air Act term "modification" broadly. *Alabama Power Co.* v. *Costle*, 636 F.2d 323, 400 (D.C. Cir. 1979) (the term "'modification' is nowhere limited to physical changes exceeding a certain magnitude"); *Wisconsin Electric Power Co.* v. *Reilly*, 893 F.2d 901, 905 (7th Cir. 1990) ("WEPCO" ("[e]ven at first blush, the potential reach of these modification provisions is apparent: the most trivial activities—the replacement of leaky pipes, for example—may trigger the modification provisions if the change results in an increase in the emissions of a facility.") The WEPCO court noted that Congress did not intend to provide "indefinite immunity [to grandfathered facilities] from the provisions of [the Clean Air Act]," id. at 909, and that "courts considering

[1] Attached to my testimony (Exhibit 1) is a list of the 24 plants, within and outside of New York, against which we have taken action, along with the amounts of air pollution they emit.

the modification provisions of [the Clean Air Act] have assumed that 'any physical change' means precisely that." *Id.* at 908 (emphasis added) (citations omitted).

EPA recognized, however, that interpreting "modification" to include literally "any physical change" could become administratively unworkable ("the definition of physical or operational change in Section 111(a)(4) could, standing alone, encompass the most mundane activities at an industrial facility (even the repair or replacement of a single leaky pipe, or a change in the way that pipe is utilized)"). 57 Fed. Reg. 32,314, 32,316 (July 21, 1992). To exclude these trivial activities from the scope of the NSR provisions, EPA regulations have exempted routine maintenance, repair, and replacement from the definition of modification since 1977. 40 C.F.R. § 52.21(b)(2)(iii).

EPA historically has analyzed and applied the "routine maintenance" exemption to modification by using a common sense test that assesses four primary factors, the (1) nature and extent, (2) purpose, (3) frequency, and (4) cost of the proposed work. *See, e.g.,* Memorandum from Don R. Clay, EPA Acting Assistant Administrator for Air and Radiation, to David A. Kee, Air and Radiation Division, EPA Region V (Sept. 9, 1988). This approach was upheld by the U.S. Court of Appeals for the Seventh Circuit in WEPCO, a case brought under the first President Bush. Our cases follow these standards.

Although Congress did not authorize EPA to create this "routine maintenance" exemption, the Court of Appeals for the D.C. Circuit ruled, in a challenge to the exemption in the PSD regulations for minor emission increases, recognized that EPA may exempt *de minimis* activity from the scope of the modification provisions. *Alabama Power Co.* v. *Costle,* 636 F.2d at 360–61. See also *Natural Resources Defense Council* v. *Costle,* 568 F.2d 1369 (D.C. Cir. 1977) (similar holding regarding the Clean Water Act). Thus, as long as it is construed narrowly, the routine maintenance exemption is legal.

Another change EPA made over a decade ago was to limit the scope of the modification provisions to those modifications that generate a significant increase in pollution. This requirement is essential when one considers the justifications offered by the present Administration for its NSR "reforms." In announcing the NSR changes, EPA has claimed repeatedly that NSR requirements have deterred emissions-reducing projects. In offering this justification, EPA appears to have bought into one of the power industry's favorite arguments against the NSR program—that the program somehow prevents companies from making efficiency improvements that would benefit the environment. However, efficiency improvements that are environmentally beneficial and reduce emissions do not trigger NSR: if emissions decrease—or even increase only slightly—existing NSR requirements are inapplicable.[2]

B. The Bush Administration's Proposals

The Bush Administration proposed changes would sanction plant modifications that are far from *de minimis*. For example, EPA proposes to allow large facilities to operate under a single plant-wide emissions cap (plant-wide applicability limit or PAL) for a period of 10–15 years. Unlike what some who support plant-wide caps would require—that the caps decline over time—the Administration would allow the caps to remain high. Emissions at such a plant would remain the same throughout the 10–15-year period, regardless of changes in air quality, technology, or air quality standards. Because the plant's emissions are set for the duration of the PAL, States likely would be prohibited from imposing emission reduction requirements beyond what the PAL required, regardless of air quality needs.

Similarly, EPA proposes that any unit that has installed "Best Available Control Technology" (BACT) or BACT equivalent since 1990 would not be required to undergo NSR review for a period of 10–15 years, unless "allowable" emissions increase. Again, this limit on review of the source's emissions fails to consider evolving air

[2] That NSR applies only when both a modification is large enough and the emission increase is significant was clearly demonstrated in EPA's May 23, 2000 applicability determination concerning a proposal by the Detroit Edison Company to replace and reconfigure the high pressure section of two steam turbines at its Monroe Power Plant. There, EPA determined that, although the modification was significant enough to trigger the NSR provisions, because the project would not lead to an increase in emissions, it was *not* subject to the pollution control requirements of the PSD program. Applicability Determination, p. 20. Indeed, as Detroit Edison explained to EPA, "because the change would increase efficiency, it would allow increased electricity generation using the same amount of coal, boiler heat input and steam flow while producing the same level of emissions as currently emitted." Id. Thus, contrary to the Administration's rhetoric, EPA's existing implementation of the NSR program does not weaken the utility industry's incentive to undertake efficiency programs (or any other projects for that matter) that do not involve increased pollution.

quality needs, and may prevent a State from imposing more stringent emission reduction requirements, even if air quality considerations would justify such measures. Congress's clear intention to have the Clean Air Act stimulate technology improvement will be frustrated.

EPA also proposes several significant revisions in the method by which NSR-triggering emissions increases are calculated. For example, EPA proposes that the baseline for measuring emissions (for facilities other than power plants) become the highest emission level achieved over any 2 year period during the last 10 years. By allowing a source to use a baseline that extends back 10 years, EPA is proposing to permit inflation of the source's baseline, because many regulations in the last 10 years have forced sources to reduce emissions. These required emission reductions, however, may not be reflected in the source's baseline generated under the Administration's proposal. Thus, a source would actually be allowed to increase emissions from current levels without any attendant pollution control upgrade.

The most alarming revision proposed by EPA is the wholesale expansion of the Routine Repair and Maintenance (RRM) exception. Specifically, EPA is proposing to allow companies to treat multi-million dollar once-in-a-lifetime projects as "routine maintenance," even though, as industry documents establish, power plant staff never considered the projects routine. EPA is planning to forego pollution control requirements for virtually limitless "like-kind" replacements that would restore and perhaps expand an old plant's capacity and dramatically prolong its life. To accomplish this, EPA proposes to include in the definition of RRM projects that are below a specified cost threshold (inflated to reflect facility replacement cost, not original cost), and that involve installation of replacement equipment that serves the same function and does not alter basic design parameters. The cost threshold test fails to consider air quality and places no limit on any emissions increase the project might produce. Thus, significant increases in emissions could occur with no attendant pollution control requirement. Similarly, the equipment replacement exemption could essentially allow a company to rebuild a source without undergoing any governmental review and without meeting pollution control requirements. Significant emission increases could result.

These impacts have severe consequences for the American public and particularly for the States. EPA's proposal would severely blunt one of the States' most important anti-pollution tools, placing the States in an extraordinarily difficult position regarding their responsibilities under the Clean Air Act. It is the States—not EPA, not the Federal Government—that have the responsibility for insuring that National Ambient Air Quality Standards (NAAQS) are met. 42 U.S.C. §§ 7404; 7410. Under EPA's proposed revisions, the States stand to lose flexibility in determining how best to achieve or maintain air quality because the largest sources of pollution—which generally are the most efficient to control—will essentially be exempted from regulation.

C. States Will Sue to Prevent this Illegal Rollback of Clean Air Protections

I will do all in my power to prevent the Administration from unilaterally gutting the Clean Air Act. The Administration cannot change the law retroactively as it is seeking to do,[3] it cannot change regulations without adequate notice and comment. And, most importantly, the Administration cannot eviscerate the Clean Air Act without getting Congress to pass legislation allowing such a rollback. As explained above, the CAA itself contains no exemption for routine maintenance. Nor does it exempt like-kind replacement activities, no matter how massive or infrequent, from the definition of modification. With the statute so clear, the permissible scope for agency-created exemptions is very narrow. When in the Alabama Power case the D.C. Circuit held, following ample Supreme Court and D.C. Circuit precedent, that EPA can exempt *de minimis* activity, it emphasized that EPA could only exempt the most minor of activities so that the program would be workable administratively. Indeed, the court stated in very strong terms that "there exists no general administrative power to create exemptions to statutory requirements based upon the Agency's perceptions of costs and benefits." Alabama Power, 636 F.2d at 357. The court also held that the power to create exceptions "is not an ability to depart from the statute, but rather a tool to be used implementing the legislative design." Id. at 359.

[3] To the extent EPA has indicated it will make retroactive changes to the Act, any such changes would be of questionable validity. The D.C. Circuit, which would have exclusive jurisdiction of such changes under 42 U.S.C. § 7607(b)(1), prohibits retroactive application of interpretive rules absent authority delegated by Congress, see *Health Ins. Ass'n of America* v. *Shalala*, 23 F.3d 412, 423 (D.C. Cir. 1994) ("[I]nterpretive rules, no less than legislative rules, are subject to Georgetown Hospital's ban on retroactivity."), and such authority is entirely lacking here.

That is not what the Administration proposes to do. The Administration's proposed changes are far from *de minimis*. EPA's changes would have the effect of essentially eliminating the applicability of New Source Review to modifications, contrary to the express language of the statute. EPA's announced changes will confer on existing, dirty power plants indefinite immunity from the requirements of the Clean Air Act, contrary to Congress's clear intention when it enacted the NSR provisions 25 years ago. This is illegal and for that reason, I—and I expect to be joined by may other States—intend to sue EPA if it carries out its plans.

II. THE PROPOSED CHANGES AND THE ADMINISTRATION'S HOSTILITY TO NSR ARE ALREADY JEOPARDIZING THE ENFORCEMENT CASES

If enacted, the Administration's proposed changes would impermissibly undercut existing law and reduce the scope of the Clean Air Act. Simply by signaling its hostility to the NSR program, however, the Administration already has compromised our existing enforcement cases. Indeed, from the day Administrations in Washington changed, industry has sought to avail itself of its enhanced bargaining position.

A. The Administration is Overtly Hostile to NSR

Fifteen months ago, the Administration released President Cheney's "National Energy Policy: A Report of the National Energy Policy Development Group." The report directed Attorney General Ashcroft to "review existing enforcement actions regarding NSR to ensure that the enforcement actions are consistent with the Clean Air Act and its regulations." That directive immediately undercut the Department of Justice's lawyers; yet, on January 15, 2002, DOJ concluded that the NSR cases were legally sound.

The Vice President also directed the EPA "in consultation with the Secretary of Energy and other relevant agencies, to review NSR regulations, including administrative interpretations and implementation, and report to the President within 90 days on the impact of the regulations on investment in new utility and refinery generation capacity, energy efficiency, and environmental protection." Over a year later, EPA finally announced its illegal, wholesale administrative rollback of NSR.

In its press statements, EPA claims to be simply "clarifying" the existing regulations and maintains that its proposed rewriting of the law will not affect the filed cases. Indeed, on the day of EPA's announcement, Administrator Whitman explained that EPA would continue its enforcement efforts against past violations, "because you can't get away with violating the law just because the law gets changed." See June 14, 2002 Atlanta Journal and Constitution article "*Air Proposals Irk Environmentalists; Bush Plan a 'Massive Gift' to Energy Industry, Critics Say.*"

Earlier, on March 27, 2002, the Justice Department's environmental chief, Thomas Sansonetti, said that pursuing NSR cases was one of his top priorities. Quoted in the "Daily Environment Report," Mr. Sansonetti stated: "We're going full steam ahead. We're actively pursuing all cases. When companies refuse to settle, DOJ will take them to trial." He predicted that DOJ would prosecute two or three NSR cases in court in the coming year. He also said that DOJ had budgeted $3 million in the current fiscal year to pursue such cases. I'd like to believe Mr. Sansonetti; his attorneys at the Justice Department have done excellent work on the pending cases and I want to continue our partnership. But his statements were made before EPA announced its retrenchment. Since then, DOJ has been silent as to its future intentions regarding NSR.

B. The Existing NSR Cases are in Jeopardy

Although we agree with the Administration that any new regulations should not be retroactive, it would be naive to believe that industry will not try to use the "NSR reforms" in court to justify their past conduct. We are already seeing the effects of this Administration's misguided and illegal policy changes: settlements are stalled, judges are wondering about the impact of the reforms on their cases, and industry lawyers are already arguing in court that the cases should not go forward. Whether or not the rollback will affect the existing cases is an issue of first impression for the courts because of the unprecedented nature of EPA's action. Never before has EPA—or Congress, for that matter—undertaken such a clear retreat on environmental protection. Conducting such a rollback while enforcement cases under the old rules are pending is not only unprecedented but was unimaginable, at least before this Administration came to power. Simply put, the existing NSR cases are in jeopardy and we are fooling ourselves if we believe that the Federal Government will be filing more cases after rewriting the regulations to legalize the conduct at issue.

I would like to focus my comments now on three concrete examples of how the Administration's policies are adversely affecting our pending enforcement cases.

1. Cinergy and VEPCO

On November 16, 2000, my office and the EPA reached a $1.2 billion settlement in principle covering eight coal-fired power plants run by the Virginia Electric Power Company (VEPCO)—one subject to New York's pending lawsuit and seven others that VEPCO brought into the settlement. The settlement would have reduced air pollution by more than 270,000 tons annually. VEPCO was to spend $1.2 billion over 12 years to reduce its sulfur dioxide emissions by 70 percent and its nitrous oxides emissions by 71 percent from pre-existing levels. Further, VEPCO was to pay $5.3 million in penalties to the Federal Government and an additional $13.9 million to fund environmental benefit projects, with a portion going to New York State. The intent at the time was to finalize the agreement within 60–90 days. Eighteen months later, this agreement remains unexecuted. My staff has spent countless hours in meetings with VEPCO and the Federal Government, but the regulatory uncertainty has prevented any final agreement. This is a terrible loss for the people of this Nation, who expect, and deserve, cleaner air.

Similar delay has beset our effort to reach a final agreement with the Ohio-based utility Cinergy. In December 2000, I joined the Federal Government and the States of Connecticut and New Jersey in reaching a settlement in principle covering ten of Cinergy's coal-fired power plants (one subject to New York's lawsuit and nine others). We were to see over 300,000 tons in emission reductions, and $30 million in penalties and environmental projects. Like VEPCO, the Cinergy agreement remains in limbo. After tolerating 2 years of settlement discussions, the Cinergy court has placed the case back on the litigation track. Although DOJ advised the court that it intended to file an amended complaint by July 10, it has not yet done so, raising questions about DOJ's willingness to pursue NSR enforcement cases when its client, EPA, is in the process of changing the rules.

Although Cinergy and VEPCO have continued to express their interest in settlement, their actions speak louder than words. As might be expected, the softening of EPA's regulatory posture has only hardened Cinergy's and VEPCO's positions on the remaining issues to be worked out. I now see no way for these settlements to become final unless the States and DOJ capitulate on the remaining issues, something that I am not prepared to do.

2. Tennessee Valley Authority case

In 2000, EPA issued a final determination that TVA had violated the NSR requirements of the Act by undertaking enormous and expensive modification projects at several of its power plants. TVA appealed to the Eleventh Circuit, briefs were submitted and oral argument was held this past May. Like many others involved in these cases, I was hopeful that the Eleventh Circuit would issue a quick decision, affirming EPA's determinations. A decision from the Eleventh Circuit would be an extremely important precedent for the other NSR cases.

Instead, in the wake of EPA's recent announcement on NSR "reform," the Eleventh Circuit took the extraordinary step of ordering the parties to mediation. Although we cannot be certain that this order was issued in direct response to the EPA announcement, it is unlikely that the timing of the two events is coincidental.

3. Niagara Mohawk case

On January 10, 2002, Governor Pataki and I filed a lawsuit in Federal court against Niagara Mohawk Power Corporation and NRG (the current owner of the power plants) for violating NSR at two power plants in western New York. The Dunkirk and Huntley coal-burning power plants account for more than 20 percent of the nitrogen oxide emissions and 38 percent of the sulfur dioxide emissions released by all power plants in New York State.

The defendants filed a motion to dismiss all or portions of the case on jurisdictional grounds. Briefing was completed and my attorneys were preparing to argue the case. But shortly after EPA's announcement, the judge called us in to explain how the Administration's announced intention to change the NSR rules would affect the existing case. In its brief on this issue (see Exhibit 2), Niagara Mohawk has described EPA as "reconsidering" its position on NSR and recommended that the Court put the case on hold until EPA takes final action on the NSR changes:

> In order to consider the merits of the case, the Court would ultimately have to decide whether EPA's interpretation of the Act and regulations, as applied by DEC, is reasonable and in accordance with law. The Court cannot properly make that decision until the EPA decides finally what its interpretation is.

> In short, EPA has said that its recommendations involve clarification of existing law and policy, and definition of a regulatory concept (routine maintenance, repair and replacement) that derives from EPA's interpretation of the Clean Air Act. Accordingly, to the extent that EPA's final action follows its recommendations, its action may affect not only the State's request for prospective injunctive relief, but also its request for penalties for alleged past violations.

Niagara Mohawk also contends that even if the new rules were purely prospective, "they would still affect the State's request for injunctive relief." We think this argument is wrong. When a business breaks the law—no matter how much influence it may now have in Washington—the rule of law requires courts to order compliance. However, Niagara Mohawk's argument evidences a practical problem that judges will face if the Administration succeeds in implementing its "reforms." We expect the courts to find with relative ease that the utilities violated the law. But when it comes time to select a remedy, will they require substantial emission reductions even though the Administration's proposed policy would not require such reductions? Will a practical judge require a company to spend millions of dollars on pollution controls for actions that EPA is now saying do not require such controls? Indeed, now can EPA even ask for that relief with a straight face? If any of these cases go to trial, we might see the payment of some fines for past wrongdoing, but we may be deprived of the emission reductions we so desperately need. More money in the State and Federal coffers, while welcomed, will not help us reverse the ravages of acid rain and respiratory disease in New York State and elsewhere.

I intend to continue to press forward on this important case. Niagara Mohawk violated the law and we need the remedy of dramatic emission reductions. Unless EPA tries to take away the States' authority to reject the regulatory changes—something I hear may be in the works—New York can continue to implement the law as it has existed for 25 years within New York. But we enjoy no such comfort in our out-of-state cases, where it will be difficult to proceed if EPA pulls the rug out from under us.

III. NSR NEEDS NO "CLARIFICATION"

The power industry has always understood the scope of NSR and has never considered the modifications at issue to be routine maintenance. These modifications were large-scale capital projects that required significant advance planning and typically cost millions of dollars; they were intended to fix problems that routine repair or replacement had been unable to address. By contrast, activities considered by industry to be "routine" include relatively mundane actions, such as the day-to-day repair of leaky or broken pipes. In short, the record supplies no basis for the Administration's claims that the law was somehow unclear and that industry was somehow ambushed by our enforcement cases.

A. Industry Officials Originally Distinguished Routine Activities from Upgrades

Industry documents establish that industry officials appreciated the potential applicability of the NSR provisions to their power plant life extension projects. Because of protective orders entered in our various cases, I am unable to quote from most of these documents in my testimony. However, despite the utilities' attempt to cloak their plant life extension projects in secrecy, publicly available industry documents amply demonstrate industry's acknowledgment of the routine maintenance exemption's limited scope. For example, the Babcock and Wilcox company, in its definitive power plant treatise, *Steam, Its Generation and Use,* distinguished some of the very plant life extension activities at issue in our NSR cases from routine maintenance activities as follows: "Older boilers represent important resources in meeting energy production needs. A strategic approach is required to optimize and extend the life of these units. Initially, routine maintenance is sufficient to maintain high availability. However, as the unit matures and components wear, more significant steps become necessary to extend equipment life." *Id.* at 46–1 (Exhibit 3). Our cases involve such "more significant," as opposed to the routine maintenance activities that the plants conduct on a day-to-day basis.

Similarly, the American Electric Power Company (AEP) explained to the Ohio Public Utilities Commission that life extension activities go beyond routine maintenance: "As time goes on, the cumulative effects of operation affect more components, and affect those components more severely. Finally, the major subsystems and components reach a stage at which "normal" maintenance and repair become inadequate to support satisfactory continued operation." Direct Testimony of Myron Adams, AEP's Manager of Integrated Resource Planning, filed with the Public Utilities Commission of Ohio on July 20, 1994 at 20 (Exhibit 4).

Publicly available information likewise demonstrates the magnitude of the projects we have cited in our cases. For example, modifications performed by TVA include projects costing $57 million, $23 million, and $29 million. These modifications required that the affected units be shut down for 13 months, 3 months and 6 months respectively. Another TVA project costing $11 million required construction of a railroad track and a monorail to facilitate the replacement of 44 percent of the 234,000 square feet of total boiler surface area. At Ohio Edison, the NSR violations include installation of an entirely new and redesigned furnace and burner system—the core of any power plant—at the W.H. Sammis plant, as described in the accompanying article (Exhibit 5).

Documents produced by Niagara Mohawk show that the company originally used the term "routine maintenance" to apply to only a narrow category of work done at the plant. (Exhibit 6A). In another company document, Niagara Mohawk made clear that work done at the plant for the purpose of extending the life of an electric generating unit concerned "components that are not routinely replaced." (Exhibit 6B). Indeed, Niagara Mohawk requested that its contractor not include "maintenance" type recommendations in a life extension report for one of the generating units. (Exhibit 6C).

Industry's complaint that EPA suddenly changed its interpretation of the NSR requirements during the Clinton Administration is similarly contradicted by industry documents dating from the 1980's, which cite particular plant life extension projects as exceeding routine maintenance and therefore triggering the NSR requirements. Thus, in 1984—seven years after the enactment of the NSR requirements—the Electric Power Research Institute (EPRI) held a conference that included the topic of extending the lives of old power plants The conference literature explicitly recognized that "a fossil fuel power plant is designed for a 30-year life," meaning that all plants existing when the NSR/PSD requirements were enacted would reach the end of their useful lives by 2007. (Exhibit 7). Conference attendees then discussed the life extension activities that would be needed. A Duke Power representative stated that keeping the old plants running "necessitated us developing a different approach than routine maintenance" which only keep "the plant in service until the end of its design life." (Exhibit 8).

Similarly, at 1985 and 1986 EPRI conferences, industry representatives recognized that life extension activities transcend routine maintenance:

> If plant life extension serves the balanced interests of stockholders and ratepayers, capital improvements and increased attention to equipment above and beyond routine maintenance may be warranted. . . .

It is of primary importance to define the distinction between plant life extension work and routine maintenance.

(Exhibit 9).

B. Industry was Fully Aware that its Activities were not Exempt from NSR

Not only did industry recognize that plant life extension activities failed to qualify as "routine maintenance," industry also understood that NSR requirements would likely be applicable. For example, an article entitled "Regulatory Aspects of Power Plant Life Extension"—which was presented at a 1985 industry conference—expressly discussed the circumstances under which life extension projects could require NSR permits. (Exhibit 10). As a result, EPRI recommended "that corporate counsel be consulted as a part of life extension planning activities, particularly for the interpretation of regulatory and environmental issues when such activities are clearly beyond the scope of what might be considered typical maintenance." (Exhibit 11)

Rather than seeking EPA's guidance, however, industry simply attempted to conceal its activities. For example, a 1984 EPRI workshop on life extension recommended that life extension projects be described as maintenance activities in order to avoid triggering NSR requirements:

> [T]here are a number of issues which require clarification. Several of these are: What is considered 'routine' repair, replacement, or maintenance for the purpose of qualifying for an exemption to the NSPS modification provisions? Some aspects of life extension projects may not be considered routine repair/maintenance/replacement. To the extent possible these projects should be identified as upgraded maintenance programs. . . .
>
> Life extension projects will result in increased regulatory agency sensitivity to facility retirement dates. . . . Regulatory agencies may contend that since life extension projects will defer the need for new generation, additional pollution control should be required for the older, higher emitting affected plants.

> It may be appropriate to downplay the life extension aspects of these projects (and extended retirement dates) by referring to them as plant restoration (reliability/availability improvement) projects. To the extent possible, air quality regulatory issues associated with these projects should be dealt with at the State and local level and not elevated to the status of a national environmental issue.
>
> To the extent possible, project elements should be stressed as maintenance related activities to maximize chances for NSPS exemptions. Utility accounting practices play a significant role here.

(Exhibit 12).

In 1988, EPA issued an applicability determination to the Wisconsin Electric Power Company, or WEPCO, in which EPA determined that WEPCO's multi-million dollar life extension projects were not covered by the routine maintenance exemption. The issuance of the WEPCO interpretation conclusively disabused industry of any notion that it might avoid compliance with NSR requirements. Shortly after EPA issued its WEPCO applicability determination concerning the life extension projects at issue there, the Utility Air Regulatory Group (UARG), a leading industry group, advised its members that "Life Extension is [now] an unpopular term in the wake of WEPCO." (Exhibit 13, p. 2.). Consistent with other industry missives at the time, the memo further recommended against using "the term 'life extension' to describe any project." *Id.*, at 5. The same industry memorandum demonstrates that UARG and its members fully understood EPA's interpretation limiting the routine maintenance exception:

According to UARG, EPA equates 'routine' with 'frequent' . . . . UARG believes that under present EPA policy, in order to qualify for the routine maintenance exemption, the activity would have to be:

- frequent,
- inexpensive,
- able to be accomplished at a scheduled outage,
- will not extend the normal economic life of the unit,
- be of standard industry design.

Id., at 4. UARG also advised its members that if the WEPCO applicability determination were upheld by the courts, it "will set a serious precedent if it is adverse." *Id.*, at 5.

After the WEPCO determination, one of Ohio Edison's in house attorneys and one of the lawyers at the law firm representing Ohio Edison wrote an article explaining that, under the EPA interpretation reflected in WEPCO, Ohio Edison's own plant improvements would be subject to NSR, since: "[a]fter WEPCo, virtually any physical change to an existing facility, even pollution abatement activities and an unpredictable array of repair, replacement, and maintenance projects, can trigger new source control obligations." See June 18, 1990 letter from David Feltner, Senior Attorney for Ohio Edison, to Ms. Cheryl Romo, with enclosed draft article entitled "Is There Life Extension After WEPCo?." (Exhibit 14). (I note that the authors of this article overstate the reach of the NSR requirements by overlooking that the requirements apply only if an emissions increase is projected.) Despite the opinions of its attorneys, Ohio Edison continued to undertake expensive life extension activities at its plants without applying for an NSR permit or otherwise notifying the permitting authorities.[4]

"What You need to Know About Modifications/Major Modifications" by Robert Meyer at p. 28. (Exhibit 15).

IV. THE ROLE OF CONGRESS

Congress need not sit idly while the Administration unilaterally ignores its earlier mandates and jeopardizes public health and the environment. As I've said, I will fight these changes; I urge you to do so as well.

First, while I can go to the courts, you have a greater ability to ensure this rollback does not occur. Any litigation I bring may take years to be resolved. You can act strongly and quickly. I urge you to pass specific legislation, this session, that would expressly prohibit the Administration from proposing or finalizing any new exemptions from NSR, including those that EPA has announced.

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[4] Likewise, a decade ago, one of the attorneys at Porter, Wright, Morris & Arthur, counsel for AEP and Ohio Edison, wrote:

The "Routine maintenance, repair, and replacement" exclusion may be available only if: (1) the repair/replacement is immediate after discovery of deterioration; (2) the replaced equipment is standard in the industry and fails frequently; (3) the repair/replacement is inexpensive; and (4) the repair/replacement does not appreciably prolong the life of the unit.

Second, I urge you not to be seduced by the Administration's claim that NSR can be replaced by the Administration's so-called "Clear Skies" initiative. That plan is an inadequate substitute for existing law and a wholly unsatisfactory alternative to Senator Jeffords's "Clean Power Act." At the outset, I note that "Clear Skies" is still no more than a press release. Although months have elapsed since the "Clear Skies" replacement for NSR was announced, no plan has even been introduced in Congress. Many of us took note of Administrator Whitman's criticism of the "Clean Power Act," which she dismissed on the grounds that it is unlikely win congressional approval. I would point out that Senator Jeffords's legislation has been introduced, and has passed the Senate Environment and Public Works Committee—so it is at least two steps ahead of "Clear Skies."

Even if the Administration were serious about "Clear Skies," the pollution reductions that program would offer are too little, too late: the caps are too high and would not take affect until the distant future.

To be blunt, the "Clear Skies" caps are based on little more than politics. They do not guarantee compliance with air quality standards. The caps certainly are not based on sound science. Every month, another study shows the need to reduce pollution more aggressively. For example, a recent study finds new links between fine particulate matter (PM) and cancer. Nor does technical feasibility stand in the way of higher caps. More aggressive SO_2 and NOx cuts are clearly technically feasible even with existing technology. Nor is it a question of rates that consumers must pay for power. The Department of Energy itself determined that the country could cut NOx and SO_2 by 60–80 percent by 2010 with virtually no rate impact. *See* Energy Information Administration, Analysis of Strategies for Reducing Multiple Emissions from Power Plants: Sulfur Dioxide, Nitrogen Oxides, and Carbon Dioxide (December 2000).

The Administration tries to sell its plan by using faulty comparisons to current emissions. Don't be deceived. Even at their end point, the Bush pollution caps would be 50 percent higher than, for example S. 556, the Clean Power Act, or EPA's own initial proposal. This 50 percent is roughly equivalent to all emissions produced within the State of Ohio, a leading producer of emissions. This difference alone could lead to hundreds, and perhaps thousands, of additional deaths each year. Under the Administration's program, States will find it far more difficult, if not impossible, to attain their mandated air quality standards.

Under the Administration's program, many dirty old plants will remain uncontrolled. In 1977, when it enacted the NSR provisions, Congress clearly expected that all plants would be controlled by 2018—over 40 years after the 1977 amendments made the NSR requirements applicable to plant modifications. However, if all plants were controlled with "best available control technology" by 2018, the SO_2 cap would be below 2 million tons, not 3 million tons as contemplated by "Clear Skies."

Moreover, the "Clear Skies" caps would not be fully phased in until the 2020's. Even EPA's own graphs acknowledge that pollution levels will not reach the cap level by the Administration's announced target dates. While EPA speaks instead of incentives for early reductions, the flip side of early reductions is late compliance. Under the Administration's program, any cuts now can be banked, ton-for-ton, to offset subsequent emissions. We should insist on early reduction *and* caps that are lower and take effect sooner.

Finally, the Administration's claim that the President's plan achieves more reductions than current law is directly contrary to what EPA and the Department of Energy found when they included the emission reductions attributable to full enforcement of the New Source Review provisions. *See, e.g.,* Energy information Administration, Analysis of Strategies for Reducing Multiple Emissions from Power Plants: Sulfur Dioxide, Nitrogen Oxides, and Carbon Dioxide (December 2000). Furthermore, in its analysis, EPA ignores the emission reductions that will result under current law from other programs, such as the regional haze rule, the mercury Maximum Available Control Technology (MACT) requirements and the new ozone and particulate matter standards. Thus, the Administration is not comparing its proposal to the Clean Air Act as it is now written and as it should be implemented and enforced. Comparing Clear Skies to a Clean Air Act that is ignored or eviscerated is WorldCom-style math at best.

I support the "Clean Power Act" because we need swift and significant reductions in sulfur dioxide, nitrous oxides, mercury and carbon emissions. I am especially supportive of including carbon in the four pollutant legislation and commend Senator Jeffords for working so hard on this legislation. The Administration finally admits that global climate change is happening. Unlike the Administration, however, Senator Jeffords has a plan of action. I urge you to pass the Jeffords "Clean Power Act."

CONCLUSION

Allow me, and others who are serious about environmental law enforcement, to continue to use the Clean Air Act to reduce pollution. That is what Congress intended when it adopted New Source Review 25 years ago. Don't allow the most serious attack on the Clean Air Act since it was adopted to succeed. Don't allow the product of 30-plus years of bi-partisan cooperation on clean air to be cast aside.

2000 Air Emissions From Coal Fired Power Plants
That Are Targets Of New York State Attorney General Enforcement

Name of Power Plant & Utility	Unit(s)	Location	Sulfur Dioxide (Tons)	Nitrogen Oxides (Tons)	Carbon Dioxide (Tons)	Mercury (Tons)
American Electric Power						
Muskingum River	1 - 5	Beverly, Ohio	156,037	28,417	8,261,015	0.15820
Conesville	1 - 3	Conesville, Ohio	47,660	9,025	2,135,504	0.44960
Gavin	1 - 2	Cheshire, Ohio	24,695	42,483	18,042,121	0.25040
Cardinal	1 - 2	Brilliant, Ohio	96,582	17,543	6,406,426	0.31470
John E. Amos	1 - 3	St. Albans, West Virginia	91,106	43,970	15,289,449	0.48270
Kanawha River	1 - 2	Glasgow, West Virginia	14,785	7,508	2,506,972	0.06479
Kammer	1 - 3	Captina, West Virginia	42,912	15,362	4,096,585	0.13900
Mitchell	1 - 2	Captina, West Virginia	53,975	24,735	8,736,142	0.22490
Philip Sporn	1 - 5	New Haven, West Virginia	54,166	19,869	6,551,700	0.27560
Clinch River	1 - 3	Carbo, Virginia	26,050	14,863	4,751,105	0.07851
Tanners Creek	1 - 4	Lawrenceburg, Indiana	67,447	32,657	5,979,460	0.14770
Cinergy						
W.C. Beckjord	1 - 6	New Richmond, Ohio	71,434	21,410	8,079,087	0.19770
Gallagher	1 - 4	New Albany, Indiana	59, 008	7,514	3,568,568	0.12070
Cayuga	1 - 2	Cayuga, Indiana	65,733	10,296	6,727,195	0.10560
Wabash River	1 - 6	West Terre Haute, Indiana	58,472	11,414	5,531,139	0.09986

Ohio Edison						
W.H. Sammis	1 - 7	Stratton, Ohio	120,619	32,832	13,404,729	0.27610
Virginia Electric Power Co.						
Mt. Storm	1 - 3	Mt. Storm, West Virginia	113,072	38,633	12,713,398	0.48820
New York Utilities						
AES						
Greenidge	3 - 4	Torrey, New York	19,893	2,979	1,303,218	0.03075
Westover	7 - 8	Union, New York	17,490	2,606	1,084,105	0.02423
Mirant						
Lovett	4 - 5	Tompkins Cove, New York	9,890	4,256	2,295,212	0.02029
Niagara Mohawk						
Huntley	63 - 68	Tonawanda, New York	52,212	10,919	4,203,999	0.09225
Dunkirk	1 - 4	Dunkirk, New York	54,708	6,352	3,714,120	0.10410
Rochester Gas & Electric						
Russell Station	1 - 4	Rochester, New York	25,511	2,849	1,561,760	------
Beebe Station	12	Rochester, New York				

Source of information for: Sulfur Dioxide; Nitrogen Oxides and Carbon Dioxide emissions: http://www.epa.gov/airmarkt/emissions/score00/score00b1.pdf -2000 Acid Rain Program Emissions Scorecard. Source of information for Mercury emissions: http://www.epa.gov/ttn/atw/combust/utiltox/pltxplt3.pdf -Emissions of Mercury By Plant (Based upon plant reported fuel use and mercury tests).

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF NEW YORK

STATE OF NEW YORK, *et al.*	)	
Plaintiffs,	)	
v.	)	**Civil Action No. 02 CV 0024S**
	)	**Hon. William M. Skretny**
NIAGARA MOHAWK POWER CORP., *et al.*,	)	
Defendants.	)	

DEFENDANT NIAGARA MOHAWK POWER CORPORATION'S SUPPLEMENTAL BRIEF ON RECENT EPA ANNOUNCEMENT

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DEFENDANT NIAGARA MOHAWK POWER CORPORATION'S SUPPLEMENTAL BRIEF ON RECENT EPA ANNOUNCEMENT

On June 13, 2002, EPA announced "Recommended Improvements to the New Source Review Program." A copy of EPA's announcement is attached as Exhibit A. A copy of the Recommendations is attached as Exhibit B, and a copy of "Questions and Answers" in which EPA discusses its Recommendations is attached as Exhibit C.

The EPA recommendations concern a number of issues that may affect this case. These include interpretation of the rule excluding "routine maintenance, repair and replacement" from new source review (Ex. B §(5)); the methodology for calculating emissions increases to determine whether a plant project is subject to new source review (§(4)); when an emission increase in a unit "upstream" or "downstream" from the unit being changed is "caused" by the change (the "debottlenecking" issue) (§ (6)); and when different projects which separately might be below the threshold for PSD review should be aggregated. §(7).

1. The fact that EPA is reconsidering its position on issues relevant to the case affects our motion to dismiss, in which we submit that the Court should dismiss the counts alleging failure to implement BACT, because the DEC, as the "permitting authority," has not yet determined what BACT is for the Dunkirk and Huntley plants. We maintain, in the alternative, that if the Court does not dismiss the remaining counts, it should stay the case pending a determination by the DEC whether the operating permits it issued for the Huntley and Dunkirk plants should be reopened and amended to include a schedule of compliance with BACT.

The recent EPA recommendations are relevant to whether it is appropriate for this Court to consider the case before the DEC decides, in light of the EPA recommendations, (1) whether these plants are subject to new source review and BACT, and (2) if so, what BACT limitations should be. The DEC must act in accord with the federal Clean Air Act and federal regulations

and therefore must consider EPA's interpretation of the Act and regulations – an interpretation that EPA is presently reconsidering. Currently, the agency with authority to establish pollution control requirements for these plants (the DEC) has not issued a decision, and the agency with authority to interpret the governing legal standards (EPA) is reconsidering its position. In these circumstances, judicial intervention is clearly premature. In order to consider the merits of this case, the Court would ultimately have to decide whether EPA's interpretation of the Act and regulations, as applied by the DEC, is reasonable and in accordance with law. The Court cannot properly make that decision until the EPA decides finally what its interpretation is.

The fact that EPA is reconsidering its interpretation of the governing legal standards also supports the argument made in our motion to dismiss that the citizens suit provision of the Clean Air Act is limited to enforcement of emissions limitations that have been administratively established. Not only has the DEC not established the emission limitations for these plants, but also, the EPA is reconsidering its interpretation of the governing legal standards. That makes the State's attempted use of the citizens suit provision particularly inappropriate, since it would involve not only the Court establishing emission limitations, but also establishing the governing legal standards in the absence of guidance from the responsible federal agency.

Moreover, the EPA recommendations acknowledge that the new source review program requires clarification. Ex. B §§ (6), (7) ((EPA will "clarify" existing policy). EPA explained that its new source review program suffers from "regulatory uncertainty" and "confusion about the program's requirements." Ex. C § 2. EPA's acknowledgment of the need for clarification makes it particularly important that this Court not proceed with this action until administrative clarification is forthcoming.

At the hearing on June 26, 2002, the State expressed concern that EPA's actions will be delayed. However, some of EPA's recommendations involve merely finalizing proposals as to which formal notice and comment has already taken place. Ex. B §(4) (methodology for calculating emission increases). In addition, EPA states that it will "take steps to provide additional certainty about [routine maintenance, repair and replacement] during the pendency" of the notice-and-comment rulemaking that it plans to conduct on that issue. Ex. B §(5). Moreover, we have asked for a stay only until the DEC decides what it should do with respect to the Huntley and Dunkirk operating permits. The DEC would control the timing of the permit proceedings, can act expeditiously if it so desires, and is governed by State regulations that impose tight time limits on permit proceedings.[1] If, upon completion of the DEC permit proceedings, EPA has still not taken final action and the DEC decides to issue a final decision regardless of EPA's delay, it would then be appropriate for this Court to assess the situation at that time and determine whether it should proceed with the case.

2. The State has suggested that the EPA actions will have no effect on this case, because EPA rulemaking can have prospective effect only under Bowen v. Georgetown Hospital, 488 U.S. 204 (1988). However, even if EPA's final actions were prospective only, they would still affect the State's request for prospective injunctive relief.

Moreover, EPA's summary of its recommendations indicates that it will address some issues through interpretive rules that clarify the meaning of the Clean Air Act and existing regulations and thus may be applied retroactively. (Bowen involved legislative rather than

[1] Within 60 days of the permit application, the DEC must issue a notice containing a determination whether the application is complete, and if so a tentative determination of whether to issue a draft permit and a copy of the draft permit. 6 NYCRR §621.5(b)(1), (d)(7). Any hearing on the draft permit must commence within 90 days after the application is complete. §621.7(g). DEC must issue a final decision, with the permit (or permit denial) within 60 days after it receives the complete hearing record. §621.9(a)(3). This period must be delayed if EPA has not been provided with 45 days to review the draft permit. §621.9(a)(5).

interpretive rules.) For example, EPA states that its recommendations with respect to "debottlenecking" and "aggregation" will "clarify" existing law and policy. Ex. B, §§ (6), (7). In addition, EPA proposes to modify its definition of "routine maintenance, repair and replacement," which EPA excludes from new source review because of the agency's interpretation of Congressional intent.[2] Similarly, EPA's recommendation concerning the methodology for calculating emission increases (§(4)) will involve finalizing a 1996 rulemaking proposal which attempted to apply two judicial decisions interpreting the CAA. 61 F.R. 38250, 38254-55 (July 23, 1996), discussing Puerto Rican Cement Co. v. EPA, 889 F.2d 292 (1st Cir. 1989), and Wisconsin Electric Power Co. v. Reilly, 893 F.2d 901 (7th Cir. 1990).

The Second Circuit has held that a regulation that merely "interprets or elucidates the meaning of a statute" may be applied retroactively:

> The Plan contends that following Notice 96-8 improperly subjects the Plan to a retrospective application of a subsequent interpretation. We disagree. Because Notice 96-8 is an authoritative interpretation of existing statutes and regulation, we hold that it is valid guidance on the law as it applied at the time of Esden's lump-sum distribution. Cf. Chock Full O'Nuts Corp. v. United States, 453 F.2d 300, 303 (2d Cir. 1971) ("*To the extent that a regulation interprets or elucidates the meaning of a statute, it is merely explanatory or confirmatory rather than retroactive.*").

Esden v. Bank of Boston, 229 F.3d 154, 171 (2d Cir. 2000) (emphasis added). The D.C. Circuit has also ruled that an agency may apply a new interpretation retroactively when it represents "new applications of [existing] law, clarifications, and additions." Verizon Telephone

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[2] "[T]he EPA has recognized that Congress did not intend to make every activity at a source subject to major new source requirements under parts C and D. As a result, the EPA has adopted several exclusions from the 'physical or operational change' component of the [statutory] definition. For instance, the EPA has specifically recognized that maintenance, repair and replacement and changes in hours of operation or in the production rate are not by themselves considered a physical change or change in the method of operation within the [statutory] definition of major modification." 61 F.R. 38250, 38253 (July 23, 1996).

Companies v. F.C.C., 269 F.3d 1098, 1109 (D.C.Cir. 2001).[3] Of course, where an agency interpretation changes significantly, then retroactive application may be barred if the result is to penalize parties who did not have reason to anticipate the change. Trinity Broadcasting of Florida v. F.C.C., 211 F.3d 618, 629-30 (D.C.Cir. 2000). But retroactive application would not be barred if the result relieves parties of a penalty.

In short, EPA has said that its recommendations involve clarification of existing law and policy, and definition of a regulatory concept (routine maintenance, repair and replacement) that derives from EPA's interpretation of the Clean Air Act. Accordingly, to the extent that EPA's final action follows its recommendations, its action may affect not only the State's request for prospective injunctive relief, but also its request for penalties for alleged past violations.

3. The State might argue that since it has authority to ignore EPA's position, the Court should do so as well. It is true that the Clean Air Act allows States to impose stricter emission limitations than the EPA imposes. 42 U.S.C. §7416. However, the State's authority to be stricter than EPA has no relevance here. As to each of the ten plant units involved, the State has alleged two counts of federal violations, as well as one count of violation of the State Environmental Conservation Law.[4] The EPA interpretations have clear significance for the

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[3] While Verizon was an agency adjudication rather than rulemaking, the D.C. Circuit has stated that it will apply the same rule of retroactivity to an agency interpretive rule where the agency could have adopted the same interpretation in the course of an agency adjudication. Health Ins. Ass'n of America, Inc. v. Shalala, 23 F.3d 412, 424-5 (D.C.Cir. 1994). (By contrast, in apparent conflict with the Second Circuit's Esden decision, the D.C. Circuit applies the Bowen presumption against retroactivity to interpretive rules where the agency could not have adopted the interpretation through adjudication. Id.) EPA has authority to interpret the new source review provisions of the Act in adjudicatory proceedings when it issues permits, reviews State-issued permits, or takes administrative enforcement action. *E.g.*, In re Tennessee Valley Authority, 2000 EPA App. LEXIS 25 (E.A.B. Sept. 15, 2000), appeal pending (attached as Ex. B to Niagara Mohawk Reply Memorandum). Accordingly, even under the D.C. Circuit's view, an EPA rule clarifying its interpretation of new source review legal standards could be applied retroactively.

[4] For example, as to Dunkirk Unit 1, Count 1 charges failure to obtain a PSD permit pursuant to the Clean Air Act; Count 2 charges failure to implement BACT pursuant to the Clean Air Act; and Count 3 alleges violation of the State Environmental Conservation Law. The Complaint follows the same pattern as to the other 9 units. Counts 4-30.

federal counts. Moreover, even the state-law counts rest on state regulations that *incorporate the federal EPA requirements.*[5] Accordingly, even as to the Counts brought under the State Environmental Conservation Law, EPA's interpretation of the federal requirements is significant, and the Court should not proceed without it.

Respectfully submitted,

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Dated: June 28, 2002

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[5] For example, Count 3 alleges that various "modifications" at Dunkirk Unit 1 were major modifications within the meaning of the *federal* regulation and were therefore a violation of Part 201 of the State regulations. Complaint ¶¶ 93, 97. The Complaint alleges that Part 201 "prohibited the operation of an air pollution source *in violation of the PSD law*, including construction or performing a *major modification without a PSD permit and the implementation of BACT*." ¶36 (emphasis added). The underscored language refers to federal standards in the Clean Air Act and EPA regulations. Count 3 also alleges violation of §200.10(e) of the State regulations. ¶¶ 97, 98. The Complaint alleges that §200.10(e) "formally incorporated the federal PSD regulations by reference into state law." ¶37.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that, pursuant to the Federal Rules of Civil Procedure and pursuant to authorization of Judge Skretny during a June 26, 2002 status conference, I caused to be served on Friday, June 28, 2002 true and correct copies of Defendant Niagara Mohawk Power Corporation's Supplemental Brief on Recent EPA Announcement, dated June 28, 2002, by Telefax and by depositing same in a post-paid properly addressed envelope in an official depository under the care and custody of the United States Postal Service within the State of New York on:

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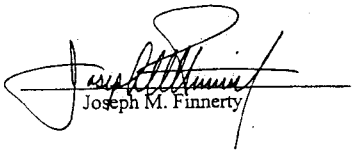

Joseph M. Finnerty

Section VII Maintenance and Life Extension

This section describes the last element of a successful steam generating system life cycle plan — integrated maintenance, condition assessment, and life extension programs.

As owners and operators of steam plants search for optimum performance, efficiency and life cycle for all equipment, issues of maintenance and life extension have become increasingly important. This section of *Steam* has been expanded to address these issues.

The section begins with a discussion of routine maintenance, encountered with all plants both utility and industrial. Maintenance programs are discussed, followed by specifics for both inspection and repair. Condition assessment is then addressed with detailed discussion about examination techniques, assessment of various components, and analysis techniques for determining remaining life. The effects of cycling operation are also addressed.

The section ends with discussions about life extension and upgrades, including specific examples. Aging is discussed and example upgrades are described.

Chapter 46
Life Extension and Upgrades

Older boilers represent important resources in meeting energy production needs. A strategic approach is required to optimize and extend the life of these units. Initially, routine maintenance is sufficient to maintain high availability. However, as the unit matures and components wear, more significant steps become necessary to extend equipment life. At the same time, boiler upgrades can incorporate technology advances to increase unit efficiency and availability and to address current operating problems or changing operating needs. Design changes can accommodate new fuel sources and permit the boiler to more easily accept cycling service.

Key issues to consider when optimizing a unit include understanding how boilers age, identifying the critical components, and determining the general types of upgrades possible. These elements are then combined with operating experience and equipment condition assessments (see Chapter 45) to develop integrated strategic plans for individual boilers.

Power plant aging

At the beginning of power plant life there is a period in which the operators and maintenance crews learn to work with the new system and minor problems are resolved. This period may be marked by a high forced outage rate, but this quickly declines as the system is broken in.

As the plant matures, the personnel adapt to the new system, and any shortcomings are overcome or better understood. During this phase the forced outage rate remains low, availability is high, and the operating and maintenance costs are minimal. This mature phase normally lasts 25 to 30 years, depending on the design and use of the unit. The power plant is usually operated near rated capacity during this period.

Following this phase, the aging process becomes noticeable. Forced outages and maintenance costs increase, and availability declines. Component end of life usually causes the higher forced outage rate. Occasional operational error and the degradation of boiler components due to erosion, corrosion, creep and fatigue lead to localized failures. The forced outage rate steadily increases during this phase unless major overhauls or component replacements are instituted. A typical variation in forced outage rate with time through this aging process is shown in Fig. 1.

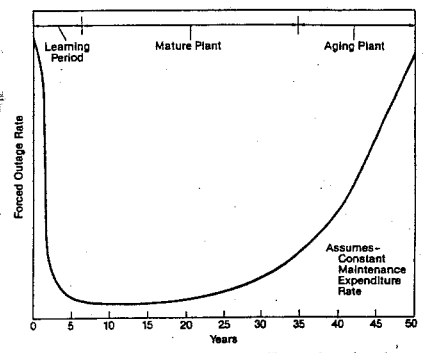

Fig. 1 Theoretical forced outage rate curve with no major action taken.

Traditional roles of the aging plant

As the aging plant becomes less reliable, its role is often changed. Newer, more reliable plants are less costly to maintain and are generally more efficient to handle the base power load. The older plants become auxiliary units or are designated for peaking service. Older plants with higher heat rates, i.e., lower efficiencies, or with low capacity may be retired. Prior to the 1980s, it was assumed that older plants would be torn down to make room for the newer, larger, more efficient units. It was common to retire a plant after 35 to 40 years of service.

This planned obsolescence began to change in the early 1980s. The cost of newer, more efficient plants became more than most boiler operators could readily finance. As a result, new construction was delayed and plans to retire the older plants were put on hold. The need to keep the older units running brought about the new strategy of *life extension*. This is a strategy that delays the plant retirement while maintaining acceptable availability. The strategy requires the replacement of some components to keep the plant running with acceptable forced outage rates and maintenance costs. These replacements or repairs expand upon those traditionally incorporated in a plant maintenance program. Significant capital ex-

penditures are normally required to affect the availability rate. Fig. 2 illustrates the impact of life extension capital on a typical availability curve.

The availability curve drops dramatically after 25 years. Major component failures can cause significant drops in the availability curve due to the resultant long outage times. For example, failures in turbine rotors, steam lines, and steam headers and drums can cause major forced outages. A life extension program that includes capital expenditures to replace this equipment before major forced outages occur can smooth out the availability curve. Higher availabilities usually require higher capital expenditures. The large expenditures needed for high availability in older plants require a strategic plan to yield the best balance of expenditures and availability.

Impact of environmental regulations

The United States (U.S.) federal environmental regulations concerning air pollution limit the release of pollutants from power plants. (See Chapter 32.) The regulations effectively discourage the prolonged life of older units with high emissions. The most recent legislation limits the amount of pollutants released into the atmosphere. As power consumption grows, the resultant increased capacity pushes emissions toward their regulated maximum. There is a strong incentive then to replace the older units with newer, less polluting units or to modify the older units to reduce their pollution contribution. This situation has a strong influence on life extension strategies developed for older units. Power plant owners must consider the investment required to maintain availability and to meet reduced emissions levels.

Another environmental consideration that enters into the life extension strategy is the increase in emissions that may result from capital investments that increase or restore capacity. The increased boiler emissions may push overall system emissions over the regulated limits. Therefore, any life extension program that includes a capacity increase must consider that pollution control equipment may be required.

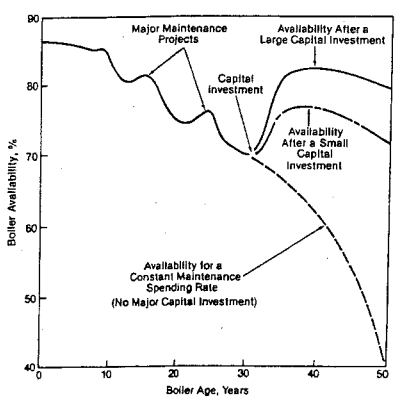

Fig. 2 Typical availability curve for a large, high pressure power boiler with life extension capital expenditures.

Operational improvements included in a life extension program

The capital involved in a life extension program is generally less than half the cost of a newer plant with similar capacity. While the driving force for a life extension program may be to stretch present resources to meet current demands, an extension program can also achieve a return on investment in the older plant. The payback can be realized when the capital improvement results in a lower heat rate, higher capacity, reduced routine maintenance, or lower forced outage rates. There have been numerous life extension programs that have added 30 years to the life of a plant while achieving a payback in as little as one year.

When considering a life extension strategy it is important to first review the boiler and its place in the power system. It is useful to review any operating and maintenance problems or limitations. The long term needs of the system must be understood. Those operating and maintenance characteristics that limit the usefulness or profitability of the plant must be addressed in the life extension program.

Aging of typical boiler components

Various boiler components deteriorate at rates and by mechanisms that are unique to each component. These rates are dependent upon the component design, function and operation. It is useful to first review component aging in a low pressure, low temperature unit operating at less than 1200 psi (82.7 bar) and 900F (482C) final steam temperature. These units are more easily discussed because the component aging mechanisms seldom involve high temperature creep rupture.

Aging of low pressure, low temperature units

Boilers that operate at less than 1200 psi (82.7 bar) pressure and 900F (482C) final steam temperature generally operate for a longer period of time with less maintenance than those units operating above these levels for a given fuel. The major sources of maintenance problems with lower pressure boilers are corrosion, erosion, fatigue and overheating.

Boiler corrosion occurs inside and outside the tubes, pipes, drums and headers. Internal corrosion is usually associated with the boiler water, contaminants in the water, and improper chemical cleaning or poor storage procedures. External corrosion can be caused by corrosive combustion products, a reducing atmosphere in the furnace, moisture between insulation and a component, and the moisture formed on components in the colder flue gas zones when the gas temperature reaches the dew point. Corrosion results in wall metal loss from the boiler component. This wall thinning raises the local stresses of the component and can lead to leaks or structural failure.

Corrosion may also be accelerated by the thermal fatigue stresses associated with startup and shutdown cycles. Furnace wall tubes, in areas of differential and high heat flux, often contain internal longitudinal or external circumferential corrosion fatigue cracks in cycled units.

Corrosion fatigue is a common problem in the drum around rolled tube joints. The residual stresses from the tube rolling process are additive to the operating pressure stresses. Corrosion from chemical cleaning and water chemistry upsets acts on this highly stressed area to produce cracking around the seal weld or the tube hole. Extensive cracking can require drum replacement. Corrosion problems are further discussed in Chapter 42.

Erosion of boiler components is a function of the percent ash in the fuel, ash composition and the local gas velocity. The tube wall loss associated with erosion weakens the component and makes it more likely to fail under normal thermal and pressure stresses. Erosion is common near sootblowers, on the leading edges of superheaters and reheaters, and around eddies in the flue gas caused by closely spaced tube surfaces, slag deposits, or other obstructions including extended surfaces and staggered tube arrangements.

The thermal stresses from temperature differentials that develop between components during boiler startup and shutdown can lead to fatigue cracks. These cracks can develop at tube or pipe bends; at tube-to-header, pipe-to-drum, fitting-to-tube, and support attachment welds; and at other areas of stress concentration. Smaller boilers are less prone to fatigue failures because the thermal differentials operate over small distances in these units. As unit size and steam temperature increase, the potential for thermal stresses and the resulting fatigue cracking rise proportionately.

Overheating is generally a problem that occurs early in the life of the plant and can often result in tube ruptures. The nature of failures attributable to overheating is discussed in Chapters 6, 42 and 45. These problems may often go undetected until a tube failure actually occurs. Overheating attributable to operation is generally resolved during the early stages in the boiler life. Other problems regarding overheating may be difficult to ascertain, and specialized boiler performance testing (see Chapter 40) is generally required to identify the source of the difficulty and to determine the extent of correction needed.

In spite of these aging mechanisms, low pressure and low temperature boilers are normally expected to last more than 50 years without major overhauls unless the unit burns a corrosive fuel, experiences fuel changes, or is improperly operated. When erosion, corrosion, fatigue, or overheating lead to frequent leaking, failures, or the threat of a major safety related failure, then component repair, redesign, or replacement is appropriate.

High pressure, high temperature units

Boilers operating at pressures above 1200 psi (82.7 bar) and 900F (482C) final steam temperature suffer from more complicated aging mechanisms than the lower temperature units. These boilers are generally larger than the low pressure, low temperature units and this increases the likelihood of thermal fatigue resulting from boiler cycling. These high temperature boilers are prone to the same overheating, erosion, and corrosion problems that cause component deterioration in the low temperature units. The higher pressures and associated higher furnace wall temperatures make these units more susceptible to water side corrosion. The high temperatures may promote hydrogen damage of the furnace tubing in areas of high corrosion or heavy internal deposits. Chapter 42 discusses these deterioration mechanisms in more detail. Severe cases of furnace wall hydrogen damage have forced the retirement of older units.

High temperature creep rupture and creep fatigue failure (see Chapters 6 and 7) are the two main aging mechanisms in the high temperature components of high temperature boilers. All components that operate at temperatures above 900F (482C) are subject to some degree of creep. As a result, most of these components have a finite design life and can fail after 20 to 40 years of operation. Chapter 6 discusses creep more fully. Most of the tubes, piping, and headers from the primary superheater to the turbine, including the superheater and reheater, are designed to operate in the creep regime. Replacement and redesign of these components must be considered in any strategy for operating high temperature, high pressure boilers beyond 25 to 35 years. (Fig. 3.)

It is common to replace a superheater after 25 years of service due to creep rupture incidents. Superheater outlet headers have also been replaced after 25 years due to creep fatigue cracking. Chapter 45 discusses methods for predicting creep ruptures in high temperature superheaters and reheaters and for assessing the condition of high temperature piping and headers. Availability of these high temperature units in the later years of operation generally follows the curve shown in Fig. 2, mainly because of creep ruptures and creep fatigue failures.

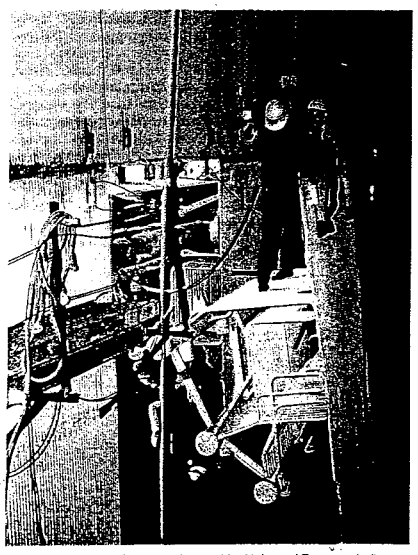

Fig. 3 Replacement furnace mix panel for Universal Pressure boiler.

The aging process and rate of component degradation vary from unit to unit. Table 1 presents the component replacement sequence for a typical high pressure, high temperature unit. After 40 years of operation most boiler pressure part components have been replaced.

Design limitations addressed in a life extension program

When some portion of the boiler must be replaced, the owner has an opportunity to upgrade this portion. A component upgrade can improve boiler operation and reduce maintenance costs. As previously discussed, these improvements may offer a payback for the upgrade. This section discusses several types of component upgrades. The variety of possible modifications is quite large depending upon the boiler involved, advances in technology, changes in fuels burned and changing operation requirements.

Upgrading boiler components to reduce coal erosion

Most older boiler components do not contain highly wear resistant materials in high erosion areas. These areas, such as coal pulverizers, require frequent and sometimes costly maintenance. Advanced materials have been developed specifically for boiler fuel handling applications. Materials have evolved from basic low carbon steels to ceramic linings. These linings include high density, high alumina ceramics and silicon carbide ceramics. The alumina ceramics with 96% alpha alumina and a density of about 232 lb/ft^3 (3716 kg/m^3) are ideal for components exposed to high velocity coal particles. These alumina linings provide up to ten times the wear resistance of carbon steel. The nitride-bonded silicon carbide ceramics have good erosion and corrosion properties, and they provide high thermal conductivity and superior thermal shock resistance. These ceramics are used in the most severe applications.

Typically, ceramic linings are used in coal transport equipment, pulverizers (see Chapter 12), piping, exhaust fans and burner nozzles. The extent of application depends upon the relative erosive nature of the specific coal and the associated velocities. Table 2 gives some guidelines for the application of ceramic linings to coal piping. Ash composition affects the erosiveness of the coal. Large percentages of clay, alumina, silica, pyrite and quartz also increase coal's abrasiveness. The guidelines given in Table 2 assume a silica composition of 40%. High silica contents increase the abrasiveness of the coal.

Table 1
Component Replacement Schedule for a Typical High Temperature, High Pressure Boiler

Typ. Life (Years)	Component Replaced	Cause for Replacement
20	Miscellaneous tubing	Corrosion, erosion, overheating
	Attemperator	Fatigue
25	Superheater (SH)	Creep
	SH outlet header	Creep fatigue
	Burners and throats	Overheating, corrosion
30	Reheater	Creep
35	Primary economizer	Corrosion
40	Lower furnace	Overheating, corrosion

Note: The actual component life is highly variable depending on the specific design, operation, maintenance and fuel.

Table 2
Recommendations for the Application of High Density Alumina Ceramic Linings in Coal Piping

Ash Content of Coal	Recommendations
Less than 6%	No ceramic lining required.
6% to 9%	Use ceramic lining from the pulverizers to the first major bend plus two pipe diameters beyond the bend. Line all short radius bends and two pipe diameters beyond these bends.
More than 9%	Same as above except, also line all bends and the pipe two diameters beyond these bends.

High temperature outlet header upgrades

Chapter 45 describes the mechanisms for reheater and superheater outlet header failures. The main failure modes are tube-to-header weld failures, ligament cracking and nozzle cracking. These failures are caused by the combined effects of thermal cycling and creep, often called creep fatigue. Advanced design standards for headers have been developed to help reduce these failures. When an outlet header must be replaced, a design upgrade should be considered. An upgraded header can provide long term, reliable service even under cycling conditions.

Nozzle cracking, discussed in Chapter 42, is associated with the weld in a tee nozzle or in the internal sharp corners of a forged design. Any header upgrade could include a forged tee to eliminate the welded connection. The forging would include generous radii to reduce stress concentrations.

Under cycling service, the tube-to-header weld area may develop cracks due to inadequate tube leg flexibility or due to thermal stresses in the header. Cracking due to inadequate tube leg flexibility can be overcome by providing longer or more flexible tube legs between the furnace penetration and the header. However, this modification may require header relocation and/or relocation of the tube penetrations.

Relocating the tube penetrations around the header may also be necessary to avoid header ligament cracking, discussed in Chapter 45. Many headers were designed with closely spaced or nonsymmetrical tube penetrations, as shown in Fig. 4, which are more prone to creep fatigue ligament cracking. Studies have shown that creep fatigue cracking can be decreased by using larger ligaments. Upgraded headers with widely spaced tube penetrations provide larger ligaments and lower ligament temperatures and stresses. As a result, header life is significantly increased.

Redesign of the tube hole penetrations and tube-to-header weld configuration, as shown in Fig. 5, can also increase the life of a high temperature header. Full penetration tube-to-header welds may be used in place of partial penetration socket welds. Elimination of the nonfusion region in the partial penetration weld reduces the stresses around the weld joint and eliminates crack propagation from the end of the gap created by lack of penetration.

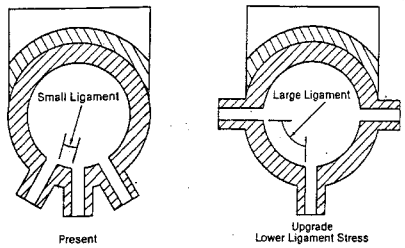

Fig. 4 Increased ligament size for longer design life.

The tube hole in the header creates a sharp discontinuity at the intersection of the hole and header internal surface. Very high stresses associated with this sharp corner cause creep fatigue cracks to initiate from the hole. A redesigned header may also be fabricated with a chamfer at the tube hole penetration as shown in Fig. 5. The chamfer lowers the stress around the hole and reduces creep fatigue cracking.

The easiest upgrade for a high temperature header is an upgrade in material. American Society of Mechanical Engineers (ASME) SA335-P11 headers may be upgraded to SA335-P22 or P91 materials, and SA335-P22 headers may be upgraded to SA335-P91. The material upgrade generally results in a dramatic increase in header life, and in many cases it is anticipated that these upgrades may nearly double the life of certain components.

Cycling boiler upgrades

Many older and larger fossil power boilers were not designed to accommodate frequent on/off cycles. Design criteria for cycling service boilers are limited due to the lack of long term experience with large units. Cycling service can cause fatigue failures in the economizer tubing and inlet header, lower furnace wall tubes and headers, structural components such as buckstays, and some steam drum internals. As discussed in Chapter 45, this fatigue cracking can be caused by the sudden flow of cold water into hot boiler components. Thermal differentials of 200 to 400F (111 to 222C) can be created. Furnace subcooling, boiler forced cooling during a shutdown, and intermittent cold feedwater flow into the boiler during startup are three sources of thermal differentials and cyclic cracking. The thermal stresses produced within the components may be sufficient to produce low cycle fatigue cracks. The solution in most cases is to modify the boiler and/or feedwater system to prevent the sudden entry of cold water into hot components.

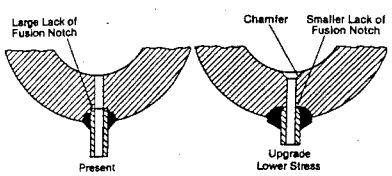

Fig. 5 Header upgrade with redesigned tube penetration.

When a boiler is experiencing cracking due to subcooling and cold feedwater flow upon startup, an off-line pump-assisted circulation system may be installed to reduce the thermal transients. The system, as shown in Fig. 6, consists of an off-line circulation pump, a thermal sleeved tee connection between the off-line pump and the feedwater line, a connection line from the boiler downcomer to the pump, a warming bypass system, various valves and a control system.

The off-line pump is only operated when the boiler is shut down. Its purpose is to provide a small amount of circulation within the furnace circuit and through the economizer to prevent temperature stratification in the water circuits. The tee connection permits the introduction of a small amount of hot water from the furnace into the feedwater stream when feedwater is intermittently supplied to the boiler and before a steady feedwater flow is established. The warm furnace water introduced at the tee connection raises the feedwater temperature enough to prevent thermal shock to the economizer. The connection contains an internal thermal sleeve that protects the tee from a thermal shock when cold feedwater is first fed to the economizer. A control system monitors the feedwater temperature and flow and controls the recirculation pump. When the boiler startup sequence is initiated, the off-line system is shut down and isolated. Warming lines permit natural circulation through the pump when it is shut down and the boiler is off-line.

Experience with off-line recirculation systems has shown that thermal shock differentials can be reduced to less than 100F (56C) from previous levels of 200 to 300F (111 to 167C). Such a reduction may eliminate the fatigue cracking that is associated with frequent unit cycling.

Drum boiler bypass system upgrade

Steam turbine transient stresses associated with on/off operation or load cycling shorten turbine life. Long startup times required to minimize these stresses lead to costly fuel consumption. Drum boilers can be upgraded with a superheater bypass system for improved cycling capability. The bypass system upgrade can be installed on a drum boiler to minimize startup time, provide control of steam

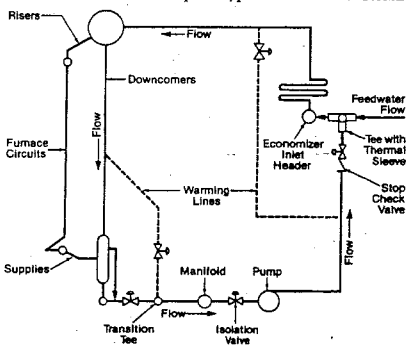

Fig. 6 Off-line recirculation system to reduce thermal shock.

temperature to match turbine metal temperature, and allow dual pressure operation of the boiler and turbine for better load response. These features reduce turbine stresses for improved availability and reduced maintenance costs.

The common means of steam temperature control in a drum boiler (water attemperation in conjunction with parallel convection surface, gas recirculation, excess air, or burner input adjustments) do not permit easy control of turbine temperatures during startup and low loads. This is because there is a large mismatch between flue gas flow and steam flow. The drum boiler bypass system, shown in Fig. 7, provides direct control of the steam temperature by saturated attemperation of the superheat and reheat outlet steam. This arrangement provides the desired steam temperature for the turbine without undue restrictions on the startup firing rate.

The drum boiler bypass system substantially reduces cold startup time because it controls the temperature differences of the saturated boiler surface, superheater surface, and turbine. The bypass system consists of a control system with steam piping and valves (see Fig. 8) and is described in detail in Chapter 18.

The system has a set of superheater stop and bypass control valves downstream of the primary superheater to allow dual pressure operation; the turbine throttle pressure is controlled separately from drum pressure. This control system is designed to maintain constant pressure operation of the drum and boiler furnace circuits and variable pressure operation of the turbine, because the turbine throttle valve is open over most of the load range.

Dual pressure operation minimizes thermal stresses to the boiler and the turbine. A dual pressure shutdown keeps the boiler near full pressure and the turbine metal near full load temperature in preparation for a quick restart. In addition, it allows more rapid load changes than variable boiler pressure operation.

A superheater bypass diverts excess steam from the boiler to the condenser, thereby separating firing rate from drum pressure during shutdown and startup. Gas temperature probes, located near the superheater and reheater outlet tubes, monitor flue gas temperatures.

The superheater bypass system permits cycling the unit rapidly and often without accumulating major turbine damage.

Circulation and capacity upgrades

Water circulation upgrades are often required to overcome operational and maintenance problems. Symptoms of a circulation problem include localized tube failures

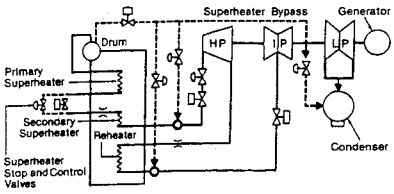

Fig. 7 Typical superheater bypass system for a drum boiler to minimize turbine stress.

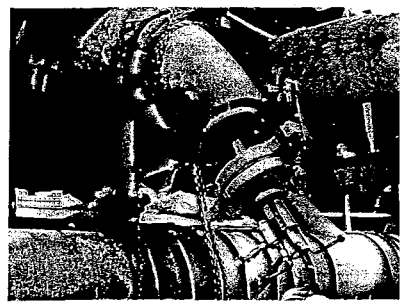

Fig. 8 Large diameter piping for bypass system.

in particular boiler circuits, increases in water side and steam side deposits and pressure drops, fluctuations in feedwater control, and drum water level excursions and fluctuations. Occasionally, circulation problems may appear when supply tubes or headers for the furnace waterwall circuits crack and distort. Circulation problems can directly affect boiler performance and, if severe, can reduce capacity and availability.

Determining causes and solutions for circulation problems requires boiler performance testing, heat transfer and circulation computer modeling, and a thorough knowledge of boiler dynamics. Thorough discussions of heat transfer and circulation are covered in Chapters 4 and 5.

Consider an example boiler with circulation problems. This unit was experiencing an abnormally high forced outage rate due to tube failures in the platen wingwalls as well as extensive failures of the furnace rearwall arch tubes. Fig. 9a illustrates the upper furnace configuration and arrangement of the wingwalls.

The majority of tube failures in this unit were found in the lower 17 deg (0.3 rad) inclined portion of the wingwalls. Some time later, the rearwall arch tubes began failing, especially in the lower inclined area. Poor water chemistry and resultant heavy internal tube deposits were originally blamed for the tube failures. If water chemistry is not properly controlled, an internal mineral buildup can occur. These deposits act as insulators. The circulating water can not sufficiently cool the tube which then fails due to short term, localized overheating. However, water chemistry was monitored and found to be acceptable in this case.

The tube failure rate affected availability and the unit had to be derated. The loss of generating revenue was large enough to justify major expenditures to remedy the situation.

A complete engineering study was required to review the plant operating procedures and the original boiler design. The study goals included:

1. analyzing the overall boiler circulation system,
2. reviewing the platen wingwall design,
3. examining the design and performance of steam drum internals,
4. investigating the rearwall arch and supply circuit design, and

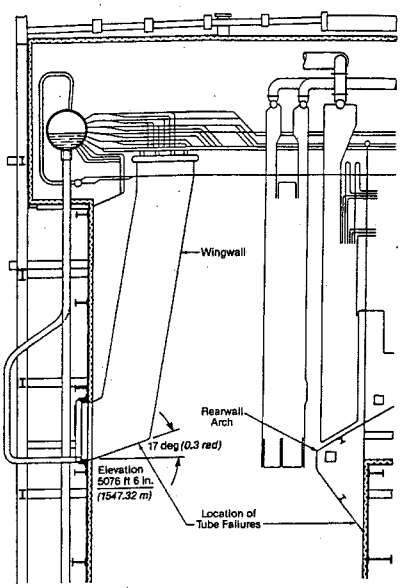

Fig. 9a Original upper furnace arrangement.

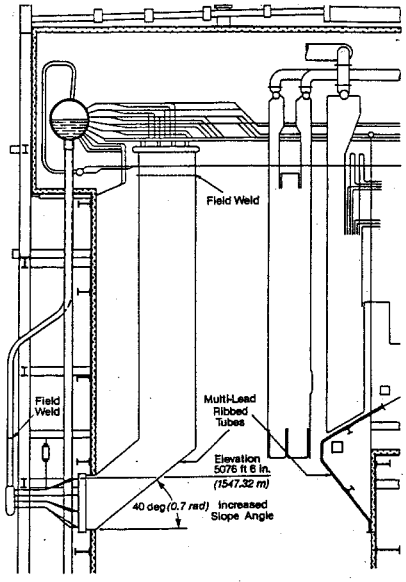

Fig. 9b Upper furnace arrangement for a circulation upgrade.

5. providing operational and hardware modifications to eliminate the tube failures in the platen wingwalls and rearwall arch tubes.

Field tests were conducted to verify the operating parameters. A computer simulation focused on the circulation of the steam drum, wingwall and rearwall arch tube circuits. Mass flow velocities in these tubes were found to be low. These low velocities contributed to flow imbalances between circuits as well as film boiling conditions inside the tubes. The steam film acted as an insulator, producing numerous overheat failures.

The existing drum internals were also found to be significant contributors to the circulation problem. The separators in the steam drum generated a high pressure drop. This high pressure drop reduced the pumping head for the wingwall and rearwall arch circuits, contributing to poor circulation and flow imbalances. The drum water level, 9 in. (230 mm) below the drum centerline, permitted steam to be drawn into the downcomers. This further reduced the effective water density (pumping head) and mass flow velocities in the furnace circuits.

Once the circulation problems were fully identified and analyzed, specific solutions were recommended. The key modifications implemented in the circulation upgrade were as follows (See Fig. 9b):

1. New drum internals. Three rows of highly efficient, low pressure drop cyclone separators replaced the existing two rows of high pressure drop turbo-separators. (See Fig. 10.) The drum water level was increased from −10 in. (−254 mm) to the centerline. These modifications increased the available head for all circuits. However, the wingwall circuits with their extremely flat characteristic predictably received the greatest flow increase.

2. Redesigned wingwalls. The overall length of the wingwalls was increased to raise the heat absorption in these vulnerable circuits, based on the natural circulation principle of more heat, more flow. (Fig. 11.) This also lowered the furnace exit gas temperature by about 35F (19C) which reduced the tendency of slagging beyond the furnace. A third benefit was a slight reduction in superheat and, especially, reheat spray, both being excessive on the existing unit.

The bottom slope was increased from 17 to 40 deg (0.3 to 0.7 rad) and the tube diameter was decreased. Multi-lead ribbed tubes were used instead of internally smooth tubes in the sloped portion. These measures were aimed at eliminating film boiling and flow instabilities, identified as the root cause of tube failures in these circuits. Film boiling in these circuits promoted formation of internal deposits and corrosion due to stagnant flow conditions. The increased flow resistance was more than offset by the greater pumping head generated by the new design.

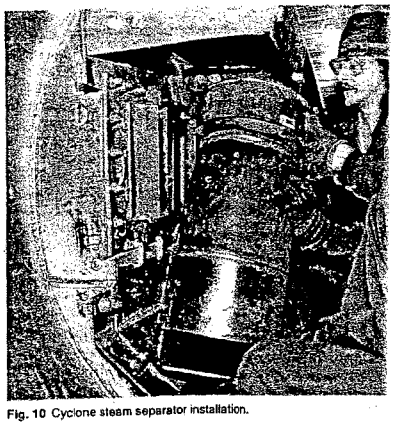

Fig. 10 Cyclone steam separator installation.

3. Redesigned water supply system. The existing downcomers were lengthened and closed off by new downcomer bottles. Each bottle was equipped with eight supply pipes, four feeding each vertical wingwall inlet header. To achieve the best flow distribution to all wingwall circuits, each of the inlet headers was divided into four chambers by three diaphragms. These diaphragms received a small, central perforation to allow complete draining of the headers during outages.
4. Redesigned rearwall arch. Multi-lead ribbed tubes were installed in the rearwall arch in the form of shop-membraned tube panels. This eliminated the failures in the lower bend area. The original transition from the 2.5 in. (63.5 mm) OD rearwall tubes to the 3 in. (76.2 mm) arch tubes created a steam-water jet along the unheated side (inside of the extrados) of these bends and a corresponding void on the inside of the tube bends. This had caused the crucial bend sections facing the furnace heat to fail due to insufficient cooling. For safety, the arch tubes were also redesigned as multi-lead ribbed tubes.

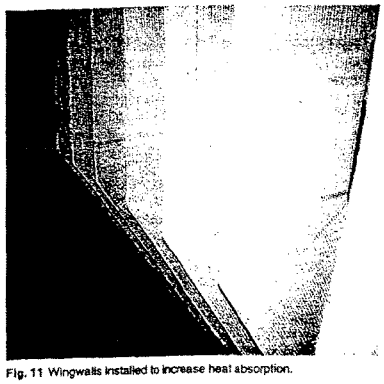

Fig. 11 Wingwalls installed to increase heat absorption.

The overall boiler circulation was significantly improved, and a high safety margin prevented the recurrence of failures in the wingwalls or rearwall tubes. The circulation upgrade restored 100% load capability and improved unit reliability and availability.

Superheater and economizer upgrades

Chapters 18 and 19 and earlier portions of this chapter summarize the design, function, operation and aging of superheater and economizer components. The normal aging processes of corrosion, erosion and creep progressively damage these components and they must be replaced from time to time. Any time a replacement is needed, there is an opportunity to upgrade the existing materials, configuration, and/or performance. Upgrades that are performed on older boilers benefit from the development of advanced materials, improved designs, and innovative analytical techniques. (Fig. 12)

Superheater upgrade Consider a utility that had recurring tube failures in the secondary superheater of an oil-fired boiler. Ash corrosion from the fuel oil caused failures in the tubes exposed to the higher operating temperatures. Fig. 13 illustrates the arrangement of the boiler.

The furnace gas temperature at the leading edge of the superheater was nearly 2800F (1538C). High superheater tube temperatures resulted from this unusually high furnace exit gas temperature (FEGT). External tube corrosion was accelerated by this high temperature and the high vanadium and sodium contents in the oil. Tube failures occurred so frequently that the bottom three rows of the horizontal superheater had to be replaced every 18 months.

An upgrade in superheater design usually requires field testing to define the operating conditions followed by a detailed engineering study. To correctly design the upgraded superheater, boiler operating temperatures were obtained. A computerized boiler model was used for the performance testing. This system revealed that the actual FEGT was 125F (69C) higher than the design

Fig. 12 Retrofit economizer redesigned to eliminate plugging and erosion.

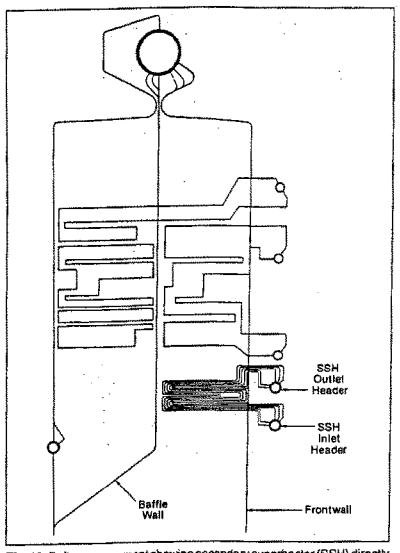

Fig. 13 Boiler arrangement showing secondary superheater (SSH) directly above furnace where gas temperatures reach 2800F (1538C).

value. The high FEGT was a result of furnace design and burner arrangement. Because it was impractical to redesign the furnace or change to a less corrosive fuel, and the owner did not wish to derate the unit, a design study concentrated on a superheater upgrade.

A new superheater was designed using the actual FEGT. This allowed the tubes to continuously function at the higher temperatures without producing overheat or corrosion related failures. In the final arrangement of the superheater upgrade, the three lowest tube rows were replaced with a high chromium nickel alloy material 800H. (See Chapter 6.) The remaining tubes in this bank were replaced with a stainless steel material. A new support method, which allowed greater material expansion at the elevated operating temperatures, was also devised.

Economizer upgrade Another example of an upgrade which improved boiler capacity and availability involved a finned tube economizer. A 600 MW, coal-fired boiler was designed with a staggered, finned tube economizer. The economizer, shown in Fig. 14, was equipped with longitudinal fins. In clean condition these fins increase heat transfer and reduce the amount of tubing required.

Shortly after this unit went into operation, the economizer experienced severe flyash plugging. The utility tried various solutions from extensive sootblowing to forcing the staggered tubes in line. As the flyash plugging spread through both banks, system gas flow resistance more than doubled. The increased flue gas resistance pushed the boiler fan to its limit and limited boiler load. Extremely high ash velocities caused tube erosion and resulted in numerous tube failures. Unit availability and reliability were greatly reduced.

An engineering evaluation determined that the existing finned economizer was not appropriate for the high ash coal used as the main fuel. The staggered tube pattern only increased the severe flyash plugging. An analysis showed that an in-line bare tube economizer with equivalent performance could be fitted into the existing space. Fig. 15 illustrates the upgraded in-line economizer design.

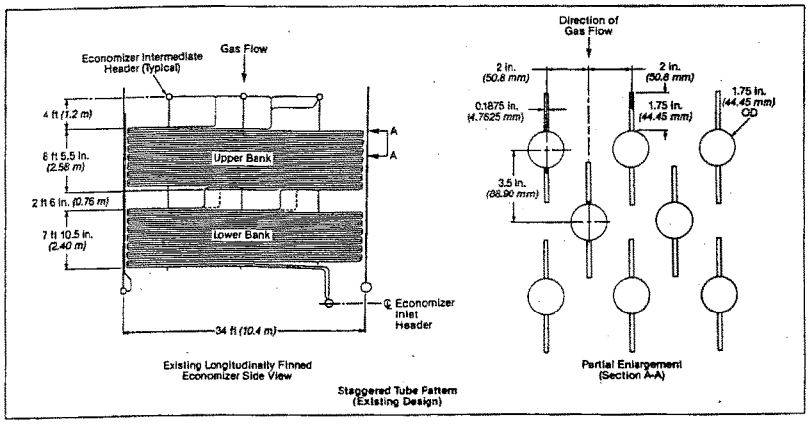

Fig. 14 Original staggered tube, finned economizer that experienced severe flyash plugging.

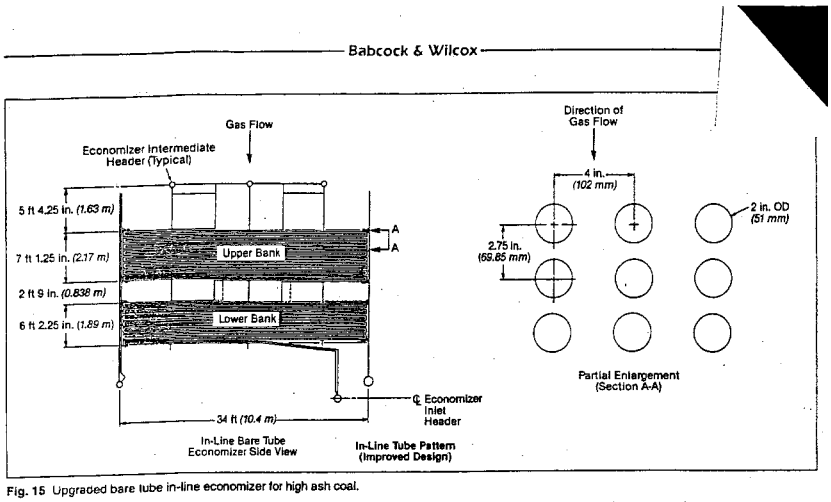

Fig. 15 Upgraded bare tube in-line economizer for high ash coal.

The upgraded economizer included the following features:

1. Vertical spacing between tubes was decreased to allow installation of more tube rows and to minimize gas side resistance.
2. An in-line arrangement, which reduced gas side pressure drop and potential for ash erosion, was used.
3. The economizer tube diameter was increased from 1.75 to 2 in. (44.5 to 50.8 mm) to achieve a higher flue gas velocity and better convection heat transfer without exceeding the allowable velocity limit for the percent ash and percentage of abrasive silica and alumina constituents in the fuel. Bare tubes arranged in line are most conservative in such hostile environments, are least likely to plug, and have the lowest gas side resistance per unit of heat transfer. The weight of the new economizer did not exceed the original weight. Also, the new economizer required no more space than the original design.
4. The tube bends were protected by new erosion barriers on top and bottom of both banks. Properly designed barriers do not noticeably reduce the effective heating surface, but are very effective in throttling the flue gas flow across the tube bends along the enclosure walls. Without barriers, the open space between the return bends and the enclosure walls would be the path of least resistance, and flue gas would stream through these gaps at very high velocities. The effect would be excessive erosion of the bends, reduced overall heat transfer across the banks, and possible damage to uncooled casing. The existing inlet and intermediate headers were reused. Access doors and platforms did not have to be relocated or modified.

The upgraded economizer has experienced no flyash plugging. The recurring tube erosion problem has also been completely eliminated. As a result, the unit's reliability and availability have been significantly restored. The boiler now operates at full load and has not been limited by economizer problems.

Fuel switching and capacity upgrades

Fuel switching is one method that permits utilities to comply with mandated sulfur dioxide (SO_2) emissions limits. The major objective of changing coal type is to reduce the amount of SO_2 produced. Many of the boilers designed and built in the U.S. during the last four decades have fired Eastern bituminous and Midwestern subbituminous coals. These fuels have high heating values and low ash content, but they also usually have an unacceptably high sulfur content. A switch to a low sulfur coal may reduce SO_2 emissions, but it may also have adverse effects on unit performance due to a change in fuel ash content or other fuel characteristics. A thorough study of the change is required. Test burns of a trial fuel are made to evaluate its operational effects. Specific attention is paid to flame stability at different loads, furnace and convection pass slagging and ash loading, pulverizer performance, emissions control equipment performance, and emission changes.

Switching to one of the subbituminous fuels usually reduces SO_2 emissions to acceptable levels but can adversely impact the performance of the boiler island equipment. If the boiler and auxiliaries were designed solely for bituminous firing, switching to a subbituminous fuel could lead to reduced load, increased operating and maintenance expenses, and higher fouling and slagging in the furnace.

While the detailed discussion for rating and analyzing fossil fuels can be found in Chapter 8, the key differences between low and high sulfur coals need to be reviewed. Table 3 highlights the fuel and ash components that most affect boiler performance. An Eastern, high sulfur bituminous coal is used as the reference point. The relative differences between this coal, a Western subbituminous low sulfur coal, and an Eastern bituminous low sulfur coal are shown.

As seen in Table 3, a Western subbituminous fuel generally has a much lower heating value than its high sulfur bituminous counterpart.

Table 3
Comparison of Bituminous and Subbituminous Fuels
Differences in Fuel Properties and Boiler Performance

Fuel Properties	Eastern Bituminous High Sulfur	Western Subbituminous Low Sulfur	Eastern Bituminous Low Sulfur
HHV,* Btu/lb (kJ/kg)	10,570 (24,586)	22% lower	25% higher
Relative fuel flow	1.0	1.27	0.8
Moisture, %	14.25	More than doubled	Less than half
Ash, %	13.41	30% less throughput**	60% less throughput**
Ash slagging potential (furnace)	Medium	High/severe	Low
Ash fouling potential (convection pass)	Low/medium	Medium/high	Low
Volatility	Little change		
Combustion	Little change		
Air preheat	300F (149C)	500F (260C)	300F (149C)
Ash reflectivity	–	Some increase	About same
Coal grindability	Little change		

* Higher heating value
** Throughput based upon constant heat input to boiler

Coal handling equipment considerations If the same electrical generating capacity of the unit is to be maintained, then the fuel flow must increase. The capacities of the coal conveyors, feeders, pulverizers and burners must be checked to determine if these components can accommodate higher fuel flows. One other important factor to be considered when switching to a low sulfur Western fuel is its tendency to be more friable (likely to generate dust). As a result, fugitive dust emissions during unloading, crushing, conveying, storage, and pulverizing increase greatly. This results in an increased risk of fires and explosions. Improved operating procedures can be implemented to manage the fugitive dust. Additional equipment or facilities may also be required. Some of the options that could be required are:

1. enclosed conveyors,
2. improved ventilation systems,
3. conveyor and bunker dust suppression systems,
4. pulverizer fire inerting/fogging equipment,
5. electrical modifications to minimize spark formation,
6. improved housekeeping, and
7. changes in coal receiving facilities (conveyor, barge, truck, rail). (See Chapter 11.)

As the fuel flow is increased to the boiler, higher velocities in the coal pipe can contribute to flame instabilities and increased erosion. Although the total ash content decreases when burning a low sulfur Western fuel, excessive interior erosion of the coal pipe can result due to the higher particle velocities. Flame instabilities can result from increased fuel velocities and a doubling of moisture content. Auxiliary fuel or flame stabilizing lighters could also be required.

While the total amount of required combustion air does not significantly change when switching from a high to low sulfur coal, increased pulverizer drying capacity is required. Additional drying of a high moisture coal can be accomplished by adding air heater surface and by increasing the primary air temperature to the pulverizers. Primary air temperature could increase by as much as 350F (194C) above that required for a high sulfur, low moisture fuel.

Air heater performance is also affected by the increased fouling tendency of Western subbituminous low sulfur coals. Sootblower and water washing protection may be needed to combat heater surface plugging. Air heater adjustments may also be needed to meet the coal drying requirements.

A major limiting factor associated with a coal switch is the capacity of the existing pulverizing equipment. In general, the fuel flow required for the same thermal input to the boiler can not be achieved with existing pulverizers. The coal flow through any pulverizer is affected by the amount of moisture, coal grindability and pulverizer horsepower. In most cases, the existing pulverizer is derated by moisture and decreased grindability.

Solutions for improving pulverizer performance when firing a Western fuel include upgrading the pulverizer internals, increasing the spring tension, or replacing the existing motor. If the remaining plant life is sufficiently long, the installation of larger pulverizers or an increase in the number of mills may be economically justified. Structural and foundation changes would be required. The number, size and routing of coal pipes would also be affected.

When switching coal type, the most significant factors influencing modern boiler operation are the chemical constituents and physical properties of the coal ash. When designing the steam generator, the ash characteristics determine the size, location and spacing of the pressure parts and combustion equipment. Each coal has some tendency to slag or foul various interior boiler surfaces. However, many fuel changes involve replacing bituminous with subbituminous coals in units designed for the former. As a result, any fuel switching is generally preceded by an engineering study and various field tests.

Fuel switching example The following fuel switching example illustrates the types of boiler changes that may be required when firing higher slagging and fouling coals.

Consider a utility with a 365 MW pulverized coal-fired boiler. A cross-sectional drawing of the original unit is shown in Fig. 16.

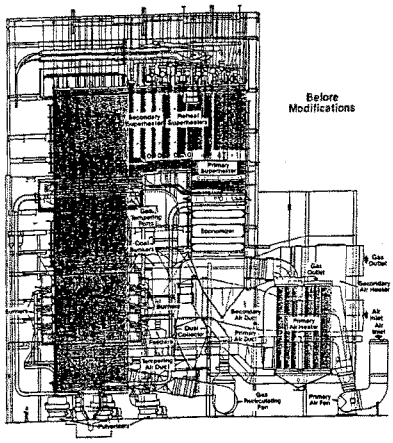

Fig. 16 Original arrangement of coal-fired plant before fuel switching.

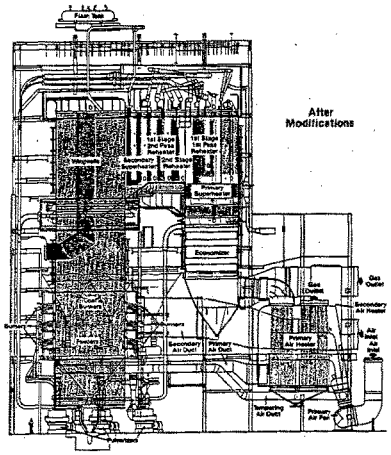

Fig. 17 Upgraded unit design for low sulfur subbituminous Western coal.

Trial burns of a subbituminous coal indicated that a number of functional and operational problems would be encountered. The FEGT increased dramatically, excessive slagging occurred in the furnace and pendant superheater sections, and ash plugging of the horizontal convective sections occurred. As the furnace slagging became severe and furnace absorption decreased, superheater temperatures exceeded design values. This absorption shift added to the slagging of the pendant superheaters. As the tube sections experienced severe plugging, gas velocities increased to the point that tube surface erosion caused extensive leaks. The slagging and fouling increased the draft loss and the maximum fan capacity was reached. Sootblowing was only marginally effective in clearing the fouled sections. The unit was forced to operate at reduced loads and this in turn contributed to reduced sootblower effectiveness.

Extensive field tests were conducted to determine the existing gas temperatures at the furnace exit. The gas temperatures were found to be higher at the bottom of the secondary superheater than at the top. It was determined that the flue gases were vertically stratified through the superheater, with the majority of fouling taking place at the bottom of the superheater. As the lower portion of the bank became plugged, gas flow was biased higher, progressively fouling more of the bank.

A number of modifications were made to restore capacity and to permit burning a Western subbituminous coal. The modifications, illustrated in Fig. 17, included:

1. Furnace wingwalls were installed as primary superheater surfaces to reduce the FEGT from 2500 to 2180F (1371 to 1193C). This eliminated serious fouling of the secondary superheater.
2. A rearwall arch was added to improve vertical distribution of gas flow across the furnace exit and to force the flue gases across the new wingwalls.
3. The horizontal primary superheater surface was reduced to offset the addition of the wingwalls.
4. The gas recirculation system was eliminated. As a result, the first stage reheater was modified to achieve reheat temperature due to reduced gas flows and the lower flue gas temperatures resulting from the addition of the wingwalls.

The modifications shown in Fig. 17 were successful in eliminating the slagging and fouling associated with burning a Western fuel. Lost boiler capacity was restored and the desired SO_2 emission reductions were achieved.

Other system considerations While switching to an alternate low sulfur coal demands careful examination of the steam generator, there are a number of other systems that can also be adversely affected. Flues, ducts and fans, the electrostatic precipitator, and the ash handling system deserve close attention.

Due to increased air and gas flow and increased pressure drops, several options may be considered for flues, ducts and fans. Flues and ducts may be rearranged, the fan wheel may be upgraded, and the fan motor may be upgraded with a higher capacity unit.

Changes in ash loading and resistivity and higher gas volumes may reduce electrostatic precipitator (ESP) performance. In particular, lower SO_2 emissions may adversely affect flyash resistivity. ESP upgrades include adding collecting surface area, adjusting operation, and adding flue gas conditioning. In extreme cases, a larger ESP or baghouse may be retrofitted.

There may also be an increase in furnace ash loading, and additional removal/storage areas may be required. Because fuel ash characteristics, such as agglomerating tendencies, vary, ash handling system upgrades may be necessary.

Switching to oil or natural gas The discussion of fuel switching to reduce SO_2 emissions from utility power plants has been limited to coal, because coal-fired capacity represents the majority of these plants. However, there are circumstances where switching from coal to oil or natural gas may be economically justified. Analyses similar to those for coal type switching must be performed. Additional considerations of fuel price and availability, stability of supplies, handling and storage system changes, and transportation costs affect the decision to switch to oil and/or natural gas. Firing either of these fuels may also require significant changes to pressure part arrangements and tube materials to ensure that overall unit performance is maintained.

Strategies for dealing with the older plant

In developing a long term strategy for a power plant, its current condition must first be evaluated. Performance test and availability data, maintenance records, and operation and condition assessment reports (see Chapter 45) should be compiled into a summary document. This document can outline design and operational deficiencies and can indicate components that need repair or replacement. A schedule for this repair work and a detailed cost breakdown should be included. Recommendations for component upgrades may also be included in this summary.

A second document included in the long term strategy is a load forecast for the plant. The projected load cycling and the anticipated capacity factor are of particular interest. These items are major determinants of plant revenue and operating costs.

The compliance of an older plant with environmental regulations and the associated costs of this compliance are significant factors in this strategy. For plants with high heat rates and emissions levels, retiring the unit is often considered.

When all of the cost and operating data have been summarized, cash flow and return on investment analyses are performed. The required cash flow can be compared to available capital resources, and alternate uses for this capital can be compared to extending unit life.

At this point, a flexible strategy is appropriate. Alternate uses for the older plant can be considered. For example, some plants are candidates for conversion to fluidized-bed units. Any strategy must minimize capital risk and provide contingencies for unexpected load growth. The older plants in a system represent a vital resource that can not be easily replaced; therefore, a careful strategy for life management of these plants is mandatory.

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BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Ohio Power Company for Authority to Amend and Increase Certain of Its Rates and Charges for Electric Service	)))))	Case No. 94-996-EL-AIR

MYRON D. ADAMS
ON BEHALF OF
OHIO POWER COMPANY

LEGEND

___ Management Policies, Practices, and Organization

___ Operating Income

___ Rate Base

___ Allocations

___ Rate of Return

___ Rates and Tariffs

_X_ Other

Filed July 20, 1994

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M. D. ADAMS
PUCO CASE NO. 94-996-EL-AIR

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11 percent.

GENERATING UNIT LIFETIMES FOR DEPRECIATION

Q. Please discuss, in general, factors relating to the operating lifetime of steam-electric generating units.

A. Most of the major components and subsystems in a steam-electric power plant are subject to considerable thermal and mechanical stress during operation, which results in various forms of deterioration over the unit's operating lifetime. This results in requirements for scheduled maintenance outages and repair of failed components during forced outages on an ongoing basis. As time goes on, the cumulative effects of operation affect more components, and affect those components more severely. Finally, the major subsystems and components reach a stage at which "normal" maintenance and repair become inadequate to support satisfactory continued operation. At that point, the unit may be considered for retirement as an alternative to incurring much higher maintenance expenses, which would probably include significant rebuilding or replacement of some major components.

Q. What factors may affect a utility's decision as to whether to retire a steam-electric generating unit?

A. In most instances, the decision depends on the unit's reliability and relative economics, namely, the capital, operating and maintenance costs to keep the unit in operation, versus the costs of replacing the unit with alternative sources of supply. The need to comply with environmental regulations, as these change over time, is also a major

consideration.

Q. What are some of the factors affecting the unit's relativ operating cost?

A. The major factors are the unit's operability, in terms o availability, equivalent forced outage rates, etc.; it efficiency, in terms of heat rate; its cost of fuel, in term of cost per MBTU; its ongoing maintenance costs; and it "fixed" operating costs (e.g., payroll costs). These are th components of the plant's aggregate operating (production cost, which is expressed in mills-per-kilowatt-hour of energ produced. Older units will generally tend to have highe operating costs than newer units.

Q. What capital costs must be taken into consideration whe making retirement decisions?

A. Unit retirement decisions must take into account capital cost associated with keeping the unit in service (includin environmental compliance costs, if any), and the anticipate additional service life achieved thereby, versus the capita cost of adding new replacement capacity.

Q. What has been industry experience and standard practice wit regard to assumed operating lifetimes of steam-electri generating units?

A. Past experience has indicated that, with proper maintenanc and operation, coal-fired units can expect to achiev operating lifetimes on the order of 35 - 40 years. Of course, the achievable lifetime is highly unit-specific. Some unit have experienced faster deterioration than others, but, i

general, service lifetimes can be expected to fall in that range.

Q. What factors will influence OPCo's retirement decisions with regard to its steam-electric generating units?

A. OPCo has a number of units which are nearing the end of their "nominal" 35 - 40 year operating lifetime. Factors affecting the decision regarding their continued operation include their current physical condition, as well as those economic factors I mentioned above.

Q. Please discuss recent trends in those economic factors.

A. With regard to production costs (i.e., operability and heat rate), OPCo's older units, from the 150-MW series of generating units on, are of a mature, reliable and efficient design. In the past, a system's oldest generating units were generally less reliable and of less-efficient design than its newest units. For OPCo, the 150-MW (and later) series of subcritical units have maintained good operability at high levels of efficiency, such that improvements in later designs have been less dramatic than in the past. Thus, there would be little to be gained in terms of production cost savings by replacing them with generation from new capacity.

In addition, the production costs of new units include the effects of compliance with stricter environmental standards, which can be substantial. Thus, there is no operating cost advantage to replacing OPCo's older existing coal-fired generating units with generation from new capacity.

Q. Please discuss the capital cost of new base-load, coal-fired

1 capacity as it relates to the potential retirement of OPCo
2 older generating units.
3 A. The installed cost of new base-load, coal-fired generati
4 capacity has increased dramatically over the last two decade
5 Now generating units require longer permitting and lead time
6 substantially more environmental control systems and long
7 construction periods (as a result of which interest accru
8 for a longer period), etc. Inflation has also been a facto
9 All of these factors have led to much higher installed cos
10 for new capacity. Today there are much larger differentia
11 between the installed cost of new capacity and older capacit
12 For example, new coal-fired units are projected to cost
13 least four times as much as OPCo's current embedded cost
14 capacity.
15 Q. What have been the consequences of these changing co
16 relationships with regard to generating unit lifetimes a
17 retirements?
18 A. Utilities today, including OPCo, have much greater incentiv
19 than in the past to keep existing generating units operati
20 as long as possible beyond their nominal lifetimes, even
21 considerable expense, so as to put off the need for incurri
22 the even greater expense of adding costly new replacem
23 capacity.
24 Q. Do these changing circumstances mean that existing units ha
25 longer inherent physical lifetimes than previously assumed?
26 A. No, they do not. The existing units are subject to the sa
27 deteriorative processes as in the past. However, it now mak

sense to make larger additional capital expenditures than in the past to correct cumulative deterioration and keep existing units operating. Without those expenditures, the units would continue to deteriorate, and could not operate beyond the traditional lifetimes.

Q. Please discuss the concept behind OPCo's life optimization program.

A. I have discussed the advantages of retaining existing units in operation. These advantages have been apparent for some time. In addition, "life extension" has become an important attractive supply-side consideration for many utilities in developing integrated resource plans, and has been encouraged by many state regulatory commissions. Accordingly, programs have been developed by AEP to attempt to achieve longer operating lifetimes, and to do so as economically as possible. (I use the word "attempt" since very few steam generating units in the U.S. have had operating experience beyond 40 years of service.) AEP's life optimization programs are implemented over a number of years, commencing several years prior to the end of a unit's "traditional" lifetime. The work is planned over this long period, so as to minimize its total cost, and the outage time required.

Q. Please discuss the generating unit lifetime assumptions used in this filing for OPCo's steam-electric generating units.

A. The lifetime assumptions for OPCo's generating units are indicated on Exhibit No. ___(MDA-14). The lifetimes indicated for OPCo's older generating units (Kammer Units 1-3; Sporn

Units 2, 4, and 5; Cardinal 1; and Muskingum River 1-5) reflect the implementation of lifetime optimization programs. The formulation of these programs involved careful assessments of each unit's physical condition (after several decades of operation), which led to the identification of specific capital and maintenance items that must be undertaken if the unit is to operate beyond 40 years.

The Company has had in place for a number of years a 50-year service life program for a number of units. This program includes the major capital replacements required to operate each unit for a total period of 50 years. Those capital replacements are included in the Company's Other Production Capital Forecast. As a result of this program, it is anticipated that the units will achieve 50 years of service. For several of those units, it is believed that, with additional measures, lifetimes of 60 years might be achieved, and a 60-year life optimization program has commenced. However, in all cases, the achievement of lifetimes in excess of 40 years is directly dependent on carrying out the life optimization program; such lifetimes simply could not be achieved without the unit modernization program, and without incurring the program's considerable capital cost.

For the depreciation study sponsored by Witness Henderson, it is assumed that the 50-year life optimization programs developed for Kammer 1-3, Muskingum River 1-4, and Sporn 5, and the 60-year life optimization programs developed for Cardinal 1, Sporn 2 & 4, and Muskingum River 5, will be

1 successfully implemented. Both the costs, including certain
2 foreseeable future costs, of the programs and their benefits,
3 i.e., achievement of 50- or 60-year service lives, are
4 reflected in that study.
5 Q. Do the projected retirement dates for OPCo's steam production
6 plants used in that study represent actual plans for
7 retirement of those units?
8 A. No; those dates do not represent specific decisions for the
9 retirement of any particular unit. Such decisions necessarily
10 involve consideration of many factors, including physical
11 condition of the unit, O&M expenses, overall cost of
12 operation, staffing, compliance with environmental regulations
13 as these are changed from time to time, the cost of
14 replacement capacity, as well as accounting and financial
15 factors. Given all of these factors and uncertainties,
16 however, those retirement dates are OPCo's best estimates at
17 this time.
18 Q. Please discuss the lifetime assumptions for Amos 3, Gavin 1 &
19 2, and Mitchell 1 & 2.
20 A. These are newer units than those described previously.
21 Mitchell 1 & 2 are among the earliest 800-MW supercritical
22 units, and Amos 3 and Gavin 1 and 2 are among the first 1,300-
23 MW supercritical units, in the world. To date, no units of
24 these designs have been in service for more than 25 years.
25 Thus, it is too soon to tell what these units' condition will
26 be after 30 or more years of service, and, thus, what type of
27 life optimization program -- and at what cost -- they might

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require to operate beyond 40 years. For these reasons, 4
years of service, but with no recognition of life optimizatio
expense, is the most reasonable current estimate for thei
lifetime for depreciation purposes.

Q. Will life optimization be considered for the 800- and 1,300-M
units in the future?

A. That is quite likely, but not for several more years.

Q. Why shouldn't longer, "life-optimized" lifetimes for thos
units be assumed for depreciation purposes at this time?

A. The fact that those units will be considered for lif
optimization does not change their present condition -- the
will continue to physically depreciate just the same. It i
only future life optimization work -- at significant cost -
that would enable the units to operate beyond 40 years. Th
potential future benefit of longer life is only made possibl
by the incurrence of those future costs. Those who will pa
the cost -- in this case, future ratepayers -- should be th
ones to enjoy the benefits arising from incurring those costs

A. Are there other factors that should also be considered i
setting depreciation lifetimes?

A. Yes, there is a growing and significant uncertainty associate
with the continued operation of these units over the lon
term.

Q. Please elaborate.

A. Even with only a 40-year assumed service life, OPCo
Mitchell, Amos, and Gavin units are projected to contin
operation for about 20 more years. Given the environment

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constraints on power plant emissions, past and future (especially "global climate change" concerns in regard to power plant CO_2 emissions, as well as the potential for further SO_2 limitations), which could require OPCo's units to be further modified, the future operation of coal-fired generating units is becoming less certain, and the assumption of even 40-year lives, without major modifications to such plants, may prove to have been overly optimistic.

Q. Does this conclude your direct testimony?

A. Yes, it does.

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Spiral Furnace & Burner Retrofit at Ohio Edison Company W. H. Sammis Plant Unit 5

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ABSTRACT

This paper discusses the recently completed rebuild of the entire steam generator furnace structure with a spiral tube design at the W. H. Sammis electric generating station of The Ohio Edison Company. This unit is a pulverized bituminous coal-fired once-through boiler with a net demonstrated capacity of 300 MW at 2400 psig/1000 F (165.4 bars/538 C) throttle conditions with single reheat to 1000 F (538 C). The original unit, which was placed in service in 1967, was a three-pass furnace with vertical tubing. The replacement furnace was designed, manufactured, and erected with inclined furnace tubing and two fluid passes. The inclined and continuous furnace tubes spiral up the furnace from the ash hopper to the furnace exit. The burners and combustion system, which are suspended from the furnace, were also upgraded during the rebuild. The tight schedule and short duration outage required close control by project management during all phases to achieve on-time completion of the furnace retrofit.

INTRODUCTION

This paper outlines the experiences of Babcock & Wilcox and The Ohio Edison Company in their utility retrofit project. In addition, the paper describes the retrofit design and application. This retrofit is the second application of a spiral furnace in the United States and the first application for pulverized coal firing. (The first application was for Jacksonville Electric Authority, Northside Station Unit 1) (1). The design concept for the spiral furnace circuitry was developed in Europe during the 1960's and has since become a standard for European design. This technology is applied through license agreement with Kraftwerk Union. All engineering and materials for this project are of domestic supply. The furnace replacement also included replacement of the high heat input concentration burners with Dual Register Burners for even heat distribution (2). This coal fired burner was developed in the 1970's and has become a standard product for utility size boilers firing pulverized coal.

The Babcock & Wilcox Company (USA) has sold 165 once-through steam generators since the early 1950's when the utility size once-through design was conceived. These steam generators have been in operation throughout the USA and Europe with the majority of applications in the domestic market. The once-through steam generators can be divided into two classifications: those operating in the two-phase fluid flow region (subcritical pressure), and those operating in the single-phase fluid flow region above the critical pressure (supercritical) of 3206 psia (221 bar). Of these, approximately 40 percent have been designed for operation in conjunction with Rankine cycles at a steam delivery pressure of 2400 psig (165.4 bars) (3).

DESCRIPTION OF ORIGINAL UNIT

The W. H. Sammis Station, located on the Ohio River northwest of Pittsburgh, Pennsylvania, is Ohio Edison's largest electric generating facility. The station has a total of seven units capable of generating 2220 MW. Unit 5 at the W. H. Sammis Station has a once-through steam generator designed for firing pulverized coal. It delivers steam at a rate of 2,355,000 lb/hr (1,068,000 kg/hr) with conditions of 2625 psig (181 bars) and 1005 F (540 C) at the superheater outlet. There is one stage of reheat superheat at a rate of 1,902,000 lb/hr (863,000 kg/hr) with conditions of 547 psig (37.7 bar) and 1005 F (540 C) at the outlet (Figure 1). The primary fuel for the unit is a bituminous coal from the

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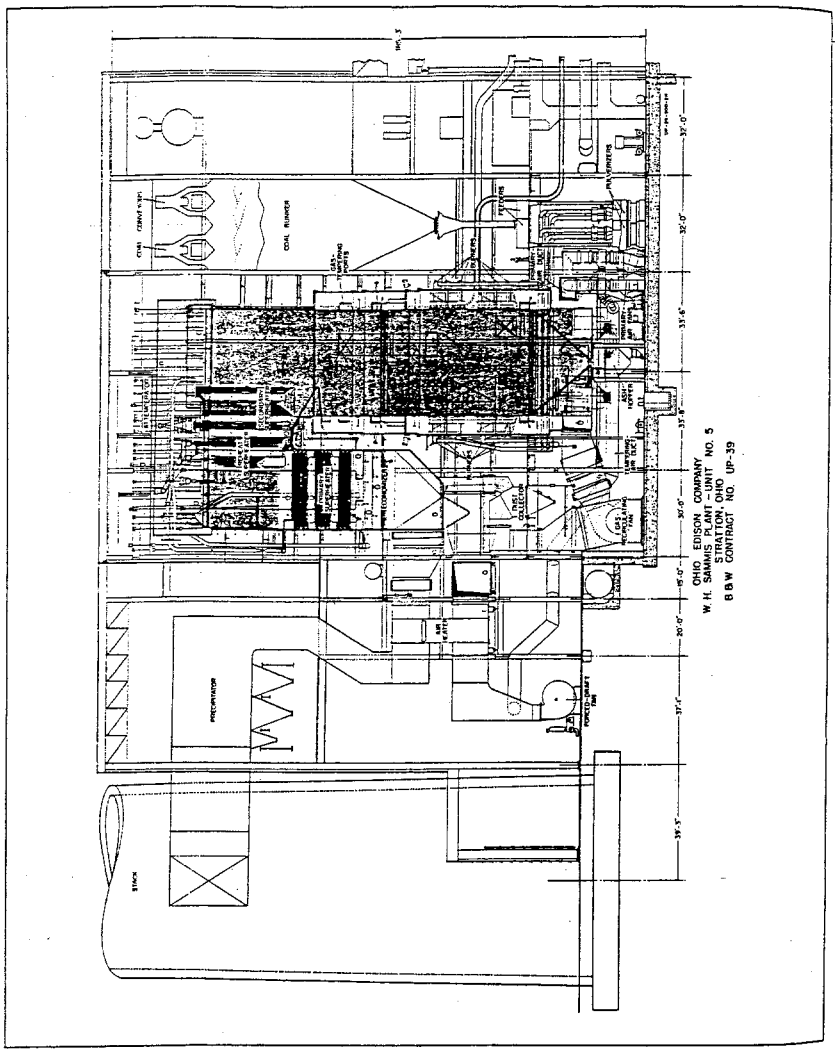

Figure 1 Original unit as built in 1967

eastern U.S. with the following approximate analysis:

Higher Heating Value Btu/lb	11,500-12,300 (6390-6830 kcal/kg)
Moisture	4-10%
Fixed Carbon	40-60%
Ash	7-14%
Volatile Matter	30-40%

The unit uses No. 2 fuel oil for light-off and flame stabilization during start-up. Originally, the unit used flue gas recirculation and flue gas tempering from gas recirculation fans for control of reheat steam temperature at part load; depression of furnace exit gas temperature at high load; and control of furnace absorption at low loads. The gas recirculation system had been removed from service prior to the furnace rebuild due to problems with ash erosion and fan vibration. The unit now uses increased excess air as a replacement for gas recirculation.

The furnace is 39 ft. (11.89 m) wide by 36 ft. (10.97 m) deep and 132 ft. (40.23 m) high from the lower headers to the furnace roof tubes. The furnace was pressure-fired by eight three-nozzle cell burners, with each cell being fed from one EL type pulverizer. The furnace walls were constructed of 7/8 in. (22.2 mm) OD ribbed tubing membraned on 1-1/2 in. (38.1 mm) centers. The original furnace had three vertical fluid passes in series (Figure 2). There was a full mix (i.e., fluid leaving all panels in all four walls was mixed together) between the first and second fluid pass. Between the second and third fluid passes, wall mixes (i.e., fluid leaving all panels in one wall mixed together) were located on all four walls. Fluid leaving the furnace circuits then flowed through the roof tubes, the superheater enclosure and the convection pass enclosure. Primary and secondary superheaters formed the final heat transfer surface before steam exited the steam generator. An economizer, arranged at the back of the steam generator, preheated the feedwater going to the furnace.

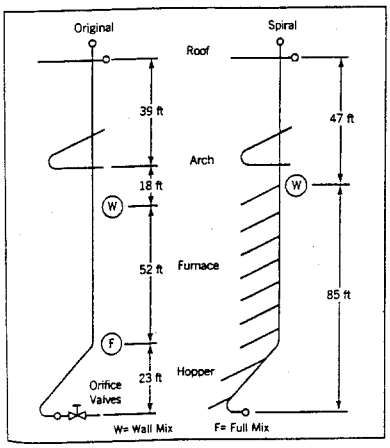

Figure 2 Boiler circuitry

The unit has operated as a base load generator at full throttle pressure since commercial operation commenced in 1967. This is expected to continue for the present, with some low load operation periods. Over the years the steam generator had experienced sensitivity to operating upsets and difficult start-ups which had resulted in thermal upsets and the eventual deterioration of the furnace pressure parts. Low steam generator availability led Ohio Edison to seek a long-term fix for the problem.

PROBLEM DESCRIPTION

Before discussing the retrofit project, it will be helpful to examine the steam generator operating condition prior to the rebuild. The Unit 5 steam generator, because of its design and operating experiences, was in need of extensive repair just prior to the rebuild. Over the operating history of the unit, it had not been possible to start up without exceeding metal temperature limits.

Start-up and low load operational upsets on this subcritical steam generator, with its vertical tubing arrangement and high heat input concentration due to the cell burners, led to frequent temperature excursions of the furnace. At these low load conditions, the furnace was subjected to lower mass flow in the tubes and imbalanced heat input due to less than the full complement of burners in service. The subcritical once-through unit is much more sensitive to operational upsets than the supercritical design because heat absorption creates a larger change in specific volume of the boiler fluid in subcritical units. In forced circulation boilers, the tube receiving the most heat input receives less flow which leads to increased fluid and tube metal temperatures. Orifice valves are used to distribute fluid to the hottest tubes, but any setting of these valves is only a compromise between full load with all burners in service and part load with different burners removed from service. The temperature excursions' cumulative effect led to deterioration of the furnace pressure parts.

STUDIES CONDUCTED

Initially each problem area was examined jointly by Ohio Edison and Babcock and Wilcox. Engineering studies and cost estimates were developed for proposed alterations to improve the furnace conditions. These included:

1. Redesign and replacement of the upper furnace wall mix area, replacing the wall mixes with a full furnace mix.
2. Replacement and straightening of the upper furnace wall tube panels.
3. Replacement of the burners with redesigned and respaced burners to lower the peak heat input concentrations and to improve combustion air control.
4. Replacement of the burner lighters with high capacity variable input lighters to allow warming of the unit and stabilizing of the coal burners at low coal flows.
5. Operational changes to improve start-ups and low load operations, combined with changes to the control system to improve controllability.

As a result of the engineering studies and Ohio Edison's Availability Improvement Task Force, the following mechanical and operational changes were made to minimize upsets and temperature excursions:

1. Minimum feedwater flow was increased to increase mass flow through the unit.
2. High capacity variable input burner oil lighters were installed.
3. Additional personnel were assigned to the start-up to improve monitoring of boiler temperatures.
4. The unit was started up using four lower burners to balance furnace heat input.
5. Computer monitoring and alarm of temperature excursions were upgraded.
6. Boiler load turndown was limited to 60 percent to minimize low load operation.

Implementing these changes produced minimal improvements.

Ohio Edison also followed closely the alterations which had been made at other similar steam generators (4). These alterations to fluid flow circuits had produced moderate results. They did not pose an overall solution, except for the spiral furnace replacement at Jacksonville Electric Authority. The experience there indicated that the spiral furnace retrofit would eliminate most of the existing problems.

ADVANTAGES OF THE SPIRAL WOUND FURNACE ENCLOSURE

Application of the spiral furnace technology has provided several advantages to solve problems of the Unit 5 steam generator.

1. Uniform heat absorption by all furnace tubes.

   The 168 furnace tubes spiraling up the furnace are essentially of the same length; they have no significant geometrical differences and pass through all areas of the furnace, hopper, burner zone, upper furnace, corners, etc. As a result, there are practically no differences in heat absorption by the furnace tubes and distribution of the cooling flow and tube metal temperatures are uniform.

2. Insensitivity to changes in the heat absorption pattern in the furnace.

   There are natural differences in heat absorption, for instance, between the corner and center areas of the furnace. In addition, changing cleanliness of the furnace surface can shift heat absorption during operation. Finally, the burner pattern in use can change, especially at part load. All of these factors cause local heat absorption variations.

   For the Ohio Edison furnace, the net effect of the increase in flow per tube and the increase in heating surface per linear foot of tube represents approximately a 90 percent reduction in the change in enthalpy per linear foot of tube. Consequently, the effect of local high heat upsets is reduced by about 90 percent.

3. Elimination of the orifice valves for controlling flow distribution to the furnace circuits.

   The uniformity of geometry and heat absorption of the spiral furnace tubes eliminates the need for orifice valves and thus a potential cause of metal temperature problems.

4. Use of larger, more rugged furnace tubes.

   The spiral circuitry offers freedom in the choice of the furnace tube size. It permits the use of larger furnace tubes which are less sensitive to internal roughness and resistance changes resulting from internal deposition. In the case of Ohio Edison, the tube size was increased from 7/8 in. (22.2 mm) OD to 1-1/2 in. (38.1 mm) OD.

EVALUATION

Improvement projects implemented by Ohio Edison between 1979 and 1981 had increased overall unit availability and steam generator availability from the low levels experienced during the 1970's. Unit 5 equivalent availability between 1980 and 1982 averaged 68 percent. Steam generator equivalent availability during this same period averaged 82 percent.

The condition of the steam generator and the long-term inability to control temperature excursions dictated major upgrades to maintain and improve availability. Also, due to the period of low load growth experienced throughout the utility industry, improvements to the operating flexibility were desired. The installation of new electrostatic precipitators for Unit 5 required a 15-week tie-in outage scheduled to begin April 30, 1984. This extended outage was seen as an opportunity to accomplish the boiler upgrades required with the minimum unit downtime. A major engineering review was initiated by Ohio Edison in 1982 to evaluate alternate studies for upgrade of the boiler and determine the scope of work to be accomplished during the upcoming outage.

An evaluation of those studies showed that:

1. Implementing the recommendations of a single study would not solve or diminish problems in other areas.
2. Implementing the study recommendations independently would not produce a new quality furnace since some of the areas would be left untouched.
3. Implementing all of the study recommendations would be high in cost and outage time.

JUSTIFICATION

Budgetary pricing and schedule information from the previous engineering studies and The Ohio Edison Company replacement power costs were combined to develop total installed cost estimates for the following upgrade program options:

1. Replacement of damaged components with new equipment of similar design and materials of construction. This approach did not address the root causes of the problem areas. Consequently, continued periodic replacement of components was included in the estimates.

2. Replacement of the existing cell burners with redesigned and respaced burners to lower peak heat input concentrations. Replacement of the existing second and third pass wall mix with a full mix. Replacement

of other damaged components with new equipment of similar design and materials of construction.

3. Retrofit of the entire furnace with a spiral-wound furnace.

This initial review indicated that over the remaining life of the unit the capital expenditures for all three options were of the same magnitude. Option 1 required less initial capital investment; however, since Options 2 and 3 addressed the root causes of the problems, an improvement in availability was anticipated. Also, it was anticipated that with Options 2 and 3, minimum load restrictions could be reduced providing increased operating flexibility. To evaluate operating cost improvements versus capital costs, production cost computer modeling was used to determine the accumulated present worth of the annual generation costs for each option for the period 1984 through 2003.

Figure 3 summarizes the results obtained from the computer model for the various cases. Also included in the figure is a model run based on no boiler upgrading work being performed (Case 1). These curves illustrate the differential of the accumulated present worth of annual generation costs referenced to the costs of the component replacement with the same as original design (Case 2). They indicate a long-term economic advantage through installation of the spiral furnace. It should also be noted that the maximum differential cost between the options is less than 1 percent of the total accumulated present worth cost predicted by the model.

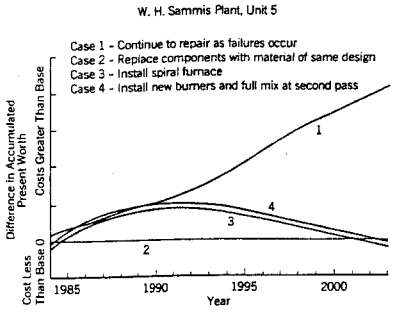

Figure 3 Comparison of present worth of annual costs

From the economic and technical reviews, Ohio Edison determined that installation of the spiral furnace would provide an economic solution to the long-term problems that had plagued the unit. However, Ohio Edison was concerned that physical and operational constraints at the Sammis Station would preclude effective implementation of this technology. Therefore, a detailed engineering study was initiated with Babcock & Wilcox to determine the feasibility, schedule and cost associated with installation of the spiral furnace.

The study included:

1. A replacement spiral furnace.
2. Bypass system modifications required.
3. Increased loads to structural steel.
4. Burner and windbox changes.
5. Modifications to existing controls.
6. Pricing and schedule for materials and erection.

RESULTS OF THE SPIRAL STUDY

The results of the engineering study describe the application of the two-pass furnace and burner retrofit as applied to Unit 5. The spiral enclosure extends from the inlet headers at the bottom of the furnace hopper to the transition-mix just below the furnace arch. The spiral furnace enclosure fits inside the upper vertical tube enclosure with about a 24 in. (610 mm) overlap at the transition (Figure 4).

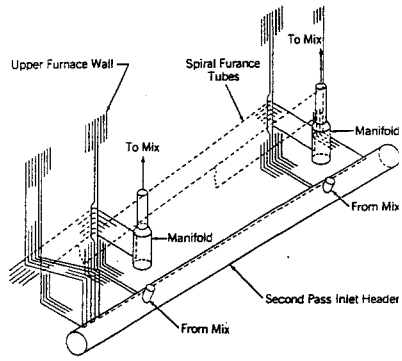

Figure 4 Spiral transition with mix

Supply tubes feed the spiral enclosure front wall and rear wall inlet headers from the downcomer after the economizer. The side wall inlet headers connect through tee connections at the front and rear wall inlet headers to form a continuous ring header. The spiral furnace tubes originate in the lower hopper ring headers and after a short horizontal inlet leg turn into the spiral pattern and wind upward through the hopper and vertical walls at an angle of approximately 11-1/2 degrees from the horizontal (Figure 5). The furnace tubes are (SA-213 T2) multi-lead ribbed tubes membraned on 2-1/8 in. (540 mm) centers. At the termination of the spiral, the tubes are routed in groups through the overlapping vertical tube enclosure panels and terminate in manifolds.

The fluid from the manifolds on each side wall and the adjacent one-half of the front wall flows through riser tubes to a mix bottle at each front corner. From each mix bottle, supply tubes feed the near side wall and one-half of the front wall upper enclosure (second pass) inlet headers. The fluid from the spiral outlet manifolds on the rear wall flows through short connecting tubes directly into the upper enclosure and furnace screen circuits.

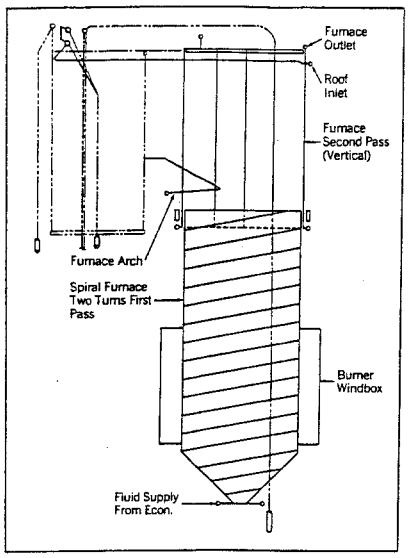

Figure 5 Furnace flow schematic

The spiral furnace enclosure is supported through support straps (four per wall) which carry the load up to the transition area where it is transferred through finger plates to the vertical tubes of the upper enclosure. The furnace hopper support beams carry the hopper load to the side walls where the end connections transfer load to the support straps (Figure 6). The overall load applied to the boiler support structure is nearly the same as the original furnace. The entire furnace enclosure is equipped with vertical and horizontal buckstays suitable for balanced draft operation. The new design pressure (gas side) is ±30 in. w.g. (760 mm H_2O) transient and ±7 in. w.g. (180 mm H_2O) steady state.

The windbox is a wraparound type, compartmented, with three dual register burners in each of eight compartments (Figure 7). Each compartment is fed secondary air from both sides to keep entering velocities to a minimum. Every compartment has two control dampers, one each side, for air flow control. The two main secondary air ducts feed the windbox (left and right) near the rear furnace wall (Figure 8). The windbox has eight (two at each corner) walk-in type recesses with observation doors for viewing the burner flames.

The retrofit spiral furnace and vertical upper tube enclosure are conservatively designed. The 740 F (393 C) alarm on fluid temperature leaving the spiral enclosure is based on the maximum temperature leaving the worst tube under maximum design heat upsets, flow reduction due to additional length and bends at burners, doors, sootblowers, etc., and possible differences in inside diameter due to manufacturing tolerances. Although the replacement furnace and risers up to the furnace roof inlet header are designed to withstand 850 F (454 C) for SA-213 T2 material, which provides a cushion of over 100 F (55 C), this would not be an acceptable operating condition for downstream carbon steel circuits.

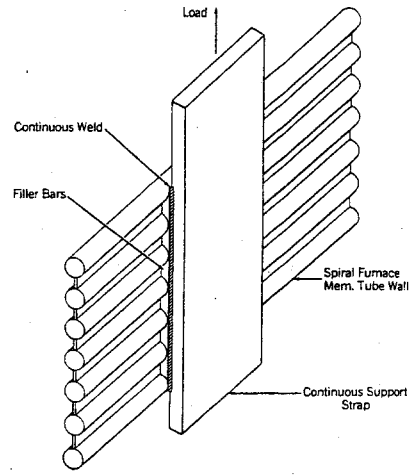

Figure 6 Support strap

PROJECT SCOPE AND SCHEDULE

During the initial feasibility study of the project by Ohio Edison, it had been planned to extend a scheduled 15-week outage for installation of new precipitators (5) an additional 20 weeks for installation of the spiral furnace. This outage was scheduled

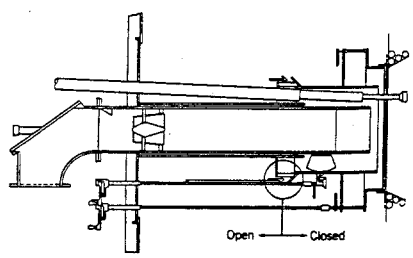

Figure 7 Spiral furnace dual register burner

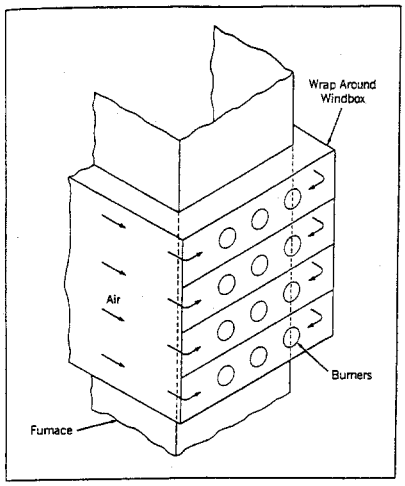

Figure 8 Compartmented windbox

to begin April 30, 1984 with a return to service in December 1984. However, a review of system maintenance schedules and load projections during the engineering study indicated that the outage could not be extended beyond October 15, 1984. Therefore, the outage was rescheduled to begin February 1, 1984. This reduction in lead time created a very tight schedule for the design, fabrication and erection of the furnace.

During the study phase, walkdowns of the existing unit were conducted with personnel from Babcock & Wilcox Construction Company, Ohio Edison and Babcock & Wilcox Engineering to review access requirements and shipping unit dimensions. A feasible work schedule and alternate construction contract arrangements were also discussed. Also during the period, the possibility of extended financing to better fit the Ohio Edison construction financing requirements was developed with Babcock & Wilcox.

Following the review of the engineering study, a specification was prepared by Ohio Edison to fully define the scope of supply, terminal points, materials of construction, quality assurance and performance guarantees. The scope included:

1. Spiral furnace circuitry
2. Upper furnace front and side walls (second pass)
3. Second pass outlet headers
4. Platform steel
5. Sootblower supports
6. Coal piping
7. Oil, air and instrument piping
8. Dual register burners and compartmented windbox
9. Controls for the compartmented windbox secondary air dampers
10. Brickwork, refractory, insulation and lagging

A materials contract was awarded March 11, 1983 with delivery of material to begin in December 1983 and to be completed in April 1984 (Figure 9). Due to the tight schedule dictated by the change in outage dates, the contract included liquidated damages for delay in drawing releases, erection information or material deliveries. Also, the erection portion of the project was specified, competitively bid and awarded to Babcock & Wilcox under separate contract.

Due to the need for interface with other parallel projects, which included computer replacement, combustion control system replacement, balanced draft conversion and precipitator replacement, Ohio Edison retained the services of an Architect/Engineer to coordinate the overall schedule. All other engineering and project management functions were performed by Ohio Edison personnel.

PROJECT MANAGEMENT BY OHIO EDISON

The short overall duration of the project required close coordination and cooperation between various groups at Ohio Edison and Babcock & Wilcox. Engineering and material ordering for long lead time materials were initiated at the receipt of order. Review and approval drawings were submitted in a timely manner, reviewed by Ohio Edison for three weeks, and returned with comments. Comments received after this review were worked into the schedule, where possible, or resolved. The erection drawing and specification release date was moved ahead several weeks to allow adequate time for erection bidding, evaluation and award. Several site inspections were made during the engineering phase to verify dimensions, identify interferences and assure clearances. This was necessary because the original drawings did not reflect all additions and alterations at the plant. This procedure was successful and resulted in a minimum of site problems during erection.

Also of great concern to Ohio Edison was the quality assurance during engineering, manufacturing and erection. Quality assurance audits of procedures were conducted at the onset of the project by Ohio

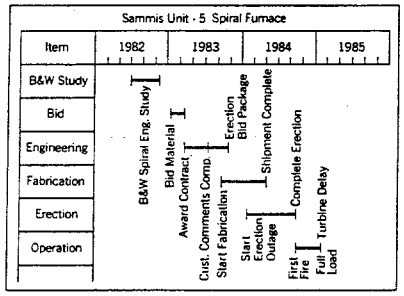

Figure 9 Schedule

Edison personnel. Close surveillance of engineering and manufacturing, in cooperation with Babcock & Wilcox, combined with several visits to the production facilities, resulted in a quality product and minimal delays. All fabricated material was delivered to the Sammis Station site for erection as scheduled. The erection schedule was maintained until completion.

PROBLEMS ENCOUNTERED

Although the overall project was relatively problem-free, there were some difficulties that had to be overcome.

1. The burner openings in the spiral furnace have complex three-dimensional tube bends. Following shipment of some burner panels, it was discovered that cracks had developed in the membrane bar at the bends. The panels were returned to the shops for repair and returned to the site without affecting the construction schedule.
2. Upon arrival at the site, Ohio Edison personnel discovered that sublet windbox casing panels had poor welds. Babcock & Wilcox and Ohio Edison quality assurance personnel made a joint site visit to define the problem. Repair was done at the site by erection personnel.
3. Following removal of the old furnace, it was discovered that many of the original hanger rod clevises, which were to be reused, had been thermally distorted. A rapid check of stocking warehouses located the required clevises and they were delivered to the site three days after the problem was discovered.
4. When aligning the new upper enclosure panels, it was discovered that the original superheater enclosure was 1 to 1-1/2 in. (25.4-38.1 mm) lower than original drawings showed. This caused a mismatch in fitting new buckstays up to old buckstays. It was decided to erect the new furnace as designed and to modify the old buckstays to fit. This caused no schedule delays.
5. Reuse of the buckstays on the upper furnace enclosure had been planned. After demolition it was discovered that several of these buckstays were bent. They were straightened in the field to acceptable tolerances and reused.
6. As erection of the boiler progressed, a combination of additive field and shop tolerances resulted in the furnace being 4 in. (102 mm) shorter than designed. This necessitated relocating furnace support attachments and a minor modification to the ash hopper seal.

The steam generator was initially refired on October 7, 1984. During restart of the turbine, a shroud failure on the low pressure rotor delayed start-up. Following turbine reblading, the steam generator was pressure-ramped on January 5, 1985 and attained full load operation on January 24, 1985.

OPERATING RESULTS

Figure 10 shows Unit 5 after the retrofit. Since initial start-up operation, the steam generator has operated successfully. Only six hours of unavailability is chargeable to the new steam generator equipment. This was caused by two small shop weld leaks found during out-of-service hydrostatic tests.

The second pass riser tubes have exhibited some sensitivity to firing rate. During start-up and load changes, riser tube alarms have been sounded. These temperature alarms have been of short duration during transients and do not exceed the design capability of the materials used in the retrofit. Under steady state operating conditions, the riser tubes operate well within the alarm temperatures and are uniform and stable, within approximately 10 F. Uniform riser tube temperatures are also maintained during transient conditions.

During the initial operating period, difficulty was experienced with the development of proper burner settings and characterization of the secondary air damper controls. These problems led to poor quality combustion on some burners and greater unburned combustible losses than anticipated. A combustion optimization program was implemented; however, at this time, the results of this program have not been fully evaluated.

Overall, good cooperation by both Babcock and Wilcox and The Ohio Edison Company personnel has contributed to a successful retrofit program under difficult schedule and physical constraints. Application of this new technology to the Sammis Plant, Unit 5 has provided significant improvements to the unit operation.

ACKNOWLEDGMENT

The authors wish to express thanks to all those involved in making this project a success and making this paper possible.

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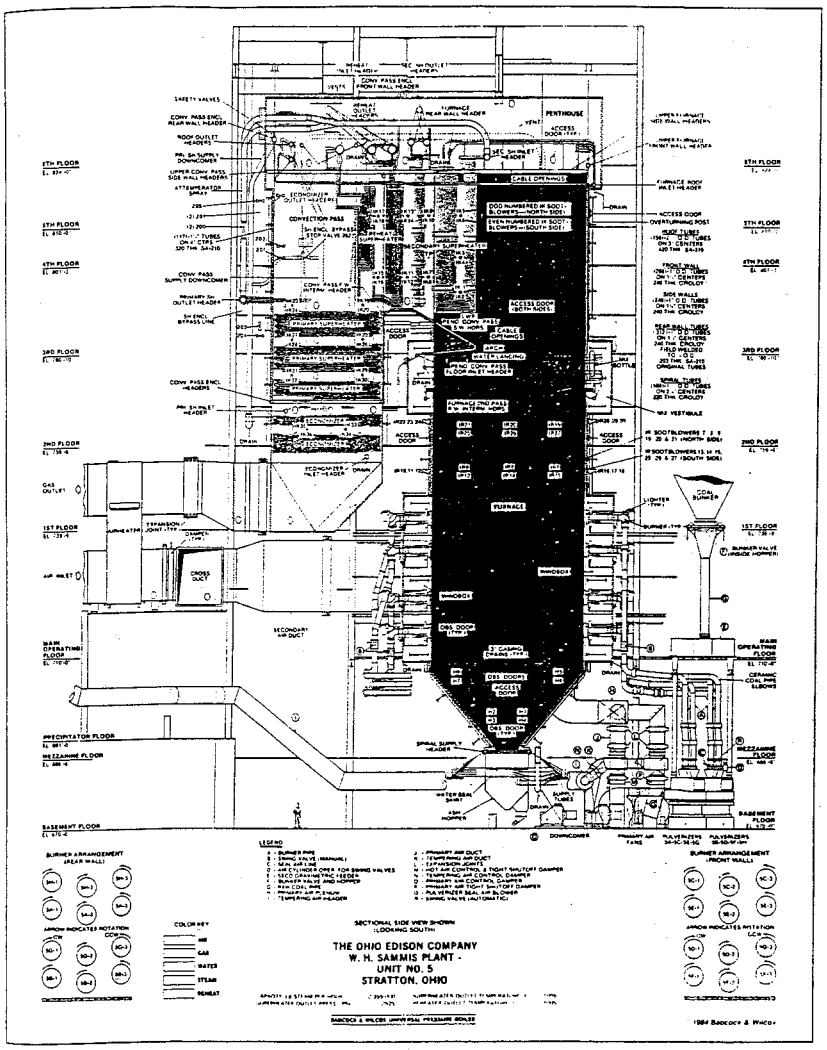

Figure 10 Unit 5 after retrofit

NIAGARA MOHAWK POWER CORPORATION

FOSSIL PLANT LIFE EXTENSION PROGRAM

EVALUATION OF

C.R. HUNTLEY - UNIT 67

January 1987

EBASCO SERVICES INCORPORATED

336136

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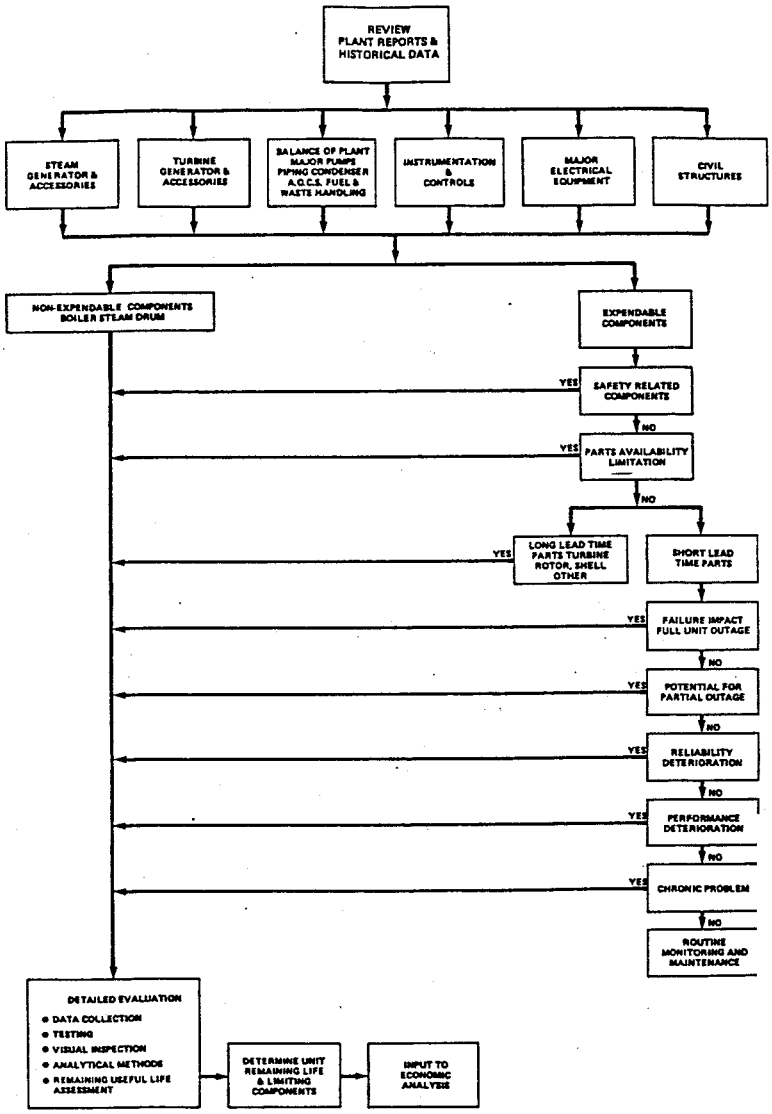

Figure 2-1. Selection Process to Identify Equipment for Evaluation

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NIAGARA MOHAWK POWER CORPROATION

FOSSIL PLANT LIFE EXTENSION
PROJECT REPORT
FOR
C.R.HUNTLEY UNIT 64

LEPR-H64-0

JULY 1989

335898

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3.0 CONCEPTUAL ENGINEERING RESULTS AND ANALYSIS

3.1 Background

Assuming a nominal design life of 45 years most of NMPC's fossil fired units will be retired near the end of this century.

With an average age of 35 years for all NMPC's fossil fired units, Life Extension requirements of this aging source of historically reliable and economic electric generation must be evaluated.

If evaluation of justifies extending the life of a unit to 61 years, implementation of substantial equipment replacements is expected to be required.

Accordingly, because the economic impact of unit life extension is substantial, other alternatives such as new generation are a valid consideration.

This Project Report provides the results of life extension evaluation of C. R. Huntley Unit 64. It provides recommendations for modifications and replacements to reach the life extension goal, provides cost estimates for recommendations, identifies an implementation schedule and presents the results of benefit-to-cost analyses.

335908

3.2 TURBINE GENERATOR AND ACCESSORIES

General

This coal fired unit is essentially base loaded with load following during light load conditions. The unit runs at 3600 RPM using steam at 1265 psig/950 F.

Huntley Unit 64's turbine is a Westinghouse non-reheat type steam turbine installed in 1948. This unit consists of a two cylinder, tandem-compound, condensing turbine. The high pressure turbine is of the combination impulse and reaction type. The exhaust opening is at the top of the cylinder and the steam passes into the low pressure turbine through a single crossover pipe. The low pressure turbine is a straight reaction, double flow machine with steam entering at the center of the blade path and flowing toward an exhaust opening at each end.

The last internal inspection of this turbine-generator was by Westinghouse in 1984. The HP, LP, and generator rotors each received a complete borosonic inspection. These rotors were found to be in satisfactory condition for continued operation. The 1984 examination of the HP shell revealed considerable cracking which could not be repaired during the outage. Stress relieved repair of the shell is planned for the next internal outage. The throttle valves were inspected during this outage and found acceptable for continued service. In September 1986 the LP turbine was damaged when water from the deaerator entered the turbine. The LP turbine was sent to Brown Boveri for refurbishment. Four rows of Blades were replaced, new seal strips installed and required repairs were completed to return it to operation.

After completion of the 1984 outage the bearings, diaphragms and buckets items were considered satisfactory for continued operation. But, during the 1986 water induction incident the LP turbine bearings, buckets and diaphragms were damaged. These components were then repaired or replaced and the LP turbine was returned to service in 1987.

Huntley Unit 64's generator was manufactured by Westinghouse and installed in 1948. Numerous units of this general design are still in service. The original rating of 80 megawatts at 0.8 power factor (100 MVA) was based on hydrogen cooling at 0.5 PSI. The Generator rating was increased to 125 MVA when hydrogen pressures were raised to 15 PSI. Unit 64 is rated

today at 85 MW based on boiler and turbine limits. Any loading other than cycling on and off has little effect on the life of the electrical equipment.

Each electrical area of the generator was evaluated during the 1984 internal or 1989 external outage. The stator consists of an iron core, 13,800 volt stationary main power winding and resistance temperature detectors. The electrical portion of the rotor consists of the collector rings, collector to winding leads and pole windings. The generator field exciter and voltage regulator are located remote from the generator but are considered an integral part of the machine. Since the electrical portion of the lubrication system oil pressure switches and starting circuits are vital to turbine/generator shutdown they have been included with the generator.

Unit 64 generator stator was rewound with modern epoxy insulated copper in 1978. The windings had loosened by the 1984 internal outage and the stator was rewedged using modern ripple wedge technology at that time. Completion of this work has extended the reliable life until at least 2009.

The generator rotor has operated without alteration or major repair from the date of installation. Pole balance tests indicate that the field winding has deteriorated in service. This and retaining ring inspections are expected to require a field rewind in 1993.

The original Westinghouse rotating exciter and voltage regulator were replaced with modern G.E. solid state equipment in 1986. Since this equipment is only three years old and is operating satisfactorily, no further action is required.

For all units of this general design, special "deenergized" starters and redundant lubricating oil switches to start emergency pumps are now standard. This design complies with General Electric Technical Information Letter 775, "Emergency Bearing Oil System Pump Starter Circuits".

Life extension evaluation of the turbine-generator set focuses on the condition of critical components. These are components which are affected by long-term material degradation mechanisms such as creep\low cycle fatigue, erosion\corrosion damage and materials aging. These components are not routinely replaced. The turbine-

generator components that were evaluated include:

- HP shell
- HP rotor
- LP rotor
- Turbine Steam Valves
- Oil Filtration system
- Generator rotor
- Generator Field
- Generator Stator
- Generator Voltage Regulator

Costs associated with Life Extension are summarized in Appendix "D".

3.2.1 HP Turbine Shell

Existing Conditions

The HP turbine shell was last inspected during an internal outage in 1984. The casting has extensive cracking around the steam chest and by-pass valve area. These cracks had their sizes and locations mapped. Over 70 separate indications were noted. Crack size varied from ¼" to 40" with many of these indications described as heavy. The majority of these cracks are in the upper nozzle chamber which is integral with the outer cover. Extensive weld repairs and grinding have been done on this machine during previous outages. These repairs have not been entirely successful, since many of the indications were found in areas previously ground out or repaired.

Expected Results

The Turbine will provide reliable service for the life extension period (2009) of this plant.

Alternatives

- Replace the HP turbine shell.
- Perform stress relieved weld repairs on the HP turbine shell.
- Operate the turbine shell in its present condition.

Recommended Approach

Operation of the turbine in the present condition would eventually lead to through wall cracking and turbine failure. The cost of a new shell is approximately ten times greater than repairing the shell. There are now many examples of turbine shells being weld repaired and

335911

FROM-EBASCO 83:9 4482 (TUE)05.31.'88 16:38 NO.31 PAGE 2

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EBASCO PLANT SERVICES INC.
A Subsidiary of EBASCO SERVICES INCORPORATED
Two World Trade Center, New York, N.Y. 10048-0752

EBASCO

May 27, 1988

Mr. Nirmal Choubey
Fossil Generation Department
Niagara Mohawk Power Corp.
300 Erie Boulevard West
Syracuse, NY 13202

RECEIVED
MAY 31 1988
N. CHOUBEY

SUBJECT: FOSSIL PLANT LIFE EXTENSION PROGRAM
C R HUNTLEY UNIT 67
LIFE EXTENSION PROJECT REPORT

Dear Nirmal:

This is to record our understanding of the scope of work for preparation of a life extension "Project Report" for C R Huntley Unit 67. Based on our discussions during the meeting in your offices on May 12, 1988, and further clarifications in telephone conversations with you, the scope of work is outlined below:

- Project Report format and contents will be in accordance with NMPC Project Management Procedures for Type 1 Projects, PMP 1-2.0, to the extent applicable. A proposed format and contents was telecopied to you on 5/23/88. (Attachment 1).

- Recommendations to reach the nominal 45 year life of the Unit will be identified.

- Additional recommendations will be identified to reach the 60 year life, life extension goal.

- Recommendations will be categorized as to priority, as follows:

  - High - Urgent, modification/replacement recommended in near future.

  - Medium High - Important, short term action may be needed, preliminary engineering and planning is recommended.

  - Medium - Action will be required in future, re-evaluation in 5 to 10 years.

- Low - Re-evaluation required in future to re-assess remaining useful life.

- A discussion of alternatives to life extension will be prepared by NMPC. Alternatives for individual equipment recommendations will be limited to the extent included in the existing C R Huntley Unit 67 life extension evaluation report. A discussion of a complete turbine replacement as an alternative to replacement of the outer shell will be included.

- Mr. D Klesch's comments on recommendations for boiler components will be reviewed with Mr. D Klesch, by telephone and decisions on recommendations arrived at. Resolution of Mr. D Klesch's comments to the existing C R Huntley Unit 67 evaluation report are not required.

- All "maintenance" type recommendations will not be included in the Project Report.

- All "re-inspection" type recommendations will be listed in a separate table.

- Major outages, turbine "internal" outages are scheduled 6 years apart. Next internal outage for C R Huntley Unit 67 is 1990.

- Contractor engineering costs will be included in cost estimates.

- An allowance for NMPC engineering costs will be included in cost estimates.

- Cost of existing (old) equipment removal will be included in the cost of new equipment installation.

- Most civil structural recommendations will be classified as maintenance and not included in project report.

- The Benefit/Cost Analysis will be prepared by NMPC. Ebasco will provide cost estimates for the recommended equipment modifications/replacements for NMPC's use. NMPC intends to update the B/C analysis text from the existing C R Huntley Unit 67 evaluation report. A minimum need for Ebasco review is expected.

Mr. Nirmal Choubey
Niagara Mohawk Power Corp.

May 27, 1988
Page 2

- A discussion of the risks associated with proceeding with the project will be prepared by NMPC.
- Benefit/Cost Verification will be performed by NMPC, if required.
- Fifteen copies of the draft report and 25 copies of the final report are required by NMPC.

As discussed with you, we foresee great difficulty in completing the project report by the end of July and within the budget cost of $54,000 estimated in Ebasco letter dated May 6, 1988. We are concerned that the time and budget constraints will result in a project report not satisfactory to NMPC. The proposed schedule as agreed to, showing completion by July 29, 1988 is presented in Attachment 2. We need to change this schedule to show complete cost tables by 6/17 instead of 6/10. We will certainly attempt to meet this schedule but is does not allow for any unforeseen delays. We will make every effort to control costs to stay within the $54,000 budget for completion of the draft report. Revisions to the draft will probably increase costs above $54,000. We will monitor progress and costs closely and advise NMPC when costs approach 80 percent ($43,000) of the budget cost.

We are proceeding with work on this basis, please advise if this is not satisfactory.

Very truly yours,

A. Cesnavicius

AC/dwj
Attach.
cc: B Rossi
H Perkins
R Piteo
File

222017

EPRI

Topics:
Fossil fuel power plants
Power plant availability
Power generation planning
Life extension
Maintenance
Operation

EPRI CS-4207
Project 1862-3
Proceedings
August 1985

Proceedings: Fossil Plant Life Extension Conference and Workshop

Prepared by
Bechtel Power Corp.
San Francisco, California

EP003639

REPORT SUMMARY

SUBJECTS	Plant systems and performance assessment / Boilers and related auxiliaries / Steam turbines and related auxiliaries / Power system planning
TOPICS	Fossil fuel power plants Power plant availability Power generation planning Life extension Maintenance Operation
AUDIENCE	Generation managers and engineers / R&D managers and engineers

Proceedings: Fossil Plant Life Extension Conference and Workshop

By 1990, one-quarter of U.S. fossil-fired power plants will be close to the traditional 30-year retirement age. Because of today's economics, such plants will be called upon to supply reliable service for an additional 20 to 30 years. These proceedings review the technical challenges, engineering approaches, and investments involved in extending plant life.

BACKGROUND Typically, a fossil fuel power plant is designed for a 30-year life. But as new fossil plants become increasingly difficult to finance and planned nuclear units are deferred or canceled, efforts are being made to extend the life of aging fossil plants to 50 or 60 years of reliable service. To explore this issue, EPRI and EEI sponsored a three-day workshop in Washington, D.C., in June 1984.

OBJECTIVE To bring together utility engineers and managers, manufacturers of power plant components, and architect/engineers to exchange ideas and experiences on maintaining and operating aging fossil-fired plants.

APPROACH More than 200 representatives of U.S. and foreign utilities, architect/engineering firms, suppliers, government agencies, and research organizations associated with the utility industry were invited to present papers on the many issues involved in extending plant life. The workshop included sessions on the following topics: utility life extension programs; generation planning and the regulatory environment; technical approaches to estimating remaining life; and boiler, turbine generator, and balance-of-plant life extension projects. In addition, utility working groups discussed some issues from utility perspectives.

KEY POINTS

- Turbine and boiler manufacturers now offer programs to upgrade their equipment in fossil-fired plants. Such programs include modernization, adaptation for cycling duty, and major plant life extension. Balance-of-plant equipment can be evaluated for upgrading by the utility or an architect/engineer.
- Although individual engineering and economic estimates of the cost of upgrading an aging plant varied in their level of detail, utilities reported that

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most estimates were under $250/kW—compared to $1500/kW for building a new plant.

• Extending a plant's life beyond its design limits requires a careful assessment of strategies to overcome the natural results of aging: creep, fatigue, corrosion, and erosion. A life extension program should begin with an evaluation of the remaining life of those components that strongly affect plant availability and that require long lead times to replace. To ensure reliable service from older plants, the program should include on-line diagnostic monitoring to track the aging process; operational strategies for the remainder of the plant's projected life; an economically feasible schedule for the inspection, repair, or replacement of components; and design modifications for heat rate and cycling.

• Utilities must consider the effect of life extension on the environment (for example, plant requirements for air, water, and solid-waste disposal). They must also assess the effects of anticipated regulations on plant life extension.

EPRI PERSPECTIVE

This workshop contributed valuable information for EPRI's R&D planning. It also identified the need for a comprehensive set of guidelines that integrates the many factors involved in plant life extension. EPRI project RP2596 is now developing generic life extension guidelines based on evaluation of plants at Boston Edison, Niagara Mohawk, and Pacific Gas & Electric companies. These utility guidelines will recognize differences in plant size, age, and geographical location and will address the issues of layup, derating, and decommissioning, as well as life extension. A second fossil plant life extension conference and workshop scheduled for 1986 will feature these guidelines.

PROJECT

RP1862-3
EPRI Project Manager: J. R. Scheibel
Coal Combustion Systems Division
Contractor: Bechtel Power Corp.

For further information on EPRI research programs, call EPRI Technical Information Specialists (415) 855-2411.

FOSSIL PLANT EXTENSION OF LIFE STUDIES: THE DUKE APPROACH AND THE RESULTS

Prepared by

R. M. Sandifer

Duke Power Company
Charlotte, North Carolina

EP003672

1

INTRODUCTION

As in the case with most U.S. utilities Duke Power Company has experienced a major change in operating philosophy in the past several years. In that time period decommissioning plans for certain fossil stations were scrapped and replaced with a charge to continue operating them in primarily a cyclic mode for an extended period of time. This necessitated us developing a different approach than routine plant maintenance which would be responsive to the new schedule constraints.

The following summarizes why extension of life studies are necessary at Duke Power:

--Operating philosophy change significantly

Base load operation was replaced with severe cyclic operation

--Components are at the end of their design life.

--Advanced technology has not been previously applied to those plants scheduled for decommissioning. Now in some instances this technology must be considered and applied in a short period of time.

--Plant maintenance program previously employed did an excellent job in minimizing cost outlays versus keeping the plant in service until the end of its design life. This program simply can't be applied to the present situation

2
DUKE PHILOSOPHY

Define the Charter

This is an extremely important element in our approach. The Charter must minimally address what extension of life is desired, under what operating conditions, and what justifications will be accepted for making modifications.

Appoint a Team

The team must have representation from the major design areas as well as operating areas. Leadership in the study/evaluation phase is provided by Design Engineering. The implementation phase is led by Fossil Production. Team members must have 8-10 years experience in their area of expertise and have the time to commit to the study.

Assure Other Needed Resources Are Available

Every area of required expertise cannot be presented on the team itself. Therefore access is assured to 30-40 additional Design Engineering, Fossil Production, etc. personnel. Outside vendors and consultants are also made available to the team if needed.

Develop the Approach

Assure that the approach will net results which meet the charter of the study. In addition the approach when initially developed must be adaptable to future fossil plant studies thus minimizing startup requirements on these later studies.

Applying the Approach

Assure good time management of the resources such that the study is completed on schedule and complete. A week by week schedule is utilized to assure milestone schedule compliance.

Develop Cost and Schedule For Modification Work

Any modifications identified must be cost estimated first. If the modification is justified based on the charter then a schedule start date is developed based on current Fossil Production outage schedules.

Develop the Final Report

The report serves two purposes. First, it provides Management with the necessary cost and schedule data for the designated extension of life to facilitate a decision whether or not to proceed. Second, it provides the technical basis to initiate the design, specification, and purchasing efforts to implement the modifications if approved.

3

INITIAL STUDY AT DAN RIVER

Plant Data for Dan River:

Unit	Rated MW	Manufacturer	Operation Condition	Commercial Operation
Dan River 1	70	Turbine - GE Boiler - CE	1295 psi 950°F	December, 1949
Dan River 2	70	Turbine - GE Boiler - CE	1295 psi 950°F	March, 1950
Dan River 3	150	Turbine - GE Boiler - CE	1850 psi 1000°F/1000°F	August, 1955

Study team charter was as follows:

--Identify and cost estimate all modifications required for a twenty year extension of life or which can be shown to be cost effective.

--Develop a milestone schedule for near term activities required to support equipment ordering and detailed design.

--Develop and document an optimum approach for the study such that it will be directly applicable to future fossil station studies.

Study team composition:

Name	Expertise
R. M. Sandifer	I&C, Power Piping
C. H. Favor	Systems
S. G. Crews	Structural, Coal Handling
W. J. McCabe	Environmental
R. S. Darke	Boiler Controls & Industrial Instrument Control Room Design
I. F. Moss	Electrical Controls
W. F. Hall	Production
L. C. McRee	Production
B. E. Davis	Production

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The Study Outline was developed by the team based on known concerns in both Design Engineering and Fossil Production. Appendix A was the final version of this outline.

The documentation approach developed on Dan River and utilized again on Allen consisted of two primary elements for each area of review listed on the Study Outline from above:

--Survey Report - This contains the Survey Outline and and Individual Problem Reports required as a result of the survey on that particular area of review. These Individual Problem Reports include a statement of the problem, findings, cost/schedule data and a recommendation.

--Results/Recommendations Summary - Summarizes by area of review all modifications evaluated in the Individual Problem Reports. Appendix B is the second page of this summary for Boiler Gas System, Area of Review No. 9.

Results were as follows:

Goal	Results
Identify and cost estimate modifications required for a 20 year extension of life or which can be shown to be cost effective.	The following is a numerical breakdown of the items recommended:

	Required for 20 year Extension of Life	Cost Effective
Specific Modifications	66	10
Recommended Surveys, Studies, etc. needed to Confirm Additional Modifications	8	5
Totals	74	15

The 74 listed above under "Required for 20 year Extension of Life" coupled with the activities already planned by Fossil Production will assure reliable cyclic service for Dan River for a minimum of twenty additional years.

Develop a milestone schedule for near term activities required to support equipment ordering and detailed design.	A detailed 25 page schedule was developed which covers the near term activities associated with the 89 items identified above.

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Develop and document an optimum approach for the study such that it will be directly applicable to future fossil station studies.

Our recommended approach was:

1) Utilize the same study team charter with the qualification that the actual number of years of extended life may vary.

2) Define study scope as to the station and the applicable units.

3) Choose fourteen study team members as follows:

   1 - Electrical Power Systems/Equipment

   1 - Electrical Control Systems/Equipment

   1 - Mechanical Equipment

   1 - Mechanical Systems

   1 - Mechanical Piping

   1 - Mechanical I & C

   1 - Civil Structural Design

   1 - Civil Stress Analysis, Support/Restraint Design

   1 - Civil/Environmental

   1 - Station Representative (Engineer from the fossil station currently under study)

   1 - GO, Fossil Production

   1 - GO, Fossil Maintenance

   1 - GO, Fossil Technical Services, (One I & C; One Chemistry/Environmental)

   Assure that the chosen personnel will be able to dedicate up to 1/3 of their time to the study for a four month period. Organize the activities specified by this study and any future studies as a dedicated project. This would include equipment procurement and detailed engineering associated with the modifications identified in each study.

4) Use the same procedure as the initial study including the documentation package.

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4

FOLLOWUP STUDY AT ALLEN

Plant Data for Allen:

Unit				
Allen 1	165	Turbine - GE Boiler - CE	2450 psi 1050°F/1000°F	June, 1957
Allen 2	165	"	"	November, 1957
Allen 3	275	"	"	October, 1959
Allen 4	275	"	"	October, 1960
Allen 5	275	"	"	July 1961

Operating Assumptions:

Next 8-10 Years

- Capacity factor in the (25-35)% range.
- Weekend shutdowns normal; weekday shutdowns during some periods.
- Some periods of cold shutdown lasting from (4-10) weeks.
- Daily load cycling while operating (Minimum to Maximum loading).
- Load ranges for cycling (gross mw).

	Minimum Load		Maximum Load	
Unit(s)	Current	Desired	Current	Desired
1 & 2	70	45	165	185
3	120	90	285	295
4	120	90	295	295
5	120	90	290	310

Desired response rate: 3.0 mw/minute.

- Startup times.
- 25 hours to get five units on line with full water storage in hotwells, surge tanks and boilers.
- 65 hours to get five units on line with full drained hotwells, surge tanks, and boilers.

EP00367

Beyond 1992

- Capacity factor gradually increasing to near the 50% level.
- Continued weekend shutdown; reduced weekday shutdown.
- Periods of cold shutdown lasting several weeks.
- Load cycling daily while operating (Minimum to Maximum loading).
- Load ranges for cycling: same as 8-10 year assumption.
- Desired response rate: same as 8-10 year assumption.
- Startup times: same as 8-10 year assumption.

Emphasis should be placed in the following areas for Allen units:

- Reliability on startup
- Load cycling ability
- Improving turn-down ratio.
- Load operation.

Study team charter was as follows:

Conduct a comprehensive study to determine the restoration upgrading and/or design changes necessary to support reliable cycling/peaking operation or which are viewed to be cost effective commencing with the implementation of the identified design changes in the 1984-1985 time period and concluding approximately 2005.

Give major consideration in the study to the demands cyclic operation will place on the operating personnel as well as the equipment. Design changes, etc., which have the potential of meeting or reducing these demands are to be carefully considered.

Evaluate practicality of implementing the required modifications.

Provide recommendation on those modifications which should be implemented on the basis of either being required or cost effective. Include approximate cost and proposed implementation date.

Develop milestone schedule for preparatory activities required to support issuance of a work order such that adequate time can be provided once the timing of the actual modifications is determined.

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Study team composition:

DESIGN ENGINEERING DEPARTMENT:

Name	Expertise
R. M. Sandifer	I&C, Power Piping
S. G. Crews	Structural, Coal Handling
I. F. Moss	Electrical Controls
J. E. Stoner, Jr.	Electrical Systems
L. G. Goodman	Power Piping, Stress Analysis, S/R Design
D. G. Gardner	Mechanical Equipment
J. O. Thames, Jr.	Mechanical Systems

FOSSIL PRODUCTION DEPARTMENT:

Name	Expertise
M. W. Campbell	Plant Engineer, Allen Steam Station
B. C. Gaffney	I&C, Performance
F. C. Hayworth	Maintenance
L. C. McRee	Reliability Assurance
J. A. Mathews	Environmental

The Study Outline was initially developed from Dan River, revised specifically for Allen, and finalized based on known operating and design concerns. This outline is similar in format to the outline shown in Appendix A.

A total of 237 problems, concerns and upgrades were identified in this study. These broke down as follows:

Previously resolved or planned to be resolved by Fossil Production	81
Identified for the first time in this study	156
TOTAL	237

The 156 initially identified in this study broke down as follows:

Qualify under the charter of the study	103
Will not qualify under the charter of the study	53
TOTAL	156

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The 103 which qualified under the charter fell into the following categories:

Required for extension of life	71
Required for cyclic operation	6
Required for safe operation	10
Cost effective	16
TOTAL	103

The 53 which did not qualify under the charter fell into the following categories:

Not cost effective	45
Indeterminate	8
TOTAL	53

5

RECOMMENDATIONS ON INITIATING A STUDY

Establish operating philosophy first. Clearly define the specifics of any cycling requirements. Capacity factors, weekday and/or weekend cycling, and required startup times are all needed information. Indicate maximum loading rate for the unit. If the operating philosophy is expected to be different for a specific period then list separately.

Next, develop the charter. Assure that the charter clearly covers the following:

--Length of Life Extension
--Justification for Replacement/Upgrades
--Operating Philosophy (from above)

Typically in our studies the following justifications for replacement/upgrades are acceptable:

--Required For the Designated Extension of Life
--Required For Cyclic Operation
--Required for Safe Operation
--Cost Effective

Obviously the fewer of these that are offered the shorter the time frame for the study.

Team membership must be carefully selected based on what is to be done. Typically the following is our starting point in identifying a team:

1 - Electrical Power Systems/Equipment
1 - Electrical Control Systems/Equipment
1 - Mechanical Equipment
1 - Mechanical Systems
1 - Mechanical Piping
1 - Mechanical I & C
1 - Civil Structural Design
1 - Civil Stress Analysis, Support Restraint Design
1 - Civil Environmental

1 - Station Representative (Engineer from the fossil station currently under study)
1 - GO, Fossil Operations
1 - GO, Fossil Maintenance
1 - GO, Fossil Technical Services (One, I & C; One Chemistry/Environmental)

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6

RECOMMENDATIONS/UPGRADES
RESULTING FROM THE DAN RIVER AND ALLEN STUDIES

The following is a partial list of recommendations and upgrades proposed to management as a result of the Dan River and Allen Studies.

Recommendation	Problem/Concern	Estimated Cost of Modification
DAN RIVER		
Replace generator voltage regulators (two units)	Generator voltage regulators are open frame structures presenting safety hazard; frequent maintenance; availability of spare parts very questionable, required for extended operation.	$ 119,577.28
Replace condensate pump (1)	Original pump, casing cracked, required for extended operation.	68,000.00
Repair boiler waterwall tubes (two units)	Boiler waterwall tubes broken loose from buck stays and protrude into furnace; skin casing overheating; required for reliable extended life operation.	890,000.00
Replace superheat control dampers.	Control dampers deteriorated, required for extended life.	88,000.00
Replace boiler gas ducting and expansion joints at top of boiler after preheaters.	Previously subject to numerous repairs, will not survive another pressure transient, required for extended operation.	80,260.00
Replace Feedwater Control Valves	Valves are high maintenance items (replacement of inner valves every 2-3 years); replacement parts difficult to obtain.	100,00.00
Replace all of Alarm System, both local and control room oriented.	Alarm system and annunciators are unreliable, obsolete, and difficult to maintain.	250,000.00
Establish permanent pressure pipe inspection program.	Condition of piping unknown, required for extended operation.	106,000.00

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Recommendation	Problem/Concern	Estimated Cost of Modification
Remove main steam cross-over ties.	Tie lines not used in several years; current startup procedures do not permit use of ties; isolation valves are leaking and are high maintenance items.	$ 76,680.00
Replace filtered water tank	Required for extended life.	213,484.00
Replace service water strainers	Strainers worn out	285,946.00
ALLEN Overhaul intake screens (15)	Intake screens are vital to the operation of the CCW System; they are in very bad condition; required for extended operation.	600,000.00
Replace Hotwell/condensate pump (3) expansion joints.	Expansion joints are deteriorating; required for extended operation.	65,800.00
Replace boiler ignitors and oil guns with higher BTU ignitors on all cool levels (4 units).	Pilot oil light off system is out dated and results in unreliable operation; required for extended operation; required for safe operation.	1,740,000.00
Replace all I.D. fan dampers with design incorporation external bearings (3 units).	Dampers require frequent maintenance and are difficult to operate; required for extended life.	175,470.00
Line coal handling chutework areas subject to sulfuric acid induced corrosion with alumince ceramic tile.	Sulfur in coal combines with water to form sulfuric acid. This acid deteriorates metal in coal handling chutework. This modification is required for extended operation.	93,140.00
Install magnetic separators at head of coal conveyor belts where coal is dumped into the crusher.	Occasionally chunks of steel enter the crusher and damage it. Required for extended life and safe operation.	153,390.00
Replace combustion control system final drives.	The combustion control system performance is suffering due to poor condition of final drives. Required for extended life and cyclic operation.	243,096.00

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Recommendation	Problem/Concern	Estimated Cost of Modification
ALLEN		
Replace feedwater heater pneumatic proportional controllers with electronic proportional, integral feed forward control sys.	Existing feedwater heater level drain controls do not maintain a desired water level during operation. Required for extended life.	$ 122,174.00
Upgrade soot blower control system (5 units).	Sootblower controls in degraded condition. Required for extended operation.	257,420.00
Replace supply/return service water piping for boiler feedwater pump hydraulic coupling coolers.	Boiler feedwater pump hydraulic coupling coolers do not receive sufficient flow during summer months. Required for extended operation.	123,870.00
Retrofit condensate polishing demineralizers	High silica concentrations in boiler water during startup exceeds allowable limits for full pressure/load operation. Cost effective modification.	1,300,000.00
Retrofit blowdown recovery	Make-up water shortages occur during multiple unit startups due to high demand from blowdown and inadequate size of water treatment system. Required for extended operation and cyclic operation.	525,000.00

EP003686

IDENTIFYING OPTIMUM COST/BENEFITS FOR EVALUATION OF PLANT LIFE EXTENSION

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ABSTRACT

Most electric utilities have always conducted maintenance and related activities to prolong the useful life of generating units, consistent with economic criteria and expected needs. At present, the electric utility industry is in the process of responding to changes in the ground rules brought about by high capital costs, regulation, and unpredictable load growth.

If plant life extension serves the balanced interests of stockholders and ratepayers, capital improvements and increased attention to equipment above and beyond routine maintenance may be warranted. Serving the balanced interests is productive for both the electric utility and the public that it serves.

A microcomputer-based financial decision support system can be developed to identify cost/benefits which result in shared advantages for shareholders and ratepayers. With this system, rate levels and other applicable regulatory criteria are modeled. Sensitivity of revenue rates, rate of return and earnings per share of common stock to the cost of plant life extension can be displayed by varying the financial parameters involved. In this way, the minimum revenue requirements for power plant life extension options are identified.

PLANT LIFE EXTENSION PROGRAM DEVELOPMENT

Figure 1 illustrates a basic structure for Plant Life Extension Program development. The process begins with electric utility planning and decision making to identify system-wide goals, establish financial criteria, and to make a preliminary assessment of the possible benefits of plant life extension. Associated requirements such as increased availability, minimum load, and cycling capabilities are explored. A list of prioritized candidate units with initial strategy for the system, as well as each unit, is developed.

A more detailed feasibility study is initiated in the next phase, if prospects look good for a Plant Life Extension Program. Candidate units are selected for steam generator, turbine generator, and balance of plant studies. Plant inspections are conducted to establish the present condition of the plant components. Performance

EP013314

testing, nondestructive testing, and diagnostic testing are planned. Cost estimates for a proposed schedule of modifications are developed for critical components. As this work progresses, cost estimating and scheduling information is made available for use in a financial decision support model. Decision level information from the model is soon available for refinement of the initial planning by electric utility management.

Detailed plant investigations proceed during the next phase. Activities include performance testing, nondestructive testing, and internal inspections of critical components. Cost estimates are refined and final recommendations are developed for scheduling of tests and inspections, recommended modifications, and component replacements. This information is then available for use by the electric utility in their program management system.

The electric utility program management system is provided with a structure that drives plant life extension activities throughout the years and is subject to improvement for more effective use under changing conditions. It is provided with a unit-specific data base from the detailed plant investigations, as well as normal operating and maintenance experience. The program structure can include calculation capability for cost estimating and economic analysis for a variety of expected plant modifications and replacements. Specific project decisions would be triggered by the use of the financial decision support model.

This process would continue over the years, with decisions ranging from early complete plant renovation, to a phased approach corresponding to near-term needs and financial capability of the electric utility, or to abandon plant life extension for particular units.

DECISION SYSTEM OBJECTIVES

The primary objectives of developing a financial decision support system are to provide a tool for the following.

- Quantifying and assessing the benefits and costs to stockholders and ratepayers of implementing a Plant Life Extension Program.
- Determining the minimum revenue requirements of a Plant Life Extension Program from a system-wide perspective, as well as for each project identified for the program.
- Testing the sensitivity of earnings and electric rates to the considerations which must go into a Plant Life Extension Program.
- Performing analyses and preparing results for presenting plans or soliciting support for decisions to the utility's regulatory agencies, management, stockholders, and ratepayers.

The main purpose of this decision support system is to put the utility in a position to address the issues of plant life extension from a quadruple perspective--that of the utility as an operating entity; that of the regulators who must link up the evidence; that of the ratepayers who must pay for utility services; and that of the stockholders who must decide how, when, and where to invest their capital.

EP013315

DECISION SUPPORT SYSTEM

When a data base of technical, cost, and scheduling information is defined and structured, a financial model of the utility's total operations can be developed. This is done in a three-step process as shown on Figure 2. The model is produced on commercially available spreadsheet and data base software for use with a microcomputer.

Step No. 1

A Base Case financial model is developed representing the utility's status quo. The model is structured in conventional regulatory format to replicate a conventional test year of operations, with provision for pro forma adjustments for subsequent cases. This is done to ensure that the model is based upon actual utility operation. The model's basic components are as follows.

- Revenue under existing electric rates.
- Other nonelectric operating revenue.
- Nonoperating revenue.
- Operation and maintenance expenses.
  - -- Fixed.
  - -- Variable.
- Depreciation expense.
- Taxes other than income.
- Federal and state income taxes.
- Rate base.
  - -- Claimed by the utility.
  - -- Allowed by regulation.
- Capital structure (mix and cost).
  - -- Long-term debt.
  - -- Short-term debt.
  - -- Preferred stock.
  - -- Common stock equity.
    1. Cost claimed by the utility.
    2. Cost allowed by regulation.

- Return on rate base.
  - -- Claimed by the utility.
  - -- Allowed by regulation.
  - -- Earned by the utility.
- Revenue deficiency or sufficiency.
  - -- Under return claimed by the utility.
  - -- Under return allowed by regulation.
  - -- Under actual return earned.
- Common stock earnings per share.

The following is a discussion of each basic component cited above.

Revenue from sales of electricity under existing electric rates is the first component built into the model. It represents the weighted composite retail and wholesale jurisdictional revenue from rates allowed by the respective regulatory agencies, and nonjurisdictional revenue such as off-system opportunity sales. The level of existing rates most recently approved by the respective regulatory agencies is key to determining the potential benefits, to be shared by stockholders and ratepayers, of proceeding or not proceeding with a comprehensive Plant Life Extension Program or component parts of such a program.

The current level of other nonelectric operating revenue and nonoperating revenue needs to be built into the model also, since not all of a utility's available revenue comes from sales of electricity. Such revenues can include substation and transformer rental, fees for other installations on customer's premises, fees for service calls, appliance repairs, pole attachments, and interest income.

Operation and maintenance (O&M) expense is built into the model by primary plant function: production, transmission, distribution, general plant plus administrative and general (A&G) expense. Substantial detail is designed into the model for the production function, with minimal detail for the transmission, distribution, and general plant functions. Production O&M expense is built into the model for each power or generation source (either by plant or generating unit) and purchases and interchange. Operating expense is placed in the model separate from maintenance expense, with provisions for the fixed and variable component of each. Like general plant expense, minimal detail is placed in the model for A&G expenses, except for property insurance, which should be set out as a separately identifiable cost component.

Depreciation expense is structured into the model similar to O&M expense by primary plant functions of production, transmission, distribution, and general plant. As much detail as possible is stratified in the model for the production function only. Each utility's depreciation practices and rates will be different. Some may have only one composite depreciation rate for total plant. Others may have different rates for the four primary plant functions. Yet others may have separate rates for each primary plant account, with separate rates for coal fired, gas

fired, nuclear, hydroelectric, and internal combustion generation. The key is to stratify depreciation expense in the model in a manner which is consistent with the utility's depreciation practices and depreciation rates allowed by the regulatory agency or agencies.

Taxes other than income taxes usually are primarily property taxes. This cost component is set up in the model in as much detail for the production function as is consistent with the utility's and taxing authority's basis for assessment and payment of personal property taxes on production facilities. If the utility is assessed and makes personal property tax payments on transmission, distribution, and general plant facilities, minimal detail for these cost components is set up in the model. The basis for assessment is included in an off-line comments section of the model. If it is the practice of the utility to include franchise or privilege taxes as taxes other than income in its annual FERC Form 1, this cost component is also set up in the model.

At this point in the model, net revenue available for interest expense for determining income taxes and return on rate base are defined.

Federal and state income taxes are set up in the model consistent with the utility's regulatory agency or agencies practice for determining taxes for ratemaking purposes. If under regulation, the utility is allowed to normalize deferred income taxes for ratemaking purposes, that concept is structured into the model. However, if the utility is required to flow-through the effects of deferred income taxes to current ratepayers, the mechanics of that concept are designed into the model. The mechanics of the utility's state income tax calculation (either before or after federal income taxes) are also specifically designed into the model.

Rate base generally includes gross original plant investment less accumulated depreciation reserves or net plant investment, materials and supplies, and working capital. Most utilities also claim construction work in progress (CWIP) and allowance for funds used during construction (AFUDC). Some regulatory jurisdictions allow at least a portion of CWIP in the rate base and may allow all of CWIP in the rate base if the utility can demonstrate that it would suffer severe financial hardship if CWIP were disallowed. The original cost investment in rate base is structured in the model by primary production, transmission, distribution, and general plant functions, with sufficient detail in the production function to identify each generating plant or unit which may be a candidate for plant life extension work. Accumulated depreciation reserve is similarly structured in the model and corresponds to the structure defined for depreciation expense as previously discussed. Provision is made in the model to define rate base both with and without CWIP, so the impacts of subsequent analysis can be expressed in terms consistent with the utility and regulatory perspectives.

All investor-owned utilities have a different capital structure representing a mix, cost, and weighting of capital by component parts. Most typically, the capital mix is represented by long-term debt, short-term debt, preferred stock, and common stock equity. The cost of debt, of course, is the weighted cost reflecting the age, timing, and interest rates in effect at the time the debt was incurred. The cost of preferred stock is very similar to the cost of debt, even though preferred stock equity is not debt. Its cost, or payment, ranks after payment on debt but before cost or payment on common stock equity. The cost of debt is typically less than the cost of preferred stock, primarily because it is assumed that debt is less risky. The cost of preferred stock is typically less than the cost of common

stock equity for the same reason. Other variables, of course, also affect the cost of each capital structure component, but those factors are outside the scope of this paper.

The utility's existing mix and weighted cost of each capital structure component is designed into the model. Special provisions are made for the cost of common stock equity, to recognize the distinction between the marginal cost of common stock equity from the utility's perspective and the marginal cost of equity capital allowed by the utility's regulatory agency or agencies. In this way, the model is set up and designed to assess the impacts of plant life extension from both perspectives.

Return on rate base is net income expressed as a percentage of rate base. It is structured in the model to reflect three criteria: (1) return claimed by the utility, which reflects the utility's quantification of the cost of common stock equity; (2) return allowed by regulation, which reflects regulatory quantification of the cost of common stock equity; and (3) actual return earned by the utility. This last criterion is important since utilities are never guaranteed a return. At best, they are allowed an opportunity to earn a return, but often there is a lag or attrition in earnings due to regulatory lag, inflation, or other factors beyond the utility's control.

At this point, the model is set up to measure the adequacy or inadequacy of revenue under existing rates and earnings per share of common stock for status quo operations, for the following conditions.

- Capital structure, existing mix and cost, with distinctions between the cost of equity capital from the utility and regulatory perspective.
- Rate base with and without, or part of, CWIP.
- Return on rate base with cost of equity capital defined from the utility and regulatory perspectives, and actual return earned.

The model is now ready for Step 2 in the development of the financial decision support system.

Step No. 2

Step No. 2 is a first deviation from the Base Case and reflects what the utility must otherwise do with, to, and for system generation and power purchases if it does not proceed with the Plant Life Extension Program. This is referred to as Case 2. The generation expansion and power purchase options are embedded in the model as pro forma adjustments to Base Case test year operations. The utility relies on its most recent official generation expansion plan and construction budget in effect immediately preceding the corporate decision to start the Plant Life Extension Program. Case 2 is linked to the same revenue under existing rates and results of recent regulatory decisions embedded in the status quo Base Case.

Case 2 deviations from the Base Case primarily affect the following.

- Fixed and variable production O&M expenses.
- The property insurance component of A&G expenses.
- Production depreciation expense, property taxes, interest expense impact on federal and state income taxes, the capital structure mix and weighted cost, production function components of rate base, and resulting return, revenue deficiency or sufficiency under existing rates and earnings per share of common stock equity.

The results of Case 2 are expressed in both current year and present worth dollars.

Case 2 forms the foundation for measuring the effectiveness of a Plant Life Extension Program or component parts of such a program, as defined in Step 3.

Step No. 3

Step No. 3 is to displace, to the extent appropriate, the generation and power purchase options built into Case 2 with components of the Plant Life Extension Program. These deviations from Case 2 form Cases 3 through "n." Each of the Step 3 cases is also linked to the same revenue under existing rates and results of decisions embedded in the Base Case and Case 2.

The net effect of each Plant Life Extension Program option on each cost component is measured relative to Case 2. Of primary importance is the degree to which plant life extension options allow the utility to defer or avoid generation expansion or purchase power options built into Case 2, and the extent to which the utility can or should defer planned retirements of existing facilities. It is also of primary importance to define the distinction between plant life extension work and routine maintenance.

Incremental gains or savings in fixed and variable production O&M expense, for each generating plant or unit identified by technical analysis as a candidate for plant life extension work, are determined in part by the differential between projected O&M after plant life extension work and status quo O&M expense. Further quantification of differentials in production O&M expense is derived by comparing projected O&M for work after plant life extension to generation expansion plan O&M expense projected to be avoided.

Special attention is paid to the need for shifts in depreciation rates and expense due to extending the service lives of plants or units beyond their original intended retirement dates. The incremental book cost change is determined by quantifying the differential in depreciation expense for existing units at normal depreciation rates and normal depreciation for planned units, to modified depreciation for life extended existing units and depreciation of planned plants or units avoided. This feature of the analysis does not require a depreciation rate study, however. The net effect of these changes is also embedded in rate base accumulated depreciation reserve.

Incremental savirgs in property taxes is determined by quantifying the differential between taxes on assessed valuation of total original cost of life extended units compared to taxes on status quo existing units and planned additions avoided.

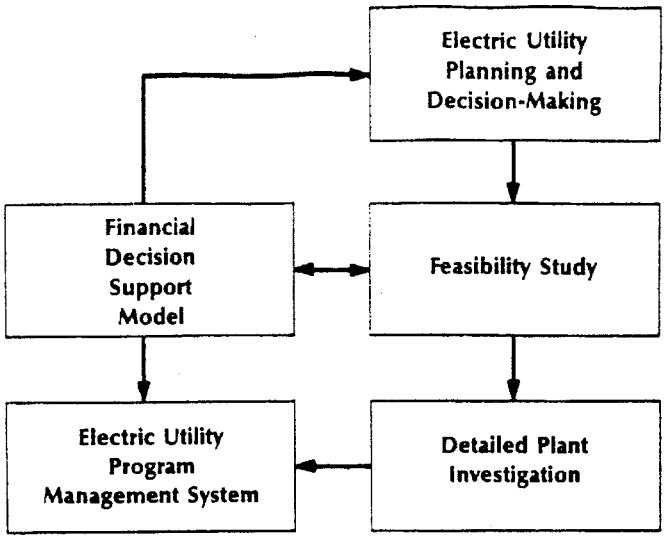
The differential between original cost investment for plant life extension and the type and incremental cost of that investment is reflected as a change in the original cost component of rate base, the capital structure, and return component of total costs of service. The results of Case 3 are also expressed in current year and present worth dollars.

BENEFIT/COST RATIO

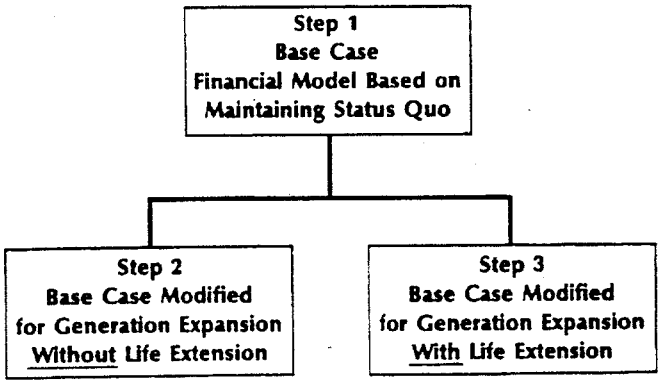
If the cumulative benefits of each Step 3 case, as determined relative to Case 2, exceed the cost of each Plant Life Extension Program option, then the Benefit/Cost Ratio would exceed one, and that case can be used as an indicator for further investigation or decision making. If the Benefit/Cost Ratio for any plant life extension option is less than one, then that component may be ruled out from further consideration, unless company policy or technological advantage indicates otherwise.

Once all cost parameters for plant life extension work have been set up for the Step 3 series of cases, the impact of each, or all, plant life extension options can be assessed in terms of benefits to stockholders and ratepayers. This is shown by the Step 3 Case or Cases which result, after all considerations, in the least rate increases (or perhaps the potential for rate decreases) and the highest earnings per share of common stock or least attrition in earnings available for common stock equity.

With the results structured to provide balanced benefits, the model will provide assurance that the utility's plan to proceed with or abandon plant life extension has considered the well-being of its stockholders and ratepayers and possible concerns of the utility regulators.



PLANT LIFE EXTENSION
PROGRAM DEVELOPMENT
FIGURE 1



FINANCIAL DECISION SUPPORT SYSTEM
FIGURE 2

REGULATORY ASPECTS OF POWER PLANT LIFE EXTENSION

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REGULATORY ASPECTS OF POWER PLANT LIFE EXTENSION

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INTRODUCTION

During the last several years, reduced electrical demand combined with escalating capital costs and longer licensing times for new electric generation have enhanced electric utility interest in extending the useful life of existing fossil power plant facilities. Many units that are approaching or have exceeded 30 years of operation are being studied for safe and reliable continued operation. In addition to engineering feasibility, one of the central questions a utility must face in deciding whether to retire or refurbish these old units is how significant the regulatory impact might be if the life extension option is chosen. Under current federal and state licensing programs, some 50 laws and regulations must be reviewed to accurately assess the regulatory impact of power plant life extension projects. These regulatory requirements can have a significant effect on the economic evaluation of potential life extension projects.

This paper discusses the following major regulatory programs that impact the design, operation and economics of refurbished generating facilities:

1. Federal and state air quality programs with particular emphasis on regulatory provisions governing modification or reconstruction;
2. Federal and state water quality and solid waste programs which could affect modification projects; and
3. Other federal and state regulatory programs, including Environmental Impact Statement requirements, Corps of Engineers rules governing work in waterways, exemptions under the Fuel Use Act for burning oil or gas, and state Public Service Commission approvals for power plant modifications and inclusion of costs in the rate base.

Because uprating of existing facilities is a closely related consideration in life extension decisions, the regulatory aspects of uprating are discussed. An assessment of expected future developments as they relate to life extension projects will also be discussed. A summary of regulatory programs applicable to life extension projects is contained in Exhibit 1.

AIR QUALITY PROGRAMS

Federal Regulations

The major federal air quality regulations affecting power plant improvements are the New Source Performance Standards (NSPS) and the Prevention of Significant Deterioration (PSD) rules. On the state level, construction and operating permit programs mandated by State Implementation Plans are most important. As a general rule, federal regulations apply to power plant modifications which either increase air pollution emissions or cost more than 50% of a new unit. However, state permit programs would apply to most modification projects.

The NSPS, which comprise the main component of federal air quality rules, directly limit the amount of air pollution that can be emitted from a source. NSPS have been adopted for, among others, industrial and utility boilers (>250 MBtu/hr heat input) built after 1971 and 1978, respectively, along with stationary gas turbines and coal handling equipment. While the NSPS apply primarily to newly constructed facilities, they may also apply if a power plant life extension project qualifies as a "new," "modified," or "reconstructed" facility under the NSPS program.

A "new" facility for purposes of the NSPS would mean an existing facility (>250 MBtu/hr) at which the boiler is replaced. Because most life extension projects do not involve refurbishment as extensive as boiler replacement, life extension projects would qualify under the NSPS as "new" facilities.

A "modification" is defined by the NSPS as any physical or operational change to an existing facility that results in an increased emission rate to the atmosphere of any pollutant to which a standard applies. However, certain activities are not considered "modifications" by the EPA: maintenance, repair and replacement that the EPA considers routine; any increase in the production rate not requiring a capital expenditure; increased operating hours; use of alternative fuel for which the facility was originally designed; and the addition of air pollution control equipment.

The refurbishment of a steam generator would qualify as a "reconstruction" under the NSPS if its capital costs exceed 50% of the cost of a new steam generator, and if it is technologically and economically feasible to meet the applicable NSPS.

In determining the revitalization costs to apply against the 50% criterion, the following major components should be considered:

1. The steam generation system,
2. The combustion air system,
3. The fuel burners and coal pulverizer, crusher and stoker system, and
4. The draft system.

It should be noted first that these components are not defined as eligible by the EPA, but are based on industry experience; and second, that a strict costs reporting system will be required to monitor the costs of the reconstruction.

The importance of the "new," "modified," and "reconstructed" categories can be illustrated by the following:

1. If a large fossil fuel power plant (>250 MBtu/hr) that was constructed prior to 1971 is "modified" or "reconstructed," it would become subject to the 1978 utility NSPS containing stringent emission limitations and percent removal requirements. To meet these requirements, FGD equipment would be required, and high-efficiency precipitators or baghouses would have to be installed. In this example, a utility would be required to install pollution controls on a facility where few, if any, controls existed before.

2. If a large fossil fuel power plant (>250 MBtu/hr) that was constructed between 1971 and 1978 and thus subject to the 1971 NSPS is "modified" or "reconstructed," it would become subject to the 1978 utility NSPS containing more stringent emission limitations and the added requirement of percent removal standards. Depending on the kind of pollution control measures previously taken at the plant, new or modified FGD and particulate control equipment would have to be installed.

The PSD rules apply to large air pollution sources in attainment areas, i.e., areas that meet air quality standards. The quantity of new pollution that can be added from such sources is limited so as to prevent deterioration of the good air quality that already exists. In the case of a life extension project, that portion of the PSD rules that define and regulate "major modification" would be the focal point for analysis. A PSD permit is required for a major modification to an existing large power plant if, due to the modification, the "net emissions increase," exceeds any value on the so-called "de minimis" list of pollutant emissions. The "net" change in emissions accounts for both increases and decreases associated with the modification over the 5 years preceding the planned start of construction date. If a life extension project is determined to be a major

modification or will otherwise be subject to PSD permit rules, engineering studies of expected emission rates and control technologies must be performed, and mathematical modeling will be necessary to determine the expected impact of the increased emissions. In addition, the monitoring of data to establish existing air quality, and analyses of other factors, such as visibility degradation, would be necessary. The PSD permit application would be reviewed and approved by the U.S. EPA or one of the 31 states that have approved PSD programs. It should be noted that this same type of review would be required for major sources and major modifications in nonattainment areas (where air quality standards are not being met), with the added requirement of having to arrange for offsets of any increased emissions.

State Regulations

On the state level, air pollution control statutes and State Implementation Plans establish construction and operating permit requirements for any new source or existing facility modification that results in air pollution emissions. Because life extension projects involve existing power plant facilities, the construction and operating permits that have already been obtained for the plant can probably be modified in lieu of obtaining new permits. As a result of the permit modification, a utility can expect that revised terms and conditions dealing with such things as emission limits and monitoring requirements will be included in the modified permits. These revised permit limits may require that additional pollution control equipment be installed on the modified source. Such equipment additions could significantly affect the economic evaluations.

Another air quality regulatory consideration in planning life extension projects is the "bubble policy," which is an emission trading program applicable to modifications of existing sources. Under the bubble concept, existing plants and groups of plants are assumed to be covered by an invisible bubble. At units where pollution control costs are high, controls can be relaxed and emissions increased; where pollution control costs are low, controls can be tightened and emissions decreased. The effect is to achieve the same level of emissions within the bubble at a more reasonable cost. For a life extension project, application of the bubble policy may allow a utility to avoid PSD permit review, or if actual emissions will be reduced as a result of the project, the utility may be able to increase emissions at another unit of the plant.

Although the bubble policy may provide some benefit for the PSD program, it is not available for use in meeting the NSPS. Its use in nonattainment areas is currently undergoing U.S. Supreme Court review.

WATER QUALITY PROGRAMS

Because life extension projects frequently involve the modification of wastewater treatment systems, and the increased discharge of existing pollutants or the discharge of new pollutants, the impact of regulatory programs controlling water quality must be considered. On the federal level, the National Pollutant Discharge Elimination System (NPDES) program is most important, while on the state level, permits and approvals for construction of wastewater treatment systems are dominant.

The federal Clean Water Act requires that an NPDES permit be obtained for any point source discharge of pollutants into surface waters. The NPDES permit program is administered by the U.S. EPA or one of 35 states with program approval from the EPA. An NPDES permit establishes, among other things, effluent limitations on the volume and characteristics of the wastewaters to be discharged by the permittee. Whether a life extension project would qualify as a "new source" or modification of an existing source under NPDES rules, will dictate not only which federal effluent limitations would apply to the project, but also whether the more stringent new source permit application requirements will be applicable. U.S. EPA regulations (which have been suspended since 1980) classify construction of new structures at existing facilities as "new sources" whenever the construction results in changes in the "nature or quantity" of pollutants discharged. However, under proposed rules expected to be finalized later this year, the kinds of existing source changes that qualify as new sources would be significantly narrowed. Under the proposed rules, electric companies could make major changes to their facilities as part of the life extension projects without becoming new sources. Because of the uncertainty engendered by the EPA rules, individual life extension projects must be examined to determine whether proposed changes constitute a new source or a modification of an existing source.

Most states require that before a wastewater treatment system is constructed or modified, licensing approval must be obtained from the state environmental protection agency. In addition, if a state has not been delegated NPDES program authority by the U.S. EPA, state discharge permits are typically required before pollutants may be discharged into state waters. Unless new wastewater treatment

facilities are required or new pollutants are discharged as a result of a life extension project, it is expected that modification of these permits will suffice for such a project.

Another consideration is the impact that a life extension project might have on water quality. As an example, both federal and state rules deal with discharges of heat from power plant facilities. In order to meet these thermal requirements for a life extension project, a cooling tower or cooling impoundment may be required, or a study called a 316 (a) and (b) demonstration may have to be done. This study is designed to prove that the discharge of heated water and the intake structure design would have a minimal impact on the environment.

SOLID WASTE PROGRAMS

The two major categories of solid waste generated during the operation of a fossil-fuel-fired power plant are: combustion wastes (such as fly ash and FGD waste), and other industrial waste (such as wastewater treatment sludges). The regulation of the storage and disposal facilities for these solid wastes has traditionally been the responsibility of each state rather than the federal government. To protect against groundwater contamination and to ensure that environmentally acceptable methods are used for solid waste disposal, states have imposed construction and operating permit requirements in accordance with federal guidelines. Unless new waste storage and disposal facilities are planned as part of a life extension project, it is expected that modifications to solid waste facilities can be approved by means of corresponding modifications to existing solid waste construction and operating permits.

Because most power plant wastes are either exempt from or can be treated to avoid federal and state hazardous waste permit requirements, compliance with hazardous waste regulations should not be a major licensing consideration in life extension projects.

ADDITIONAL REGULATORY CONSIDERATIONS

Other regulatory programs that may affect a life extension project are the Environmental Impact Statement (EIS) regulations dealing with overall environmental impacts; the U.S. Army Corps of Engineers rules covering work in waterways; the Fuel Use Act rules governing the use of oil or natural gas as a primary energy source; and state Public Service Commission approvals for power plant modifications and rate base changes.

Federal law requires that an EIS be prepared for major federal actions such as the issuance of a Corps of Engineers permit or an NPDES permit. For a life extension project, unless Corps of Engineers' approval is required for major construction affecting waterways, a new NPDES permit issued by the U.S. EPA is found to be necessary, or a Fuel Use Act exemption is needed for use of oil or natural gas, an EIS should not be required.

The Corps of Engineers permit program applies to construction activity in navigable waters and to the discharge of dredged and fill material into "waters of the United States," including wetlands. For a life extension project, it is expected that any activity requiring Corps' approval would be authorized by a nationwide permit that requires only that a proposed activity be covered by Corps rules, that the Corps be notified of the activity, and that certain published conditions be met. Therefore, an individual Corps permit should not be required.

The Fuel Use Act was enacted in 1978 to minimize the use of petroleum and natural gas in industrial facilities, including new electric power plants. More specifically, new electric power plants are prohibited not only from using natural gas or oil as a primary energy source, but also from being constructed without the capability to burn an alternate fuel such as coal, unless an exemption is obtained. Under U.S. Department of Energy (DOE) rules implementing the Fuel Use Act, an existing unit becomes "new" if, during the current year and previous year, the capital costs of reconstruction equal 50 percent or more of the replacement cost of a new unit. The percentage rises to 80 percent if the reconstructed unit does not have greater fuel consumption capability than the unit it replaces. DOE rules generally exclude reconstruction costs whose primary purpose is to improve fuel burning efficiency. As a practical matter, the Fuel Use Act provisions would only apply to a life extension project if new oil- or gas-fired facilities are being considered, or if conversion from coal to oil or gas is planned as part of the project.

The role of state public utility commissions (PUC) in approving life extension projects can be separated into three typical tasks: approval of power plant modifications; issuance of any siting approvals needed for the modification; and authorization for including project costs into a utility's rate base.

When a new power plant is constructed or existing facilities are modified, utilities are required in most states to obtain a new or modified Certificate of Public

Convenience and Necessity from the state PUC. The major focus of the PUC in reviewing certificate applications is the utility's need for power and choice of technology for the proposed utility facility. Because life extension projects can involve significant modifications to existing facilities, approval from the PUC must be taken into account.

Since 1970, a number of states have enacted siting laws designed to expedite the power facility planning process. For new power plants and substantial additions to existing power plants, these siting laws typically require that extensive environmental and socioeconomic information be submitted to the state siting agency (usually part of the PUC) to allow an assessment of potential environmental and socioeconomic impacts from the new or modified facility. As part of the licensing review for life extension projects, it must be determined whether approval from state siting agencies is required.

Finally, the determination of whether and to what extent the costs of life extension projects can be recovered through increased electric rates is within the exclusive domain of the PUC. It is expected the PUCs would be more favorably disposed toward inclusion of life extension costs in the rate base because life extension projects involve the refurbishment of existing facilities rather than new generation, in most cases. Many of the arguments that are used by consumer groups to counter new generation costs (i.e., overcapacity, mismanagement of new construction, etc.) do not apply to life extension costs. It would appear that at a time of increasing costs for all factors of production, utilities would be on solid ground in arguing that life extension costs represent sound capital investment to support essential generation needs.

UPRATING

Uprating involves increasing the capacity of an existing power plant unit that has been operating at a specified rating level because of its design or some other limiting characteristic (e.g., reduced demand, faulty equipment, etc.). Uprating is often a consideration in life extension projects.

Because a facility that has been uprated has potentially greater pollutant emission and discharges, the uprating project itself can be required to meet a greater number of regulatory requirements and to undergo more rigorous regulatory

review. In general, the following regulatory implications should be considered as part of an uprating project:

1. Upratings are more likely to be subject to NSPS and PSD or emission offset regulations because of the potential for increased air emissions. Air pollution control equipment in addition to that already installed at the existing plant may be required as part of state or federal air permits.

2. Uprating projects that include increased wastewater discharges may be subject to the NPDES regulations as new sources. New or upgraded wastewater treatment systems may be required to meet effluent limitations and water quality standards for the new or increased discharges.

3. Increased production of solid wastes from uprated power plants could result in permits for new or enlarged solid waste disposal facilities.

4. Because of increased capacity, more extensive and rigorous involvement from the state public utility commission can be expected for uprating projects.

FUTURE DEVELOPMENTS

While a number of regulatory actions affecting power plant life extension projects can be expected during the next year, the most important proposal deals with acid rain. While many of the acid rain bills currently being considered by Congress call for reductions of sulfur dioxide and nitrogen oxide emissions throughout the eastern United States, others support the Reagan Administration position calling for further study of acid rain.

In general, the reduction bills would require reduction of between 8,000,000 and 10,000,000 tons of SO_2 from 1980 levels. Depending on the particular bill, emissions in excess of 1.2 lb/MBtu or 1.5 lb/MBtu would have to be reduced. These reductions are to occur over a 10- to 12-year period. Also, some of the bills require an additional offset equal to any increased emissions from new or existing sources since January 1, 1981. This means that the net emission level at the end of the reduction period will be equal to the 1980 level minus the required reduction. Several acid rain bills allow substitutions of NO_x reduction for SO_2, and four bills establish a fund to help pay for pollution controls.

While final action on the acid rain bills is not expected until after the 1984 Presidential election, the impact of proposed SO_2 reductions on new and existing power plants should be included as part of life extension studies. For example, the installation of FGD systems or switching to low-sulfur coal as part of life

extension modifications should be studied by utilities in areas targeted for SO_2 reductions by the acid rain proposals.

CONCLUSION

Utilities are currently being faced with critical decisions to ensure that future generation needs are provided for. Projects that extend the useful life of existing generation facilities may prove to be vital in meeting these needs. A sound understanding of regulatory programs and integration of their impacts into life extension studies is essential if life extension projects are to succeed.

Exhibit 1

POWER PLANT LIFE EXTENSION PROJECTS REGULATORY SUMMARY

Federal Requirements

NSPS (air)	-	Standards apply if facility is:
		1. New - replacement of boiler.
		2. Modified - physical or operational change that results in increased emissions.
		3. Reconstructed - fixed capital costs exceed 50% of the cost of a new steam generator.
PSD (air)	-	Permit requirements apply to "major modification" - modification for which net emissions increase exceeds de minimis limits. (permit may be issued by state)
NPDES (water)	-	Permit required for point source discharges to navigable waterways. Modified sources require new or modified permit. (permit may be issued by state)

State Requirements

Air	-	New or modified construction and operating permits required.
	-	Bubble policy may apply.
Water	-	New or modified construction and operating permits required.
Solid waste	-	New or modified construction and operating permits required.

Other Requirements

EIS	-	Not required unless major renovation subject to federal licensing occurs.
Corps of Engineers	-	Nationwide permits for construction activity in navigable waters are available.
State PUC	-	Approval required for modification of power plant and recovery of costs through rate base.

EPRI

Topics:
Fossil fuel power plants
Life extension
Aging (materials)
Power generation planning
Power plant availability

EPRI CS-4778
Project 2596-1
Final Report
November 1986

Generic Guidelines for the Life Extension of Fossil Fuel Power Plants

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EP021523

REPORT SUMMARY

SUBJECTS	Boilers and related auxiliaries / Steam turbines and related auxiliaries / Plant systems and performance assessment / Corporate planning methods
TOPICS	Fossil fuel power plants Life extension Aging (materials) Power generation planning Power plant availability
AUDIENCE	Generation managers and engineers / Corporate planning managers

Generic Guidelines for the Life Extension of Fossil Fuel Power Plants

An increasing number of utilities are deciding to keep aging fossil fuel plants operating beyond their original economic lives. These guidelines provide a systematic approach to planning and implementing a life-extension program for such plants.

BACKGROUND Until recently, utilities expected to replace older, less-reliable fossil fuel plants with new units to meet load-growth requirements and to deliver power at lower costs. However, low load growth, high interest rates, escalating construction costs, and uncertainty about future regulations altered these expectations. Today, utilities are interested in retaining units in service for 50 years or longer. Consistent guidelines that cover all the issues involved in extending plant life were needed.

OBJECTIVE To provide comprehensive guidelines on extending plant life that will help utilities to establish and implement their own programs.

APPROACH Over a 2-year period, the research team obtained information from four EPRI studies under project RP2596: a generation-system planning study at Consumers Power Company and three life-extension projects at Boston Edison Company, Niagara Mohawk Power Corporation, and Pacific Gas and Electric Company. The team supplemented the findings of these projects with information on worldwide utility experiences with life extension. They then developed guidelines that described the technical steps needed to develop a life-extension program. An advisory group of 50 people consisting of utility representatives, major equipment manufacturers, architect/engineers, and members of the EEI Task Force on Life Extension reviewed and contributed to the material.

RESULTS The guidelines discuss all the important issues that a utility is likely to consider during the initiation and ongoing development of a plant life-extension program. Individual sections examine the life-extension issues that arise during corporate and system planning, life-extension planning, and implementation of the program. Such issues include determining whether a unit is a candidate for life extension, ranking units within a system, identifying equipment that should be given inspection priority, and estimating equipment residual life. Each section presents several approaches for dealing

with these issues, thereby enabling an individual utility to select the method best suited to its situation. Examples illustrate some of the situations that different utilities have faced. The guidelines introduce a potentially cost-effective phased approach to life extension. This approach includes assessing residual life in three stages, each one more comprehensive than the previous, and each one to be performed only as needed. Examples illustrate the use of this technique for all critical components. Appendix A includes an integrated life-extension management model to help utilities manage the extensive database associated with life-extension programs.

EPRI PERSPECTIVE

The need for a systematic approach to plant life extension cannot be overemphasized. By 1995, one-quarter of U.S. coal-fired plants and one-half of oil- and gas-fired plants will be more than 30 years old. These guidelines will enable a utility to either set up a phased approach to life extension or revise its current approach. A utility can continually refine its operating plans by repeating the procedures suggested in the guidelines. Applying these procedures to new fossil plants will increase their availability in later life because plant operators will be better informed about equipment condition. EPRI project RP2596-10 will demonstrate the guidelines at 10 utilities representing a cross section of plant ages.

PROJECT

RP2596-1
EPRI Project Managers: Barry Dooley; Jeff Byron
Coal Combustion Systems Division
Contractors: Daedalus Associates, Inc.; Delian Corporation

For further information on EPRI research programs, call
EPRI Technical Information Specialists (415) 855-2411.

Generic Guidelines for the Life Extension of Fossil Fuel Power Plants

CS-4778
Research Project 2596-1

Final Report, November 1986

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ABSTRACT

These generic guidelines were developed under the EPRI project for fossil-fuel power plant life extension - RP2596. In addition to compiling the findings of four utility life extension projects, the guidelines incorporate worldwide experience in the residual life assessment and life extension of fossil-fuel power plant components. The guidelines are aimed at assisting those utilities without formal life extension programs to formulate initial life extension planning studies and to provide guidance in the subsequent implementation of a life extension strategy. For utilities with existing programs, the guidelines provide technical life assessment guidance and also serve as a checklist for the periodic review and updating of the programs.

The guidelines review life extension on three organization levels - 1) corporate and system planning issues, 2) life assessment (plant) planning issues and 3) life extension implementation. They provide a logical, stepwise procedure for establishing or revising a life extension program. The guidelines, particularly the section on life extension implementation, are structured in a three-level approach in which increasingly costly and accurate residual life assessments are performed only as needed. A phased approach to life extension is introduced as a potentially cost- and resource-effective way of implementing life extension activities. Each step of the life extension process is illustrated with examples of the manner in which the implementation may typically occur. However, given the variety of circumstances facing each individual utility, the emphasis is on those steps that are typically performed and not upon recommending the details of a particular life extension program.

In addition to details contained in the body of the document, the Appendices provide on-going guidance during the execution of the life extension programs for utilities that have already embarked upon in-house programs. Appendix A covers an Integrated Life Extension Management (ILEM) Model that can form the basis of a decision support system for optimizing any life extension program. Appendix D provides a concise review of recent or on-going complementary research, and addresses the detailed technical issues that will face any utility during the life extension process. Appendix E compiles for reference a partial list of plant life extension work that has been performed to date (June 1986).

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ACKNOWLEDGMENTS

Guidance from many sources has been pulled together to obtain the details of these guidelines. The following individuals and groups deserve special thanks for the level of input to the final report in its current form:

- The Utility Advisory Group which met three times during the course of this project and provided valuable discussion and comment as the guidelines were being developed
- The EEI Life Extension Task Force under the direction of Stephen Salay (Cincinnati Gas & Electric) for their review of the development of these guidelines
- The utilities and their contractors that executed parts of RP2596 - Boston Edison (RP2596-02), Niagara Mohawk (RP2596-03), Consumers Power (RP2596-05) and Pacific Gas & Electric (RP2596-06)
- The CEGB for input from their own life extension program, which has been ongoing for over five years
- To Mark Farber (Temple, Barker & Sloane) for the corporate planning examples generated during the work on RP2596-04
- Special thanks to Tom Yezerski (Pennsylvania Power & Light) who has always advocated the term "phased approach"
- Finally, thanks to a number of EPRI program and project managers who provided technical insight, in particular to Barry Dooley, Jeff Byron, Dom Geraghty and Jim Edmonds.

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Section 2

CORPORATE AND SYSTEM PLANNING ISSUES

INTRODUCTION AND OBJECTIVES

Figure 2-1 highlights the subject matter of this section - those issues that are critical to the initiation and subsequent periodic review of the life extension program on a utility-wide basis. The four major topics shown in Figure 2-1 are: I. Consideration of Corporate and System Issues, II. System Data Gathering, III. Benefits of Life Extension and IV. Costs of Life Extension. The results of those deliberations will be integrated into a life extension program plan.

Some utilities have existing life extension programs; for them consideration of the issues (and the iterative input from other parts of the program) will lead to a revised program plan. The revised program plan might reflect such detail as more accurate cost and benefit information, changes in the corporate environment, experience from recent life extension projects (either in-house or throughout the industry), new technologies that change the planned refurbishment schedule, new techniques or tools for equipment assessment, regulatory changes that affect life extension decisions, and other factors.

As shown in the figure, for those utilities just formalizing their life extension activities the result of the first evaluation of boxes I through IV will be an initial planning study, which will move logically into more detailed considerations of the plant issues (Section 3 of these guidelines) and the implementation of a life extension program (Section 4), with subsequent program plan revisions as needed.

Two of the most important parts of the resultant program plan are indicated in Box VI. They are the ranking of units or projects and the estimate of costs (for capital budgeting purposes) and schedule. More detail about ranking, costs and schedule will be presented later in the section. These features enable a focussed and cost-optimized approach to plant planning and implementation, the next steps in the process.

Finally, Figure 2-1 emphasizes the iterative nature of the planning process by demonstrating that after the refurbishment and post-refurbishment stages have

EP021554

Examples of Action Item #7. A detailed chapter within the final report of the Consumers Power life extension project RP2596-05 (4) discusses findings about environmental controls in the light of particular regulations. Table 2-5 compiled as a part of that effort offers an example interpretation of the applicable Federal air quality regulations. Table 2-6 shows estimated modification costs to meet environmental requirements for their units of interest. The cost estimates generated for Table 2-6 have assumed that the projects in question will not be subject to either the NSPS criteria for modification or reconstruction or the Prevention of Significant Deterioration (PSD) criteria for major modification.

Action Item #8 - Outline factors outside the utility that should be considered as a part of the initial planning study or revised program plan.

Discussion of Action Item #8: Numerous factors (outside the cost and technical issues) may impact life extension planning. These factors might include for example:

- Expected treatment of life extension by public utility commissions or city governments with franchise agreements
- Accounting, budgeting and control issues which might not be delineated within the cost action items covered later in this section.

It has been suggested that corporate counsel be consulted as a part of life extension planning activities, particularly for the interpretation of regulatory and environmental issues when such activities are clearly beyond the scope of what might be considered typical maintenance (such as unit uprating or fuel conversion).

Example of Action Item #8. At least one utility (20), owing primarily to an excess of generating capacity, has received unfavorable public utility commission reception of proposed life extension activities. For this utility, life extension might not proceed even to the planning study stage because of this negative reception.

Summary of Corporation and System Issues

The need for additional activities may be encountered in dealing with corporation and system issues, depending upon the particular circumstances of the utility. Action on the above eight items should, however, provide most of the basic information for drafting or revising this portion of the life extension program plan. The next section addresses the gathering of system data and its uses.

EP021586

EPRI

Topics:
Fossil fuel power plants
Power plant availability
Power generation planning
Life extension
Maintenance
Operation

EPRI CS-4207
Project 1862-3
Proceedings
August 1985

Proceedings: Fossil Plant Life Extension Conference and Workshop

Prepared by
Bechtel Power Corp.
San Francisco, California

EP025082

REPORT SUMMARY

SUBJECTS	Plant systems and performance assessment / Boilers and related auxiliaries / Steam turbines and related auxiliaries / Power system planning
TOPICS	Fossil fuel power plants Power plant availability Power generation planning Life extension Maintenance Operation
AUDIENCE	Generation managers and engineers / R&D managers and engineers

Proceedings: Fossil Plant Life Extension Conference and Workshop

By 1990, one-quarter of U.S. fossil-fired power plants will be close to the traditional 30-year retirement age. Because of today's economics, such plants will be called upon to supply reliable service for an additional 20 to 30 years. These proceedings review the technical challenges, engineering approaches, and investments involved in extending plant life.

BACKGROUND Typically, a fossil fuel power plant is designed for a 30-year life. But as new fossil plants become increasingly difficult to finance and planned nuclear units are deferred or canceled, efforts are being made to extend the life of aging fossil plant 50 or 60 years of reliable service. To explore this issue, EPRI and EEI sponsored a three-day workshop in Washington, D.C., in June 1984.

OBJECTIVE To bring together utility engineers and managers, manufacturers of power plant components, and architect/engineers to exchange ideas and experiences on maintaining and operating aging fossil-fired plants.

APPROACH More than 200 representatives of U.S. and foreign utilities, architect/engineering firms, suppliers, government agencies, and research organizations associated with the utility industry were invited to present papers on the many issues involved in extending plant life. The workshop included sessions on the following topics: utility life extension programs; generation planning and the regulatory environment; technical approaches to estimating remaining life; and boiler, turbine generator, and balance-of-plant life extension projects. In addition, utility working groups discussed some issues from utility perspectives.

KEY POINTS

- Turbine and boiler manufacturers now offer programs to upgrade their equipment in fossil-fired plants. Such programs include modernization, adaptation for cycling duty, and major plant life extension. Balance-of-plant equipment can be evaluated for upgrading by the utility or an architect/engineer.
- Although individual engineering and economic estimates of the cost of upgrading an aging plant varied in their level of detail, utilities reported that

most estimates were under $250/kW—compared to $1500/kW for building a new plant.

• Extending a plant's life beyond its design limits requires a careful assessment of strategies to overcome the natural results of aging: creep, fatigue, corrosion, and erosion. A life extension program should begin with an evaluation of the remaining life of those components that strongly affect plant availability and that require long lead times to replace. To ensure reliable service from older plants, the program should include on-line diagnostic monitoring to track the aging process; operational strategies for the remainder of the plant's projected life; an economically feasible schedule for the inspection, repair, or replacement of components; and design modifications for heat rate and cycling.

• Utilities must consider the effect of life extension on the environment (for example, plant requirements for air, water, and solid-waste disposal). They must also assess the effects of anticipated regulations on plant life extension.

EPRI PERSPECTIVE

This workshop contributed valuable information for EPRI's R&D planning. It also identified the need for a comprehensive set of guidelines that integrates the many factors involved in plant life extension. EPRI project RP2596 is now developing generic life extension guidelines based on evaluation of plants at Boston Edison, Niagara Mohawk, and Pacific Gas & Electric companies. These utility guidelines will recognize differences in plant size, age, and geographical location and will address the issues of layup, derating, and decommissioning, as well as life extension. A second fossil plant life extension conference and workshop scheduled for 1986 will feature these guidelines.

PROJECT

RP1862-3
EPRI Project Manager: [illegible] Scheibel
Coal Combustion Systems Division
Contractor: Bechtel Power Corp.

For further information on EPRI research programs, call EPRI Technical Information Specialists (415) 855-2411.

DISCUSSION GROUPS SUMMARIES

EP025559

DISCUSSION GROUPS

Groups comprised of utility representatives only met to discuss the following topics:

- Air quality regulatory issues.
- Techniques for estimating remaining life.
- Setting up a life extension program.
- Techniques for balance of plant evaluation.

The following pages summarize these discussions.

AIR QUALITY REGULATORY ISSUES

Summary

The primary purpose of this work group was to discuss potential federal air quality regulatory requirements which could apply to certain fossil plant life extension projects. The work group focused on EPA's new source performance standards for steam-electric generating plants, in particular provisions related to modified or reconstructed sources. The principal conclusion of the work group was that the economic feasibility and risks of fossil plant life extension projects can be significantly affected by potential air qua' y regulatory requirements. Utility engineering and environmental project person. l should work together with legal staff during the planning stages of such projects in order to evaluate the likelihood of applicability of air quality regulations and maximize the possibility of qualifying for exemptions.

During the course of our discussions, the work group briefly reviewed the federal new source performance standards regulatory requirements, discussed the modification and reconstruction provisions of these rules and exemptions, and identified several key issues requiring further clarification. The work group concluded with the identification of several points of consensus based upon its deliberations.

EP025560

New Source Performance Standard Regulatory Requirements

The three principal pollutants regulated by federal new source performance standards (NSPS) applicable to steam-electric generating plants are sulfur dioxide (SO_2), oxides of nitrogen, and particulates. The most recent revisions to the NPPS, which apply to sources commencing construction on or after September 19, 1978, are summarized below:

SO_2 - maximum allowable emission rate of 1.2 lbs/MBtu and minimum allowable emission reduction requirement of 90%. Reduction requirement declines to no less than 70% for a maximum allowable emission rate of 0.6 lbs/MBtu.

Oxides of Nitrogen - 0.5 lbs/MBtu for subbituminous coal and 0.6 lbs/MBtu for bituminous coal.

Particulates - 0.03 lbs/MBtu

These federal requirements are minimum acceptable performance standards. Under the Clean Air Act, states are allowed to adopt even stricter requirements.

Life extension projects may result in the affected facility being classified as a modified or reconstructed source, triggering NSPS requirements. Physical or operational changes which increase emission rates qualify as modifications. Irrespective of whether a facility is considered modified, if the fixed capital (defined as capital needed to provide all depreciable components) cost of the project's replacement components exceeds 50% of the fixed capital cost for a comparable, entirely new facility and if compliance is technologically and economically feasible, a facility is considered reconstructed and subject to federal NSPS requirements. Unless a project can qualify under the exemption provisions, a modified or reconstructed facility would be subject to EPA's 1978 NPSPS regulations and scrubber retrofits would be required.

Exemptions From NSPS Requirements

Modification Exemptions:

The four principal modification exemption categories are:

1. Routine repair, replacement, or maintenance, even if an increase in emission rate results.

2. Increases in capacity factor ("hours of production").

3. Firing of an alternative fuel if the facility was designed to accommodate such fuel prior to August 17, 1971 (the date that the first NSPS regulations became applicable). For example, a facility initially designed to accommodate coal, but which subsequently converted to oil (for emission reduction or other reasons), can convert back to coal and qualify for an exemption.

4. Increases in production rate (exceeding original design capability) if no capital expenditures result.

Reconstruction Exemptions:

If the projected fixed capital costs of replacement components for a life extension project exceeds 50% of corresponding capital costs for a comparable, entirely new facility, the facility owner is required to furnish information to EPA prior to commencing construction for a determination on the applicability of or exemption from the NSPS reconstruction provisions. EPA reviews the following information in evaluating whether or not compliance with the NSPS requirements is technologically and economically feasible:

1. Description of existing air pollution control equipment and any new air pollution control equipment associated with the project.

2. Estimated fixed capital cost of replacements and for constructing a comparable, entirely new facility.

3. Estimated additional life of the affected facility.

4. The projected increase in emissions (if any).

5. A discussion of technological and/or economic NSPS compliance limitations.

6. Nature of the changes to be made.

Once again it is important to note that this is a summary of modification and reconstruction exemption provisions for the federal NSPS regulations. State regulations may be more stringent.

Issues Requiring Further Clarification

Several provisions in the NSPS regulations and associated exemptions are considerably subjective in nature. Because of this and the dearth of experience to date in evaluating NSPS applicability to life extension projects, there are a number of issues which require clarification. Several of these are:

EP025562

1. What is considered "routine" repair, replacement, or maintenance for the purpose of qualifying for an exemption to the NSPS modification provisions? Some aspects of life extension projects may not be considered routine repair/maintenance/replacement. To the extent possible these projects should be identified as upgraded maintenance programs.

2. Where is the line drawn between capital versus maintenance expenditures? Various agencies such as FERC, IRS, EPA, SEC and state public utility commissions may have different interpretations.

3. How will phased projects be treated with respect to the "50% capital cost" test in the NSPS reconstruction provisions? Over what period of time would costs be aggregated? Could this provision apply retroactively?

Consensus Points

Following is a listing of points for which general consensus existed among the work group participants:

1. Life extension projects will result in increased regulatory agency sensitivity to facility retirement dates contained in generation expansion plans and used as the basis for rate case depreciation allowances. Regulatory agencies may contend that since life extension projects will defer the need for new generation, additional pollution control should be required for the older, higher emitting affected plants.

2. It may be appropriate to downplay the life extension aspects of these projects (and extended retirement dates) by referring to them as plant restoration (reliability/availability improvement) projects. To the extent possible, air quality regulatory issues associated with these projects should be dealt with at the state and local level and not elevated to the status of a national environmental issue.

3. To the extent possible, project elements should be stressed as maintenance related activities to maximize chances for NSPS exemptions. Utility accounting practices play a significant role here.

4. With respect to the "50% capital cost" test in the NSPS reconstruction provisions, a reasonable interpretation of the term "facility" is any plant component associated with the emission of air pollutants (e.g., pulverizers, burners, combustion air system, steam generator, etc).

5. With respect to the "economic feasibility" test in the NSPS reconstruction provisions, a threshold cost should be based on some percentage of the avoided cost of new capacity through comparison of levelized annual costs.

EP025563

cc: BTT
KGR
BK
RBL
EJA

Well worth your time to review and consider highlight examples of our future maintenance and capital expenditures for Lakin, MH and Burwell. We should monitor WEPCO case and discuss this subject at future STG meetings or 5 yr. planning sessions.

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May 17, 1989

Resource Planning
JUN 13 1989
File

TO: MAPP Environmental Committee
MAPP Air Quality Subcommittee

FROM: Eric Hennen, Chairman
MAPP Air Quality Subcommittee

SUBJECT: Update On EPA Policy - Life Extension

This memo is intended to update you with regard to recent events which have occurred in the WEPCO Life Extension saga. This activity was greatly facilitated by my attendance at a UARG meeting on March 22, regarding this issue.

Brief History

In approximately the mid 1980's, Wisconsin Electric Power Company (WEPCO) was embroiled in an acid deposition discussion within the state of Wisconsin along with the rest of the Wisconsin utilities. At that time, clean coal research was in its infancy, and Wisconsin Electric was seeking to get co-funding for a clean coal demonstration at their Port Washington facility. This plant is composed of five units, all of which were operating at various reduced capacity levels, due to cracks in the steam drum. Wisconsin Electric determined that rather than renovate these units to their original condition, they would instead convert them to a pressurized, fluidized bed system and thus qualify, not only for clean coal funds, but reduce SO_2 in cooperation with the state acid deposition requirements as well. Since this project would involve major capital expenditure and modification to the existing facilities, it would likely be subject to NSPS regulation. This was not particularly troublesome, since the Innovative Technology exemption could be utilized.

Unfortunately, clean coal funds did not become available for this project and WEPCO subsequently determined to repair the units to their original condition citing the "routine maintenance" exemption sections of NSPS and PSD. They therefore sought to avoid NSPS and PSD review. Since the issue had already been raised, EPA took a close look at whether the modifications which WEPCO was proposing were in fact, routine maintenance or whether the modifications which involved a substantial capital expenditure could be non-routine, which would still trip NSPS and PSD review. In late 1988, a series of letters between Wisconsin Electric management and EPA

headquarters followed, and ultimately a final decision by EPA was rendered in the form of a letter signed by Donald Clay, Assistant Air Administrator, a copy of which is attached. (not attached)

The Clay letter makes clear EPA's present policy for interpretation of the PSD and NSPS regulations regarding physical or operational changes which are made at power plants which involve a capital expenditure, a pollutant increase, or maintenance. Since the Clay letter is attached to this memo, I will not go into the details of it other than to state that EPA determined that what WEPCO was calling "routine maintenance" was not routine. Further, the modifications which Wisconsin Electric was seeking to accomplish would in fact subject all five units to NSPS or PSD review. Wisconsin Electric responded by filing a suit in the United States Court of Appeals for the Seventh Circuit, challenging EPA's decision. Briefing is ongoing at this point with a final decision by the court expected either in June at the earliest, or if that is not forthcoming, the court will recess and the earliest a decision could be expected would be in the fall of 1989. Wisconsin Electric has retained Hunton and Williams, the attorneys that also represent UARG. UARG also filed an amicus brief, in support of WEPCO, but since they did not formally intervene as parties in the case, UARG would not be bound (and would not bind the rest of the utility industry) if the decision goes against WEPCO.

Because the UARG attorneys feel that this issue is of such concern to the utility industry as a whole, they held a meeting of the Plant Renovation task force on March 22, 1989 to field questions regarding the impact of this policy shift at EPA. Note: This task force used to be called the Life Extension Task Force, however, Life Extension is an unpopular term in the wake of WEPCO.

Meeting Discussion

* NOTE: It must be clearly understood that in the following discussion, what I am about to state is my own interpretation and opinion drawn from the meeting discussion. PSD and NSPS regulations exist on the books. The meeting discussion centered on present EPA policy regarding interpretation of those regulations. As I detail my observations and other discussions at this meeting, it is recommended that legal advice be sought regarding specific issues in question.

The PSD and NSPS regulations state that if a pollutant increase occurs from a particular facility which is coupled with a physical or operational change, then the facility would be subject to PSD and NSPS review. When we discuss PSD, we typically are talking about a tons of a pollutant increase per year. When we talk about NSPS, we are referring to a pollutant increase

over a much shorter time frame such as pounds of pollutant per day. EPA claims that in order to determine whether a pollutant increase will occur, you compare projected potential emissions on a 365 day a year basis at full load against past actual emissions. Since most of us do not operate our power plants at full load for 365 days a year, you will note that under this interpretation, a pollutant increase will always happen, even if no modifications were made. Since the regulations specifically allow that an emissions increase will not have occurred if it is due only to an increase in the hours of operation, it would seem that EPA's present policy differs with their existing regulations. Nevertheless, it appears that present EPA policy has thrown out the capacity factor exemption. This is a point of litigation between WEPCO and EPA. Since WEPCO had been operating its five units at a much reduced level due to safety concerns, under the past actual versus future projected emissions calculation, they would be dealt with quite harshly. WEPCO therefore asked to be able to retest their boilers to demonstrate a higher baseline level. EPA agreed but the testing was necessarily stringent and they were subsequently still unable to show full load capacity at all units. The inference here is clear: if for any reason, one of your facilities breaks down, do not operate for any length of time in a deteriorated state or you may set a new baseline. Document any operation at a reduced level as being temporary and due strictly to factors beyond your control.

UARG and industry have made the point that all industry follows economic cycles and, in periods of high economic output, much of industry will defer maintenance, instead accomplishing the maintenance years later during the time when plant capacities may be reduced due to a downturn in the business cycle. Under EPA's present policy, this definitely presents a problem. General Electric may also be a party to the suit because orders for a turbine refurbishment are down and they are concerned about a loss of business due to an adverse ruling in WEPCO.

There is a rumor within EPA that a so-called "30/30 rule" may come about. EPA is interested in learning about utility plans for refurbishment on any plant 30 years old or greater with historical capacity factors of 30% or less. EPA is interested in whether the utilities plan on increasing capacity factors of these older units.

A second issue of concern in the WEPCO case is a definition of "routine maintenance". PSD and NSPS regulations state that if a physical or operational change occurs, but it is routine maintenance, then these modifications are exempt from PSD and NSPS review. WEPCO has argued that repairs made to the steam drum and air heater basket replacements are routine maintenance. The Clay letter makes clear that EPA has disallowed these items and further, has stated that routine maintenance must be very routine in

order to avoid scrutiny. According to UARG, EPA equates "routine" with "frequent"; whereas, UARG states that routine actually means "in accordance with established practice". UARG believes that maintenance practices are evolving in the utility industry. That, as new standards of safety,

environmental, and performance increase, they are forcing higher levels and standards and more maintenance activities to be accomplished.

UARG believes that under the present EPA policy, in order to qualify for the routine maintenance exemption, the activity would have to be:

* frequent
* inexpensive
* able to be accomplished at a scheduled outage
* will not extend the normal economic life of the unit
* be of standard industry design

UARG suggests that if a catastrophic failure occurs, start maintenance immediately. You should also have established your baseline or representative levels of operation prior to these failures. Performance testing is highly recommended to determine maximum capacity levels of your units.

Another issue which was discussed is what constitutes a "capital expenditure". According to the regulations, if this physical or operational change, which results in a pollutant increase, is coupled with a capital expenditure, then you could subject yourself to PSD and NSPS review. According to UARG, if you capitalize the investment, then there is no question - you have decided that it was a capital expenditure. On the other hand, if in fact you choose to expense the project as a maintenance expense in one year, EPA states that you're only able to allow up to 5% of the original cost or nominal dollar basis of the unit in one year. If your maintenance expenses exceed 5% of this basis of the unit, then EPA determines that a capital expenditure has still occurred, even if you expense it. EPA states in the Clay letter that while they recognize this determination would be harsh in the case of old units which were built with non-inflated dollars, they state that nevertheless, this was what Congress intended anyway.

<u>UEPCO Versus EPA Arguments</u>

UEPCO is arguing that the enforcement of NSPS and PSD in the Port Washington case was arbitrary and capricious and is inconsistent with the regulations. Specifically they are arguing in four areas:

1. EPA needs to engage in proper rulemaking regarding their present policy interpretations of their NSPS and PSD rules. Letters from EPA cannot be used as the force of law.

2. WEPCO believes that maintenance on units with limited capacity which returns them to original capacity should be exempt from NSPS and PSD review, even if these facilities operated for a time at a reduced capacity level.

3. EPA cannot ignore the fact that a capacity factor increase is an exemption under the present rules and EPA's policy of comparing past actual versus future potential 100% emissions is wrong.

4. Whether a fuel switch is allowed to meet NSPS. EPA says the applicable NSPS in the case of power plants is the DA (or scrubber) NSPS.

UARG believes that this case, while not binding on the utility industry, will set a serious precedent if it is adverse. It is also possible that WEPCO, realizing a bad outcome, may negotiate a settlement and leave the litigation. It may in fact, fall to a different utility to further test EPA's present policies. Nevertheless, UARG has sent a letter to administrator Reilly, asking for a reconsideration of EPA's present policy as advocated D.C. circuit action later.

Meeting Conclusions

As a result of this meeting, I believe several points are of importance.

1. Be certain that you know the basis of your past historical emissions and that they are accurate. Test if necessary.

2. Clearly identify your maintenance projects and target them toward specific repairs instead of broad brush life extension programs.

3. Do not use the term "life extension" to describe any project.

4. Carefully review the original cost basis of all plants in nominal dollars, such that you are aware of whether a capital expenditure may occur with a given project

5. Don't <u>ever</u> state that you will be retiring units unless you really mean to do it.

6. Avoid pessimism on plant ratings. If a plant is derated for any reason, make sure your reliability council or pool is aware of the reasons for it and the steps that you are taking to return it to its full rating. Don't operate in a deteriorated state for any length of time.

7. Keep up with maintenance.

It became quite clear throughout the meeting that intent is all important here. Document very clearly in your records that your intent in making a physical or operational change at the unit, conducting routine maintenance, or spending capital expenditure dollars on a unit, is being done with good intent and not that you were trying to life extend the unit to circumvent Clean Air Act requirements.

It is also my impression that if you had to trip one rule or the other, that NSPS would be preferable to PSD. The reason for this is that the NSPS rule requires only that you meet the NSPS Da requirements (which is bad enough, for example an SO_2 scrubber). But the PSD rule and EPA's present policy of "top-down", requires that you install the most stringent best available control technology (BACT), which exists unless you can make a case demonstrating its infeasibility at your particular unit. But the best that you'll ever be able to do is NSPS.

Examples

UARG reviewed several examples for the audience as a way of illustrating how the WEPCO decision may affect other utilities in the future. Of interest to note, is that the WEPCO decision is already affecting two specific utilities.

Detroit Edison has a plant which operates on coal at present with a 10% capacity factor. They wish to switch to natural gas and raise the capacity factor at the unit. Under EPA's present policy of past actual emissions compared to future potential 100%, they showed an increase in NO_x emissions and find that they are therefore subject to PSD regulation requiring best available control technology. To my knowledge, Detroit Edison has not pursued this finding by EPA. However, of interest is that Bush and many members of his staff are from Texas and they are thus very interested in encouraging conversion to natural gas.

Another example is that of Ohio Edison. Ohio Edison won a clean coal II co-funding grant for the installation of clean coal technology. Ohio Edison, following the WEPCO policy, asked if the installation of the clean coal equipment for the mandatory two year period would result in their defining a new reduced pollutant baseline level. If at the end of the two year period,

the clean coal equipment did not work, and Ohio Edison wished to remove it, returning to their previously higher pollutant emission levels, would that trip PSD and NSPS? EPA's response was that in fact, under their present policy, it would trip the regulation. However, EPA went on to say in their letter that, since they are in favor of clean coal demonstrations and since this was in the public interest, they promised that they would not enforce the law. This was contained in a letter called a "No Action Assurance" letter and is attached for your interest. The UARG attorneys point out that while EPA can promise not to prosecute a source, the Justice department is required to enforce the law and would certainly be free to proceed with enforcement action. Also, any citizen under the Clean Air Act can take action against a source. Finally, a letter promising no action assurances by one administrator may not be honored by the next administrator. As of this time, my understanding is that Ohio Edison is cautiously proceeding.

UARG also illustrated several generic type case studies to illustrate how the present EPA policy may work in a given situation. In the next section I will illustrate some of these.

Case 1

A hypothetical power plant has been operating historically at a reduced capacity factor and with no physical change to the unit and only routine maintenance, seeks to increase its capacity factor to meet a new dispatching level. In this particular case, the capacity factor exemption would probably still apply and the unit would not be subject to NSPS or PSD.

Case 2

We take the same unit that has been operating at a reduced capacity factor but now we have made a physical modification to the unit which cannot be classified as routine maintenance (for example, an air heater basket modification or change, a turbine overhaul, installation of new controls, or perhaps burner modifications or fan changes). As a result of these modifications, the capacity factor of the unit is increased and this modification might trip PSD and NSPS.

Case 3

This is again a hypothetical power plant which has had some repairs made which specifically will allow the unit to operate with a slightly better heat rate, slightly higher efficiency, for example, this may have been air heater basket modifications, turbine overhaul, etc. If, in the ensuing case, there was an increase in the efficiency, (i.e. a decrease in the heat rate) and no more coal was burned at the unit, in other

words, dispatching procedures remain the same, then there should be no tripping of PSD and NSPS regulations. If on the other hand, as a result of these repairs (or now called modifications which are perceived to be not routine maintenance) and more coal was burned, probably reflecting an increase in capacity factor of the unit, then PSD and NSPS might be tripped. Therefore, it becomes clear that any modification which is made - repair, maintenance, etc., which results in an increase in emissions could conceivably trip NSPS or PSD regulations.

Case 4

This is a case of a fuel switch on a unit which had been firing oil but wishes to switch to natural gas. Accompanying the switch, perhaps there were burner modifications made, so there are physical changes. The maximum capability in an hour probably would go down, pollutant wise, since gas is inherently cleaner, so NSPS would not be tripped. However, if the unit was previously firing on oil with a very low capacity factor, but determines to have a higher capacity factor on gas, then it's possible that PSD could be tripped. Also, in the event of a fuel switch from a high sulfur coal to a low sulfur coal, modifications to the facility may have to be made in the form of mill changes, coal handling equipment, or perhaps boiler modifications such as extra soot blowers, reheat spray, etc. If the switch to low sulfur coal involves a

switch to eastern low sulfur coal (which may be higher NO_x emitting fuel) then a pollutant increase might be determined and NSPS could apply. If on the other hand, this fuel switch occurred to western low sulfur coal (which is a low NO_x coal), but western low sulfur coal is also a low Btu fuel, then more coal would have to be fired to equal the same kilowatt hour output. Since more fuel is fired, there would be more NO_x generated over the period of a year and PSD may apply.

Case 5

This is a situation where a facility is reactivated from a mothball state. If the reactivation occurs over a period of less than two years, then a new baseline could conceivably not have had time to have been set and there would probably be no NSPS or PSD applicability. However, if a physical change occurred at the facility (i.e. a repair while the unit was mothballed) then the reactivation of the unit may in fact be construed as an emissions increase and PSD or NSPS could apply.

Some other examples that UARG illustrated, were if you improve instrumentation at your facility, it would probably not trip NSPS since NSPS can only consider boiler and associated equipment. But PSD considers the

"affected facility" which includes turbine, controls, electronics, switchgear, everything. Improvement of instrumentation may trip PSD. Improvements in the turbine would probably not trip NSPS because it's not the boiler, but could conceivably trip PSD. Air heater basket modifications or replacements where an efficiency improvement results which leads to an increase in the capacity factor of the unit might be subject to NSPS and PSD. Conversion of a boiler from forced draft to balanced draft (i.e. inclusion of induced fans) would probably subject the unit to NSPS and PSD review. Any type of capacity upgrade of a boiler which results in a change (on paper) of the production output of a boiler might subject the unit to NSPS and PSD review.

Final Thoughts

It should be clear by now that the potential of an adverse outcome in the WEPCO case, could be extremely critical to the utility industry. But note: this is not a rule but is EPA policy and interpretation. The suggestion is clear: review the regulations and evaluate your particular case within the present regulations. If you go to EPA and ask under the past actual versus future projected emission calculation, you will have a pollutant increase and you will probably subject yourself to PSD or NSPS review. Therefore, make the evaluation yourself, document it, and get a legal opinion regarding your company's decision. (Apparently the legal opinion is important to protect yourself from criminal action). In any event, while we make the statement that this is not a change in the present rules, there is no doubt that there is greater liability to a utility following this WEPCO suit than before.

Senior Environmental Engineer

EH16:srf

Attachments

cc: Mr. David Lingo
MAPP Center

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June 18, 1990

Ms. Cheryl Romo
Editor, Public Utilities Fortnightly
Public Utilities Reports, Inc.
2111 Wilson Blvd., Suite 200
Arlington, Virginia 22201-3008

Dear Ms. Romo:

Thank you for your suggestions on how to improve our article entitled "Is There Life Extension After WEPCo?" We have, as you suggested, cut the length nearly in half and eliminated most of the end notes.

Please advise us of your interest at your earliest convenience. Thank you for your consideration.

Sincerely,

David L. Feltner
Senior Attorney

cag
Enclosure

cc: R.L. Brubaker
R.J. DiNicola

IS THERE LIFE EXTENSION AFTER WEPCo?

By
Robert L. Brubaker
and
David L. Feltner

INTRODUCTION

On January 19, 1990, the United States Court of Appeals for the Seventh Circuit issued its decision in Wisconsin Electric Power Co. v. Reilly, 893 F.2d 901 (7th Cir. 1990). It is a decision that addresses what types of changes to an existing source of air pollutant emissions cause that source to be reclassified and regulated as if it were a brand new facility. This decision, and the events leading up to it, are having an enormous impact on electric utility and manufacturing industry decisions regarding investments in existing plants and equipment.

The Wisconsin Electric Power Company (known as "WEPCo") became the first[1/] victim of what an EPA lawyer has characterized as the agency's "recent activist posture" on new source review issues.[2/] Before WEPCo, the conventional wisdom was that the

especially stringent Clean Air Act emission control requirements applicable to new sources would not apply to an existing emission source in the absence of a fundamental modification that brought about new emissions, such as an increase in capacity. After WEPCo, virtually any physical change to an existing facility, even pollution abatement activities and an unpredictable array of repair, replacement, and maintenance projects, can trigger new source control obligations.

An existing coal-fired power plant that is reclassified as a "new" source must, at a minimum, retrofit flue gas desulfurization technology ("scrubbers").[3] Moreover, if an existing source is changed in a manner that requires it to comply with new source emission standards, it is likely that a Clean Air Act permit will be required before the change begins, a task which easily can take 24 months or longer to complete. Given these extremely high stakes, a utility company's obligation to provide reliable electric energy, and the frequent repair, replacement, and maintenance inherent to the safe, efficient, and reliable operation of a power plant,[4] EPA's "recent activist posture" played out in the WEPCo case makes life appreciably more difficult for utility executives, and indeed for everyone regulated under the Clean Air Act.

This article reviews the Clean Air Act's "modification" concept for transforming an "existing" source into a "new" source, and EPA's "interpretation" of what constitutes a modification under its "recent activist policy." A logic diagram to assist in determining what constitutes a modification under EPA's current

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scheme is presented, together with an identification of major problem areas and suggestions for how to deal with them.

THE CLEAN AIR ACT: DIFFERENT REQUIREMENTS FOR NEW AND EXISTING SOURCES

One of the most basic distinctions in the Clean Air Act is the distinction between existing sources and new sources. In general, existing sources are required by the Act to roll back their emissions if and only if such emission reductions are needed to protect the public health and welfare. If the National Ambient Air Quality Standards (NAAQS) are being exceeded in the local area impacted by emissions from an existing source, those emissions must be curtailed sufficiently to improve the local air quality to the level prescribed by the NAAQS. In areas that already meet the NAAQS, or where culpability for NAAQS exceedances can be attributed to other existing sources, an existing source can continue its status quo emissions. New sources, on the other hand, are required to meet stringent technology-based standards when they are built, regardless of local air quality.

The principal new source control requirements in the Act are the New Source Performance Standards (NSPS), the Prevention of Significant Deterioration (PSD) requirements, and the nonattainment area New Source Review (NSR) requirements. NSPS apply to emission source categories EPA has chosen to regulate (there are 62 to date), and reflect the "best demonstrated technology" to reduce emissions for each source category, taking into consideration costs and other impacts. The PSD and NSR programs apply to "major" new sources

that could exceed threshold tonnages of annual emissions of regulated pollutants (for NSR, the threshold is 100 tons per year of any nonattainment pollutant; for PSD, the threshold is 100 tons per year of any regulated pollutant for sources in any of the 26 NSPS categories that existed in 1977, and 250 tons per year for all other sources). The PSD program applies to "attainment" pollutants, and requires a rigorous review of projected air quality impacts and control technology options.[5] The NSR program applies to "nonattainment" pollutants, and is, at least in theory, even more rigorous than PSD review.[6]

The NSPS, PSD, and NSR requirements apply not only to new sources, but also to existing sources that are "modified." The statutory definition of a "modification" is the same for NSPS, PSD, and NSR purposes. It is defined in the NSPS section of the Act as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted."

EPA has promulgated regulations that amplify the statutory definition of a "modification." The NSPS definition of a modification has some important differences from the PSD and NSR definition. The NSPS definition is "any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere [expressed as kilograms per hour] of any pollutant to which a standard applies."[7] The PSD and NSR definitions are concerned with tons per year rather than pounds per

hour of emissions. A "major modification" for PSD and NSR purposes is defined as a "physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.[8] The NSPS, PSD, and NSR regulations defining "modifications" and "major modifications" contain a number of exclusions, the most important of which are: (1) routine maintenance, repair and replacement; (2) an increase in the hours of operation or certain increases in the production rate; and (3) use of an alternative fuel or raw material under certain circumstances.

The NSPS regulations, unlike the PSD and NSR regulations, also apply to "reconstruction" of an existing facility at the end of its useful life (even if the hourly emission rate would not be increased) if the "fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility."[9] There is no "reconstruction" provision in the PSD or NSR regulations.[10]

THE PRE-WEPCo SCOPE OF "MODIFICATION" AND "MAJOR MODIFICATION" JURISDICTION

Prior to WEPCo, it was reasonable to assume that most changes to existing stationary sources would not constitute a "modification" or "major modification," under EPA's NSPS, PSD, and NSR regulations. Moreover, it was possible to avoid the potential for having a project classified as a "modification" or "major modification" by following two cardinal principles: (1) do not

increase the maximum historical emission rate, expressed in kilograms per hour;[11] and (2) do not spend more than half the cost of a comparable replacement facility on refurbishments to an existing source.

Any repairs, replacements, or maintenance costing less than 50% of the cost of an entirely new facility, and that were "routine," would not trigger NSPS, PSD, or NSR jurisdiction over an existing source. While neither the Act nor EPA regulations define the term "routine," the "routine" business practice is to repair, replace, and maintain capital equipment whenever it is more economical to do so than to discontinue the use of the equipment or allow it to deteriorate. The fact that the "routine" maintenance, repair, and replacement exclusion in the NSPS "modification" regulation is expressly "subject to" the NSPS "reconstruction" rule (40 CFR §60.14(e)(1)) necessarily implies that some repairs and replacements exceeding the 50% threshold would be "routine" and therefore not be subject to NSPS were it not for the "reconstruction" rule.[12] EPA's Federal Register preamble to the final "reconstruction" rule stated that "[f]ew, if any, existing steam generators . . . are expected to qualify under the modification/reconstruction provisions; thus, few, if any, existing electric utility steam generating units will become subject to these standards."[13] Even fewer, if any, existing steam generators would be expected to qualify under the PSD or NSR "major modification" provisions, because the PSD and NSR "major modification" rules

categorically exclude production rate increases and omit "reconstruction" provisions altogether.

WEPCo's PORT WASHINGTON STATION REPAIR PROJECT

WEPCo's Port Washington generating station, located on Lake Michigan north of Milwaukee, consists of five coal-fired steam electric generating units placed in service in 1935, 1943, 1948, 1949, and 1950, respectively. Each unit has a design capacity of 80 megawatts. In a 1983 study to assess the condition of the Port Washington plant, WEPCo found that the combustion air preheaters on units 1 through 4 had suffered age-related deterioration, and that the rear steam drums in units 2 through 5 had experienced cracking. With ample reserve capacity at the time, WEPCo shut down unit 5 as a safety precaution in 1985, and reduced the maximum capacity at which units 2 and 3 were operated to 65 and 75 megawatts, respectively. Units 1 and 4 fell to maximum capacities of 45 and 55 megawatts, respectively, due to the diminished efficiency of the deteriorated air heaters.

In 1987, in accordance with requirements of Wisconsin public utilities law, WEPCo applied for Public Service Commission approval of an $83.9 million ($45.6 million of which was to be capital costs) conventional repair and renovation project for the Port Washington Station. WEPCo's proposed refurbishment project consisted of repair and like-kind replacements to the air heaters for units 1 through 4, the rear steam drums for units 2 through 5, and common plant support facilities, so as to restore each of the

five units to the original 80 megawatt nameplate capacity. WEPCo termed the replacement program a "life extension" project, necessary to allow the Port Washington units to operate beyond their currently planned retirement dates of 1992 (units 1 and 2) and 1999 (units 3, 4 and 5), with a new projected retirement date of 2010. The renovation project would not increase the hourly rate of emissions of any pollutant above past maximum levels. The cost of the project would be only about 15% of the cost of comparable replacement capacity, nowhere near the 50% threshold that would make EPA's "reconstruction" rule applicable. While the original design capacity of the units would not be increased, the availability and reliability of the units would be expected to improve.

The Wisconsin Public Service Commission consulted with the Wisconsin Department of Natural Resources on the question of whether any environmental permits would be needed for WEPCo's Port Washington Station repair project. The Wisconsin DNR determined that Clean Air Act NSPS and PSD requirements did <u>not</u> apply to the project, but nevertheless referred the matter to EPA for a second opinion. EPA gave a surprise second opinion: WEPCo's project would be subject to both NSPS and PSD requirements.

EPA's WEPCo DECISIONS

EPA decided that WEPCo's Port Washington Station project constituted a "modification" for NSPS purposes and a "major modification" for PSD purposes.[14/]

EPA determined that NSPS would apply because the maximum kilograms per hour of emissions just prior to the project were less than the potential maximum kilograms per hour of emissions after the project. This calculation produced an hourly emission rate increase due solely to the correction of safety impediments and the restoration of the design capacity of the units. Even if the units could have been operated for a short period of time at design capacity, without any renovation, EPA said it would ignore that fact unless full design capacity "could be achieved on an economically sustainable basis" with deteriorated equipment. EPA would not allow WEPCo to prevent its hourly emissions from increasing by burning lower sulfur coal, on the grounds that it would conflict with the intent of the 1977 amendments to the NSPS section of the Clean Air Act that required a "percentage reduction" of emissions from boilers subject to NSPS.[15] EPA also concluded that the WEPCo project repairs and replacements were not "routine" for a combination of nebulous reasons. However, EPA gave no indication of the weight to be given to any one of the multiple factors, or the interdependency, if any, between the multiple factors.[16] EPA based its determination of "non-routineness" on EPA's judgment of the high "relative and absolute" cost of the project, EPA's perception that the work involved was "rarely performed," EPA's determination that the work to be performed would "significantly enhance" the presently deteriorated "efficiency and capacity" of the units, and EPA's conclusion that the work would "substantially extend" the "useful economic life of the units."

In contrast to the NSPS emission rate baseline, EPA found that for PSD purposes the emissions at Port Washington during the post-1985 period of equipment deterioration was unrepresentative of normal source operations. EPA therefore looked at the annual average emissions during the two-year period 1983-84 as the most recent "representative" emissions for PSD purposes.17/ However, EPA compared the actual representative annual emissions before the project to the maximum "potential" emissions after the project.18/ This actual-to-potential emission comparison test is impossible to pass; "potential to emit," on an annual basis, will always exceed the actual annual emissions of a power plant.19/

In the case of WEPCo's Port Washington Generating Station, the original design capacity of the units would remain constant and the maximum historical kilograms per hour of emissions would not be exceeded. Any increase in annual emissions could therefore only be attributable to an increase in hours of operation or an increase in the rate of production, both of which are explicitly and categorically excluded from the concept of a "major modification." EPA's answer to the increased hours of operation and rate of production exclusions in its "major modification" rule was to state that the exclusions do not apply if "operational or production increases are closely related to physical or operational changes."20/

WEPCo appealed EPA's determinations that NSPS and PSD requirements would apply to the proposed Port Washington Station

repair project. The U.S. Court of Appeals for the Seventh Circuit rendered its decision in the appeal on January 19, 1990.

THE JUDICIAL RESPONSE TO
EPA'S WEPCo DECISIONS

The Court essentially agreed with EPA's interpretation of NSPS "modification" jurisdiction, and disagreed with EPA's interpretation of PSD "major modification" jurisdiction. The Court deferred to EPA's determinations that the Port Washington repair project was a "physical change" within the meaning of the NSPS and PSD modification rules, and that it was not "routine" repair, maintenance, or replacement within the meaning of the NSPS and PSD modification rules. The Court accepted EPA's comparison of the maximum kilograms per hour of emissions "shortly before" the project to the maximum kilograms per hour after the plant was repaired to find an emissions "increase" for NSPS purposes. The Court also accepted EPA's argument that in the 1977 amendments to the Clean Air Act "Congress rejected fuel switching as a method of avoiding the impact of NSPS."

EPA's assertion of PSD jurisdiction was vacated by the Seventh Circuit. The Court found that EPA's reasoning for comparing pre-change actual to post-change potential emissions to determine whether there was a "major modification" was "circular." In the context of physical or operational changes to any existing emission source, using the "potential-to-emit" concept in the equation assumes what it seeks to prove rather than illuminating which

changes will constitute a "major modification" and which changes will not.[21]

Of all of the surprising elements of EPA's WEPCo decisions, none had potentially more impact than the actual-to-potential emission comparison test for purposes of determining PSD jurisdiction. That's because every change to an existing major emission source subjected to this test is guaranteed to fail. With EPA's expansion of the "physical change" concept in the WEPCo decisions to include any change, shrinkage of exclusions for "routine" repair, maintenance, and replacement, and the exclusion for increased hours of operation and rates of production, the opportunities for EPA to assert PSD jurisdiction on the basis of actual-to-potential emission comparisons would have been boundless. It is extremely significant, therefore, that the Seventh Circuit precluded EPA from imposing such a far-reaching "interpretation" of its "major modification" rules in the absence of prior notice-and-comment rulemaking.[22]

While the WEPCo decision is very clear that EPA cannot use the "potential-to-emit" assumption in the context of a repair and replacement project at an existing emission unit, the decision is less clear about what assumptions EPA can use about annual emission levels after a repair and replacement project. The Court's opinion at one point seems ambiguous, but elsewhere it is quite explicit that the relevant comparison requires the assumption that the existing unit will be operated after the change "under its present

hours and conditions."[23] This crucial question is certain to attract attention in the future.

The issues involved in the WEPCo case are far from being settled. It is too early to predict how EPA will "interpret" and react to the Court's decision in the administration and enforcement of the NSPS, PSD, and NSR programs.

LIFE AFTER THE WEPCo DECISIONS

It is dangerous to generalize about principles to be discerned from the WEPCo case. EPA's "activist posture" on these issues is still new and untested by the rigors of widespread scrutiny and debate. Pending requests for administrative and judicial reconsideration have yet to run their course. The complex relationship of the WEPCo case to broader considerations like the acid rain debate, the Clean Coal Technology program, and national energy policy is difficult to fathom. One prediction that can be made, however, is that a great deal more chaos and confusion will surround these issues before some semblance of order is restored.

There are, nonetheless, some important observations to be made despite the flux of the current situation. First, EPA's aggressive pursuit of "modification" and "major modification" jurisdiction has to date been targeted primarily at the electric utility industry. This is somewhat surprising, considering that industrial facilities far outnumber power plants, and that industrial equipment is altered and renovated more often.

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Second, "life extension" is clearly a prime target EPA's new "activist policy." Even though EPA and the Seventh Circuit hold out the possibility that not all "life extension" projects will result in NSPS or PSD jurisdiction, neither gives clear guidance for differentiating between those that do and those that do not.

Third, the Seventh Circuit condoned and reinforced a process of case-by-case determinations of several vague factors that can lead to NSPS, PSD, and NSR jurisdiction (i.e., what is "routine," what physical changes are "closely related to" increased utilization, etc.). EPA has asserted its authority to make these case-by-case judgments, and the Seventh Circuit has shown utmost deference to EPA's "interpretations."

For the foreseeable future, the mysteries and pitfalls of "modification" and "major modification" jurisdiction will challenge utility and manufacturing executives and environmental managers. How is one to know how much "life extension" is too much? How is one to know what increased utilization is "closely related to" a physical change? How is one to know what repair, maintenance, and replacement is "routine"? How is one to know the proper way to determine and document before-and-after emissions for purposes of ascertaining NSPS, PSD, and NSR jurisdiction? Unfortunately, no statute, regulation, or court decision provides answers to these questions.

~~As a result of EPA's new "activism" signaled in~~ the WEPCo case and its aftermath, tremendously increased emphasis is placed on the details of EPA's "modification" and "major modification" rules,

and EPA's "policies" and "interpretations" used in implementing those rules. Tracking these details is a tedious and complicated task. The cross-references, abstractions, and numerous arcane definitions used in EPA's "major modification" rule read more like the Internal Revenue Code than what one would expect an air pollution regulation to look like.

One way to work through the relevant details of NSPS, PSD, and NSR "modification" jurisdiction is by diagraming all of the potential exclusions from such jurisdiction. Such a diagram is presented in Figure 1. The diagram is to be read from left to right, with the upper track relating to NSPS "modification" and "reconstruction" jurisdiction and the lower track relating to PSD and NSR "major modification" jurisdiction. The diagram takes into account the current administrative and judicial gloss that has been put on EPA's "modification" and "major modification" regulations.

There are no easy solutions to the situation created by EPA's WEPCo decisions, other than EPA's resort to rulemaking to effectuate new "activist posture" policies and "interpretations." Prudence dictates, however, that investment decisions relating to existing plants and equipment be more carefully planned and documented with due consideration given to the pitfalls of potential NSPS, PSD, or NSR jurisdiction. Time should be provided, and priority should be given, to crafting a strategy that ensures one or more of the exclusions in Figure 1, if at all possible.

NOTES

1/WEPCo was the first victim of EPA's aggressive new policy but certainly not the last. EPA has asserted that new source requirements may apply to the addition of gas-firing capability to an oil-fired combustion turbine (letter from David Kee, Director, Air and Radiation Division, EPA Region V, to Morton Sterling, Detroit Edison Company (May 8, 1989)); the initiation of a temporary Clean Coal Technology demonstration project and return of the host unit to its pre-project condition (letter from Don R. Clay, Acting Assistant Administrator for Air and Radiation, EPA, to David L. Feltner, Ohio Edison Company (Feb. 22, 1989)); and reducting an existing electrostatic precipitator (from a "hot side" to "cold side" configuration) in order to enhance the reliability of the precipitator (memorandum from John Calcagni, Director of EPA Air Quality Management Division, to David Kee, Director of EPA Region V Air and Radiation Division (Nov. 3, 1989)).

2/Memorandum from Gregory B. Foote, Attorney, Air and Radiation Division, to William G. Rosenberg, Assistant Administrator for Air and Radiation (Nov. 24, 1989). The hallmark of this policy is "rigorously apply[ing] new source requirements to a broad range of physical or operational changes at existing facilities where the changes provide an economic incentive that <u>might</u> result in increased emissions." <u>Id</u>. (Emphasis added).

3/<u>See</u> Section 111(a)(1) of the Clean Air Act, 42 U.S.C. §7411(a)(1); 40 CFR Part 60, Subpart Da.

4/The Utility Data Institute estimates that from 1981-1988 U.S. utilities spent about $34 billion on maintenance for fossil-fueled power plants.

5/The basic requirements for a PSD permit are: (1) one year of preapplication ambient air quality monitoring of relevant pollutants; (2) a computer dispersion modeling demonstration of compliance with the NAAQS and with PSD increments; (3) employment of the "Best Available Control Technology;" and (4) "Additional Impacts Analysis" of projected impacts on soils, vegetation, and visibility. Secs. 160-169 of the Act, 42 U.S.C. §§7460-7469; 40 CFR §52.21.

6/The basic NSR permit requirements are: (1) the offsetting of new emissions with commensurate reductions from existing emissions; (2) compliance with the "Lowest Achievable Emission Rate;" (3) a demonstration that all of the applicant's major sources in the State are in compliance with the Clean Air Act; and (4) a demonstration that there is a federally-approved plan to remedy the nonattainment that is being carried out for the area. Secs. 171-174 of the Act; 42 U.S.C. §§7471-7474; 40 CFR §51.165.

7/40 CFR. §60.14. The "source" to which NSPS requirements apply is the "affected facility" (defined at 40 CFR §60.12), which is more narrowly defined than a "major stationary source" to which PSD and NSR are applicable (in general, the entire plant or facility). Therefore, it is possible that certain renovations could impact parts of a plant included in the "major stationary source" definition (and therefore trigger PSD or NSR jurisdiction), but not included in the "affected facility" definition (and therefore not trigger NSPS jurisdiction).

8/40 CFR §52.21(b)(2)(i); 40 CFR §51.165(a)(v)(A). A "significant net emissions increase" is a complicated concept, generally defined as an increase in actual annual emissions of a pollutant, measured in tons per year, that is not offset by certain contemporaneous decreases in emissions at the same source.

9/40 CFR §60.15. An exception to the reconstruction rule provides that, even if an existing facility is "reconstructed," it is not required to meet otherwise applicable NSPS if it is not "technologically and economically feasible" to do so. 40 CFR §60.15(b)(2).

10/EPA considered adopting a "reconstruction" rule for the PSD program, similar to the NSPS "reconstruction" rule, but decided not to because "the general PSD objective of safeguarding existing air quality from significant degradation will not be undermined by deleting the requirement for review of reconstructions." 45 Fed. Reg. 52703, col. 3 (1980).

11/There can be no NSPS "modification" without an increase in the emission rate. PSD and NSR "major modifications," on the other hand, are dependent upon annual emissions, which are the product of the emission rate of the source, the hours of operation, and the rate of production. Since the PSD and NSR "major modification" regulations exclude increased hours of operation and increased rates of production from the concept of a "physical or operational change," a source could (before WEPCo) increase its annual emissions under this particular definitional scheme only by increasing its hourly emission rate.

For NSPS purposes, an increase in the production rate is excluded only if it can be accomplished without a "capital expenditure." Production rate increases attributable to a capital expenditure could be prevented from triggering NSPS jurisdiction (before WEPCo) by a commensurate decrease in the hourly emission rate (i.e., a 10% increase in maximum hourly capacity could be neutralized by a 10% decrease in the maximum hourly emission rate).

12/It is not plausible that repairs and replacements that do not constitute a "reconstruction" would be more likely to constitute a "modification" (in the absence of a change in the design or size of the source that increased the kilograms per hour of emissions). The "reconstruction" rule has a "safety valve" that excuses reconstructed existing sources from compliance with the NSPS if it would not be "technologically and economically feasible" to comply. 40 CFR §60.15(b)(2). Why should like-kind replacements that cost 10% of the cost of a replacement facility be off limits to the infeasibility exemption that would be available if the replacements cost 90% of the cost of a replacement facility?

13/44 Fed. Reg. 33591 (1979).

14/Memorandum from Don R. Clay, EPA Acting Assistant Administrator, to David A. Kee, EPA Region V (Sept. 9, 1988); letter from Lee M. Thomas, EPA Administrator, to John W. Boston, WEPCo Vice President (Oct. 14, 1988); and letter from Don R. Clay, Acting Assistant Administrator, to John W. Boston, WEPCo Vice President, (Feb. 15, 1989).

15/Letter from Clay to Boston at p. 11 (Feb. 15, 1989). EPA reasoned that "[b]ecause the will of Congress is so clear that lower sulfur fuels alone will not suffice to comply with NSPS, it would be inconsistent with the legislative intent for EPA to allow sources to use lower sulfur fuel to avoid coverage of NSPS in the first instance in the manner suggested by WEPCo." This is, of course, a non sequitur. The fact that a boiler subject to NSPS must achieve a percentage reduction has nothing to do with which boilers are subject to NSPS and which boilers are not. Moreover, EPA rules do not even require all boilers subject to NSPS to achieve a percentage reduction. See 40 CFR §60.43a(c), (d), (f) and (h); 40 CFR §60.42b(b), (c) and (d).

16/EPA's September 9, 1988 Memorandum states that "[i]n determining whether proposed work at an existing facility is 'routine,' EPA makes a case-by-case determination by weighing the nature, extent, purpose, frequency, and cost of the work, as well as other relevant factors, to arrive at a common sense finding." Memorandum from Clay to Kee (Sept. 9, 1988). In other words, it is impossible to know what changes will be considered "routine" without an EPA inquisition.

17/Id. at p. 5. 40 CFR §52.21(b)(21)(ii) provides that, in general, a source's actual emission is the average rate, in tons per year, at which the source "actually emitted" for the preceding two-year period, but also provides that the Administrator "shall allow the use of a different time period" determined to be "more representative of normal source operation."

18/40 CFR §52.21(b)(21) defines "actual emissions" to mean pollutant actually emitted, except for an emissions unit which "has not begun normal operations," it means that unit's "potential to emit." 40 CFR §52.21(b)(21)(iv), (viii). The WEPCo decision, however, applies the "potential to emit" definition (40 CFR §52.21(b)(4)) to all sources "not currently subject to a PSD permit containing operational limitations," apparently under the reasoning that all planned changes to major stationary sources fit in the category of "an emissions unit which has not begun normal operations." This circular reasoning assumes that all changes to an existing unit make it a new unit (i.e., one to which 40 CFR §52.21(b)(21)(iv) applies), rather than illuminating which changes make it a "new" unit and which changes do not.

19/WEPCo was offered the option of avoiding the PSD jurisdictional consequences of this hypothetical increase in emissions due to potential future increased utilization of the units by accepting a federally-enforceable limitation on the plant utilization so that the baseline actual emissions could never be exceeded by more than the significance levels specified at 40 CFR 52.21(b)(23).

20/Letter from Thomas to Boston at p. 4 (Oct. 14, 1988) (Emphasis added). This test is meaningless, because every operational or production increase can be "related to" a physical or operational change. Moreover, EPA's rules provide that all increases in hours of operation and rates of production are outside the definition of a "physical or operational change."

21/The Court observed that "in order to demonstrate that the Port Washington like-kind replacement project constitutes a modification, the EPA applies the potential to emit concept (to show an increase in emissions). And in order to apply the potential to emit concept to a like-kind replacement, the EPA assumes that the plant is a 'modified' unit." 893 F.2d at 917.

22/The Court recognized that "EPA may, if it wishes, undertake notice and comment procedures to apply the potential to emit concept to like-kind replacement." 893 F.2d at 918.

23/At one point in its decision, the Court stated that "[a]lthough we agree that the EPA cannot reasonably rely on a utility's own unenforceable estimates of its annual emissions, we find no support in the regulations for the EPA's decision wholly to disregard past operating conditions at the plant." 893 F.2d at 917 (footnote omitted). At another point, the Court observed: "EPA could not, at the time the matter was before it, conclude whether the renovated plant would cause a significant net emissions increase if it were operated under present hours and conditions. WEPCo should make such data available so that EPA can determine on that basis whether the Port Washington plant will be subject to the PSD program." 893 F.2d at 918 n.14.

AIR PERMITTING FOR NEW AND MODIFIED SOURCES

WHAT YOU NEED TO KNOW ABOUT MODIFICATIONS/ MAJOR MODIFICATIONS

Presented by:

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I. Background

A. Under Sections 160-179 of the Clean Air Act, new source review, preconstruction permits, and strict emission control requirements must be met with respect to new major stationary sources and major modifications to existing major stationary sources. The Prevention of Significant Deterioration ("PSD") program applies in those areas of the country attaining the National Ambient Quality Standards ("NAAQS"), while more stringent requirements apply in areas not attaining the NAAQS ("nonattainment areas").

B. Certain categories of sources may also be subject to New Source Performance Standards ("NSPS") under Section 112 of the Clean Air Act. If a source is in a category for which EPA has established NSPS, the source must meet the NSPS if it was constructed, modified (within the meaning of the NSPS rules), or reconstructed (defined as replacing component parts costing more than 50% of the cost of a comparable new facility) after the standards were promulgated or proposed (whichever is earlier). A list of categories for which NSPS have been promulgated is attached.

C. New and modified sources of regulated hazardous pollutants must also secure prior approval from the Administrator under 40 CFR §§61.07 and 61.08. This review is confined to determining if the new or modified source will meet applicable National Emission Standards for Hazardous Air Pollutants ("NESHAPs").

D. Over the past several years, a number of developments have occurred which affect these regulatory programs in important ways, perhaps the most important being a redefinition of their applicability to work performed on existing sources. Immediately following the list of NSPS are summary sheets of regulatory definitions relevant to whether a "modification," "reconstruction," or "major modification" has occurred or will occur.

II. General PSD and Nonattainment New Source Review Requirements

A. Basic preconstruction review under PSD requirements include the following:

1. Construction or modification of a "major emitting facility," defined as one of a number of specified types of sources having the potential

to emit 100 or more tons per year of any pollutant, or any other source having the potential to emit more than 250 tons per year, must undergo review.

2. Baseline and increments - The key to the PSD system is the establishment of an air quality "baseline" (the level of actual air quality as of the date of the first complete PSD application) and the prevention of emissions from all new sources from exceeding allowable "increments" (amounts of concentration increases over the baseline levels which are allowed). See Sections 163, 165(a) of the Clean Air Act.

3. In no event can a new PSD source cause or contribute to a violation of the NAAQS. Section 165(a)(3) of the Clean Air Act, 40 CFR §52.21(d).

4. The new source must employ "best available control technology" (BACT) for each pollutants subject to regulation which the source will emit. See Section 165(a)(4) of the Clean Air Act, 40 CFR §52.21(j).

5. Extensive air quality analyses must support an application, including generally a full year of preapplication monitoring and modeling analyses using EPA's guideline models. See 40 CFR §52.21(l) and (m); see also, EPA's Prevention of Significant Deterioration Workshop Manual (October, 1980).

6. Applicants requiring a PSD permit must also prepare an additional impacts analysis for each pollutant subject to review, addressing the air pollution impacts on soils, vegetation, and visibility caused by emissions from the source or modification under review, and the emissions resulting from associated growth. 40 CFR §52.21(o).

B. Basic nonattainment area preconstruction review requirements under Section 173 of the Clean Air Act include the following:

1. It must be demonstrated to the satisfaction of the permitting agency that either: (1) there will be a more than one-to-one emission offset from existing sources so as to represent "reasonable further progress" toward attaining the NAAQS; or

(2) emissions from the new source will be less than the margin for growth provided in an approved nonattainment area SIP.

2. It must be demonstrated that the new source will comply with the "lowest achievable emission rate" (LAER).

3. It must be demonstrated that all major stationary sources owned by the applicant (or any subsidiary, parent company, etc.) in the state involved are either in compliance, or on a schedule for compliance, with all applicable emission limitations and standards under the Clean Air Act.

4. It must be demonstrated that an approved nonattainment area plan is being carried out for the nonattainment area in question.

5. Regulatory requirements for nonattainment SIPs are set forth at 40 CFR §51.165.

III. EPA's WEPCo Decision

A. In late 1988 and early 1989, EPA made an administrative determination that a project planned by Wisconsin Electric Power Company to refurbish five existing units at WEPCo's Port Washington plant would trigger both NSPS applicability and PSD review. The WEPCo decision is set forth in three documents, a September 9, 1988 memorandum from Don R. Clay, Acting Assistant Administrator for Air and Radiation, to David A. Kee, Air and Radiation Division, Region V, an October 21, 1988 letter from EPA Administrator Lee M. Thomas to John W. Boston, Vice President of Wisconsin Electric Power Company, and a February 15, 1989 letter from Mr. Clay to Mr. Boston. The WEPCo decision significantly affects the applicability of the NSPS and PSD programs (and by analogy, nonattainment new source review as well) to repairs and improvements to existing facilities.

B. The situation which gave rise to the WEPCo decision involves five units at WEPCo's Port Washington plant ranging in age from 29 to 54 years. While each unit's design capacity was 80 megawatts, WEPCo had ceased operation of one of the units and had to scale back operation of others pending repairs and the replacement of deteriorating parts. Although the needed work was extensive and expensive, it did not

approach 50 percent of the cost of a comparable new facility, the threshold for "reconstruction" under EPA's NSPS rules. 40 CFR §60.15. After the work, the units would have been able to operate at (but not in excess of) their design capacity.

C. EPA determined the Port Washington project would represent a "major modification" under federal PSD rules. A "major modification" is a "physical change or change in the method of operation of a major stationary source that would result in a significant net emissions increase." 40 CFR §52.21(b)(2).

1. EPA determined that the work represented a "physical change" at the units for purposes of the "major modification" rule. EPA reached this determination even though increases in hours of operation or production rate (which the work would have accomplished) are specifically excluded from the term "physical change" under 40 CFR §52.21(b)(2)(iii)(f).

2. EPA determined that whether a "significant" emissions increase would result depended upon a comparison of actual emissions before the change (generally the rate, in tons per year at which the source emitted for the preceding two year period) and the potential emissions after the change (the maximum emissions which would occur if the source operated at full capacity continuously). Since virtually no source actually operates at its maximum capacity continuously, "actual" emissions will always be lower than potential emissions, and EPA's comparison will always yield a significant emissions increase (and hence trigger PSD review). EPA noted that a source remains free to "net out" of PSD review by agreeing to federally enforceable permit conditions restricting operations to pre-change actual levels.

3. EPA rejected the contention that the WEPCo work was excluded as "routine maintenance, repair and replacement," noting the work involved "the replacement of major components," had as its purpose the extension of the units' useful lives, and was "rarely if ever performed."

4. EPA found, without much elaboration, that the WEPCo work did not amount to a "change in the method of operation."

D. EPA also found that the work triggered NSPS requirements for new steam electric generating units (40 CFR Part 60, Subpart Da) because it was a modification of an affected facility. Under EPA's NSPS rules, a modification is "any physical or operational change to an existing facility which results in an increase in the emission rate" in kg/hr of any pollutant to which a standard applies.

1. EPA found the work constituted a "physical change," and again rejected the contention that the work involved routine maintenance, repair and replacement.

2. Unlike its PSD determination, EPA found the work also constituted an "operational change" for NSPS purposes. EPA reasoned that since a "capital expenditure" was involved, the exclusion for increases in hours of operation or production rate was unavailable.

3. EPA found an emission rate increase by comparing the hourly maximum capacity before the change with the hourly maximum potential after the change. EPA again found design capacity irrelevant, and held WEPCo to the pre-change rate as limited by the deterioration in the units which the project was designed to remedy.

4. EPA noted that NSPS requirements could be avoided only by continuous emission controls, not by fuel switching, operational restrictions or permit conditions.

E. In Wisconsin Electric Power Co. v. Reilly, 893 F.2d 901 (7th Cir. 1990), the Court upheld EPA's decision in all respects but on giving broad deference to EPA, the Court held that it was not arbitrary and capricious for EPA to conclude that the WEPCo work represented a physical change and did not constitute routine maintenance, repair and replacement. The Court also upheld EPA's determination for NSPS purposes that deterioration of a unit is to be taken into account in determining if there has been an emission rate increase, and that NSPS could not be avoided by switching to cleaner fuels. The one respect in which the Court reversed EPA is, however, significant. The Court held that EPA's rules did not authorize EPA to assume continuous emissions from an established source to determine if there has been a signficiant net emissions increase.

F. EPA interprets the Seventh Circuit's decision narrowly, recognizing its applicability only to direct "like kind replacements," such as involved in WEPCo. EPA is also preparing an interpretive rule which is expected to exclude pollution control equipment additions or improvements from PSD jurisdiction. The need for such a rule underscores the potential breadth of EPA's new source jurisdiction over changes at existing facilities.

The Puerto Rican Cement Case

A. Just over a week before Region V issued the first of the three WEPCo decision documents, Region II issued a determination that the conversion by Puerto Rican Cement Company from a wet to a dry process would constitute a modification for PSD purposes.

B. The proposed conversion from a wet to a dry cement manufacturing process would allow the Company to increase maximum production by 35%, but would also result in approximately 28% lesser emissions at maximum production levels. A recession in Puerto Rico had resulted in cement production from the plant, and associated actual emissions from the plant, that were only 46% of the maximum potential levels during the most recent two year period. EPA found a significant net emissions increase by comparing post-change potential emissions with the depressed pre-change actual levels.

C. On appeal, the First Circuit Court of Appeals agreed with EPA. Puerto Rican Cement Company, Inc. v. U.S. EPA, 889 F.2d 292 (1st Cir. 1989). The Court held that assessing emissions for a new facility on the basis of its potential to emit was appropriate under EPA's rules, and the fact that the source owner could lawfully have increased output and emissions from the existing kilns did not require a different result. The Court also held that EPA can deny credit for emission reductions where the five-year period of contemporaneity under 40 CFR §52.21(b)(3)(iii) expires while a permit application relying on prior reductions is pending before EPA.

D. EPA regards the Puerto Rican Cement decision as "a ringing endorsement of. . . EPA's recent activist posture on PSD issues" and "a green light for the Agency to proceed to rigorously apply new source requirements to a broad range of physical or

operational changes at existing facilities where the changes provide an economic incentive that might result in increased emissions." November 24, 1989 memorandum from EPA lawyer Gregory Foote to Assistant Administraotr William Rosenberg.

V. Detroit Incinerator Case

A. On October 21, 1984, the U.S. District Court for the Eastern District of Michigan decided Greater Detroit Resource Recovery Authority and Combustion Engineering, Inc.v. Adamkus, Case No. 86-CV-72910-DT. The case involved the PSD permit for Detroit's $460 million resource recovery plant. In 1984, Michigan issued a PSD permit for the plant, pursuant to a 1980 delegation of PSD permitting authority from EPA.

B. Two years after the permit was issued, Region V tried to redefine BACT for the facility to require a $50 million dry scrubber. Michigan declined to retroactively modify the permit, and Region V attempted to revoke Michigan's PSD authority for this one specific facility. The project sponsors then sued EPA. The Court ruled that EPA could not revoke Michigan's PSD authority under the circumstances involved. Subsequent to this decision, EPA has become much more aggressive in commenting on PSD and NSR permit applications before they are granted.

VI. "Top-Down" BACT Determinations

A. On December 1, 1987, Craig Potter, then the EPA Assistant Administrator for Air and Radiation, sent a memo to all the Regional Administrators entitled "Improving New Source Review (NSR) Implementation." The memo calls for "timely and comprehensive review of all State and local agency-issued major source permits and certain minor source permits." As to BACT and LAER determinations, the Potter memo states:

> To bring consistency to the BACT process, I have authorized OAQPS to proceed with developing specific guidance on the use of the "top-down" approach to BACT. The first step in this approach is to determine, for the emission source in question, the most stringent controls available for a similar or identical source or source category. If it can be shown that this level of control is technically or

economically infeasible for the source in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections. Thus the "top-down" approach shifts the burden of proof to the applicant to justify why the proposed source is unable to apply the best available technology.

B. Implementation of the "top-down" approach has been controversial. Its legality is questionable. Section 169(3) of the Clean Air Act defines BACT as "an emission limitation based upon the maximum degree of reduction . . . which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility . . . ."

1. The "top-down" approach turns upside down the presumption of the Act and historical precedent that an NSPS level of control is the technological baseline for BACT. The statute and common-sense point to an "NSPS-up" approach to BACT, with the burden to the applicant to prove that a hypothetical level of "achievable" control cannot be met requires the impossible proof of a negative.

2. Moreover, there is a good argument that the "top-down" approach is tantamount to a rule that was unlawfully adopted without providing notice and comment procedures.

C. On March 29, 1989, the American Paper Institute and the National Forest Products Association filed a petition "to quash regulation by Agency memoranda, to rescind the BACT Top-Down Policy, (and) to engage in rulemaking." On July 18, 1989, the petitioners also filed a citizen suit in U.S. District Court in Washington, D.C., to enforce mandatory rulemaking and economic assessment requirements under the Clean Air Act. American Paper Institute, et al., v. Reilly, Case No. 89-2030.

D. On February 1, 1990, the Utility Air Regulatory Group (UARG) filed a petition with EPA raising similar issues.

VII. EPA's LAER "Policy" Guidance

A. In virtually the same manner as it administratively "adopted" the new BACT "top-down policy," EPA is now in the process of redefining, by internal agency memoranda, the basis for lowest achievable emission rate (LAER) determinations for new source construction and plant modifications in nonattainment areas.

B. Late February 1989 memoranda between Region V and the Headquarters New Source Review Section at Research Triangle Park indicate, for example, that EPA now interprets the "economic infeasibility" constraint Congress placed on LAER determinations to refer to the infeasibility of meeting a given LAER level of control by an entire industry category (i.e., no plant within the entire industry category could be built or operated with that LAER level of control), rather than economic infeasibility with respect to a particular plant or project. If any plant within "the same (or comparable) industry "uses" the candidate LAER technology, it is assumed to be "affordable" by the rest of that same (and any comparable) industry -- an "affordability" test identical to the one now being used under the BACT top-down policy.

C. Incremental cost factors with respect to the particular plant in question are irrelevant. In addition, under this new LAER "guidance," a State implementation plan limitation may be considered to be "achievable" even if it has not yet been applied to a source, or if it has been applied to only one source and the source cannot comply with it.

D. These new LAER memoranda indicate that, until the final permit actually has been issued, EPA will continue to consider "recent technology advances" in determining LAER (i.e., including "advances" which EPA learns of after the public comment period on the draft permit has closed.)

VIII. NCPS Rulemaking

A. Industrial-Commercial-Institutional Boiler NSPS. On December 16, 1987, EPA finalized its NSPS rules for Industrial-Commercial-Institutional boilers (all boilers between 100 and 250 million Btu/hr. capacity)

by adopting the SO_2 portion of those rules. See 52 F.R. 47826, 40 CFR Part 60, Subpart Db. The SO_2 portion of the Subpart Db rules was proposed on June 19, 1986, and by the terms of Section 111 applies to boilers for which construction commenced after that date. The PM and NO_x portions of the Subpart Db NSPS were proposed on June 19, 1984 and finalized on November 25, 1986. See 51 F.R. 42794.

1. The Subpart Db NSPS rules apply to fossil-fuel fired steam generating units with a heat input capacity of greater than 29 MW (100 million Btu/hour).

2. The rules, with limited exceptions, require 90% reduction in SO_2 emissions from coal and oil fired boilers, with no start up, shutdown, or malfunction exemptions.

3. Several appeals from the rules, and petitions for EPA reconsideration, are pending. The definition of a "modification" for NSPS purposes takes on added significance in light of the new Subpart Db rules.

4. On July 6, 1989, EPA proposed to revise the Subpart Db limits by increasing the allowable sulfur content in "very low sulfur oil" from 0.3 lb SO_2/million Btu to 0.5 lb SO_2/million Btu. See 54 F.R. 28447. Boilers firing very low sulfur oil are not subject to the percent reduction requirement, and the proposed amendment would enhance the availability of burning very low sulfur oil as a compliance option.

B. Small Industrial-Commercial-Institutional Boiler NSPS. On June 9, 1989, EPA proposed new NSPS for boilers between 10 and 100 million Btu/hr. capacity EPA had been under a court order to propose "smaller boiler" standards for PM, NO_x and SO_2 by June 1, 1989, and final standards by September 1, 1990. Sierra Club v. Ruckelshaus, Case No. 84-0325 (D.D.C., Order of Sept. 4, 1985). The new standards will be codified at 40 CFR Part 60, Subpart De. The proposal would require coal-fired boilers of 75 million Btu/hr. or more capacity and an annual capacity factor of 55 percent or more to achieve a 90 percent reduction of SO_2 in addition to a 1.2 lb/million Btu emission limit.

C. Municipal Waste Combustors. On July 7, 1987 (52 F.R. 25399), EPA issued an advance notice of proposed

rulemaking in which it indicated its intention to regulate emissions from municipal waste combustors through NSPS under Section 111, rather than under its Section 112 authority with respect to hazardous air pollutants. Environmentalists and the States of New York and Florida have challenged the determination in petitions filed with the D.C. Circuit.

D. Subpart D Rulemaking. Since October, 1983, has had pending a proposal to substitute a continuous compliance method for the 1.2 lb/million Btu SO_2 limit for the present method of periodic stack testing under representative conditions. EPA proposed a 30-day average interpretation in conjunction with the continuous method to assure equivalence with the present method. NRDC has strongly advocated a 3-hour average requirement, which if adopted would substantially tighten the SO_2 NSPS for many boilers over 250 million Btu/hr. capacity constructed (or modified or reconstructed) after August, 1971.

NSPS SOURCE CATEGORIES

40 CFR Part 60 Subpart Designation	Source Category
D	Fossil-Fuel Fired Steam Generators for Which Construction is Commenced After August 17, 1971
Da	Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978
Db	Industrial-Commercial-Institutional Steam Generating Units
E	Incinerators
F	Portland Cement Plants
G	Nitric Acid Plants
H	Sulfuric Acid Plants
I	Asphalt Concrete Plants
J	Petroleum Refineries
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984
L	Secondary Lead Smelters

M	Secondary Brass and Bronze Production Plants
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983
O	Sewage Treatment Plants
P	Primary Copper Smelters
Q	Primary Zinc Smelters
R	Primary Lead Smelters
S	Primary Aluminum Reduction Plants
T	Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities
Y	Coal Preparation Plants
Z	Ferroalloy Production Facilities
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and on or Before August 17, 1983
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983
BB	Kraft Pulp Mills
CC	Glass Manufacturing Plants
DD	Grain Elevators

EE	Surface Coating of Metal Furniture
GG	Stationary Gas Turbines
HH	Lime Manufacturing Plants
KK	Lead-Acid Battery Manufacturing Plants
LL	Metallic Mineral Processing Plants
MM	Automobile and Light-Duty Truck Surface Coating Operations
NN	Phosphate Rock Plants
PP	Ammonium Sulfate Manufacture
QQ	Graphic Arts Industry: Publication Rotogravure Printing
RR	Pressure Sensitive Tape and Label Surface Coating Operations
SS	Industrial Surface Coating: Large Appliances
TT	Metal Coil Surface Coating
UU	Asphalt Processing and Asphalt Roofing Manufacture
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry
WW	Beverage Can Surface Coating Industry
XX	Bulk Gasoline Terminals
AAA	New Residential Wood Heaters
BBB	Rubber Tire Manufacturing Industry
FFF	Flexible Vinyl and Urethane Coating and Printing
GGG	Equipment Leaks of VOC in Petroleum Refineries
HHH	Synthetic Fiber Production Facilities
JJJ	Petroleum Dry Cleaners
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants

LLL	Onshore Natural Gas Processing: SO_2 Emissions
OOO	Nonmetallic Mineral Processing Plants
PPP	Wool Fiberglass Insulation Manufacturing Plants
QQQ	VOC Emissions from Petroleum Refinery Wastewater Systems
SSS	Magnetic Tape Coating Facilities
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines

"MAJOR MODIFICATION" AS DEFINED IN EPA'S PSD REGULATIONS 40 CFR §52.21(b)(2)(i)

"Major modification" means any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

(ii) Any net emissions increase that is significant for volatile organic compounds shall be considered significant for ozone.

(iii) A physical change or change in the method of operation shall not include:

(a) Routine maintenance, repair and replacement;

(b) Use of an alternative fuel or raw material by reason of an order under sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plant pursuant to the Federal Power Act;

(c) Use of an alternative fuel by reason of an order or rule under section 125 of the Act;

(d) Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;

(e) Use of an alternative fuel or raw material by a stationary source which:

(1) The source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975 pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Subpart I or 40 CFR 51.166; or

(2) The source is approved to use under any permit issued under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166;

(f) An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Subpart I or 40 CFR 51.166.

(g) Any change in ownership at a stationary source.

NET EMISSIONS INCREASE - 40 CFR §52.21(b)(3)(i)

"Net emissions increase" means the amount by which the sum of the following exceeds zero:

(a) Any increase in actual emissions from a particular physical change or change in method of operation at a stationary source; and

(b) Any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable.

(ii) An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between:

(a) The date five years before construction on the particular change commences; and

(b) The date that the increase from the particular change occurs.

(iii) An increase or decrease in actual emissions is creditable only if the Administrator has not relied on it in issuing a permit for the source under this section, which permit is in effect when the increase in actual emissions from the particular change occurs.

(iv) An increase or decrease in actual emissions of sulfur dioxide or particulate matter which occurs before the applicable baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available.

(v) An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.

(vi) A decrease in actual emissions is creditable only to the extent that:

(a) The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;

(b) It is federally enforceable at and after the time that actual construction on the particular change begins; and

(c) It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.

(vii) [Reserved]

(viii) An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.

POTENTIAL TO EMIT - 40 CFR §52.21(b)(4)

"Potential to emit" means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.

ACTUAL EMISSIONS - 40 CFR §52.21(b)(21)(i)

"Actual emissions" means the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with paragraphs (b)(21)(ii) through (iv) of this section.

(ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The Administrator shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

(iii) The Administrator may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

(iv) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

SIGNIFICANT - 40 CFR §52.21(b)(23)(i)

"Significant" means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

Pollutant and Emissions Rate

Carbon monoxide: 100 tons per year (tpy)
Nitrogen oxides: 40 tpy
Sulfur dioxide: 40 tpy
Particulate matter:
  25 tpy of particulate matter emissions;
  15 tpy of PM10 emissions
Ozone: 40 tpy of volatile organic compounds
Lead: 0.6 tpy
Asbestos: 0.007 tpy
Beryllium: 0.0004 tpy
Mercury: 0.1 tpy
Vinyl chloride: 1 tpy
Fluorides: 3 tpy
Sulfuric acid mist: 7 tpy
Hydrogen sulfide (H_2S): 10 tpy
Total reduced sulfur (including H_2S): 10 tpy
Reduced sulfur compounds (including H_2S): 10 tpy

(ii) "Significant" means, in reference to a net emissions increase or the potential of a source to emit a pollutant subject to regulation under the Act that paragraph (b)(23)(i) of this section, does not list, any emissions rate.

(iii) Notwithstanding paragraph (b)(23)(i) of this section, "significant" means any emissions rate or any net emissions increase associated with a major stationary source or major modification, which would construct within 10 kilometers of a Class I area, and have an impact on such area equal to or greater than 1 $\mu g/m^3$, (24-hour average).

"MODIFICATION" AS DEFINED IN EPA'S NSPS REGULATIONS 40 CFR §60.14

(a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

(b) Emission rate shall be expressed as kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine emission rate:

(1) Emission factors as specified in the latest issue of "Compilation of Air Pollutant Emission Factors," EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where utilization of emission factors demonstrate that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (b)(1) of this section does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in paragraph (b)(1) of this section. When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in Appendix C of this part shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

(c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.

(d) [Reserved]

(e) The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of paragraph (c) of this section and §60.15.

(2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility.

(3) An increase in the hours of operation.

(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by §60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification.

(5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial.

(6) The relocation or change in ownership of an existing facility.

(f) Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section.

(g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in paragraph (a) of this section, compliance with all applicable standards must be achieved.

[40 FR 58419, Dec. 16, 1975, amended at 43 FR 34347, Aug. 3, 1978; 45 FR 5617, Jan. 23, 1980]

"RECONSTRUCTION" AS DEFINED IN EPA'S NSPS REGULATIONS 40 CFR §60.15

(a) An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate.

(b) "Reconstruction" means the replacement of components of an existing facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(c) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(d) If an owner or operator of an existing facility proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, he shall notify the Administrator of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

(1) Name and address of the owner or operator.

(2) The location of the existing facility.

(3) A brief description of the existing facility and the components which are to be replaced.

(4) A description of the existing air pollution control equipment and the proposed air pollution control equipment.

(5) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.

(6) The estimated life of the existing facility after the replacements.

(7) A discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

(e) The Administrator will determine, within 30 days of the receipt of the notice required by paragraph (d) of this section and any additional information he may reasonably require, whether the proposed replacement constitutes reconstruction.

(f) The Administrator's determination under paragraph (e) shall be based on:

(1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;

(3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and

(4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(g) Individual subparts of this part may include specific provisions which refine and delimit the concept of reconstruction set forth in this section.

[40 FR 58420, Dec. 16, 1975]

Basic Requirements For A PSD Permit

- 1 Year of Preapplication Monitoring
- A Modeling Demonstration Of Compliance With The NAAQS
- Employment Of "Best Available Control Technology" (BACT)
- An "Additional Impacts Analysis"

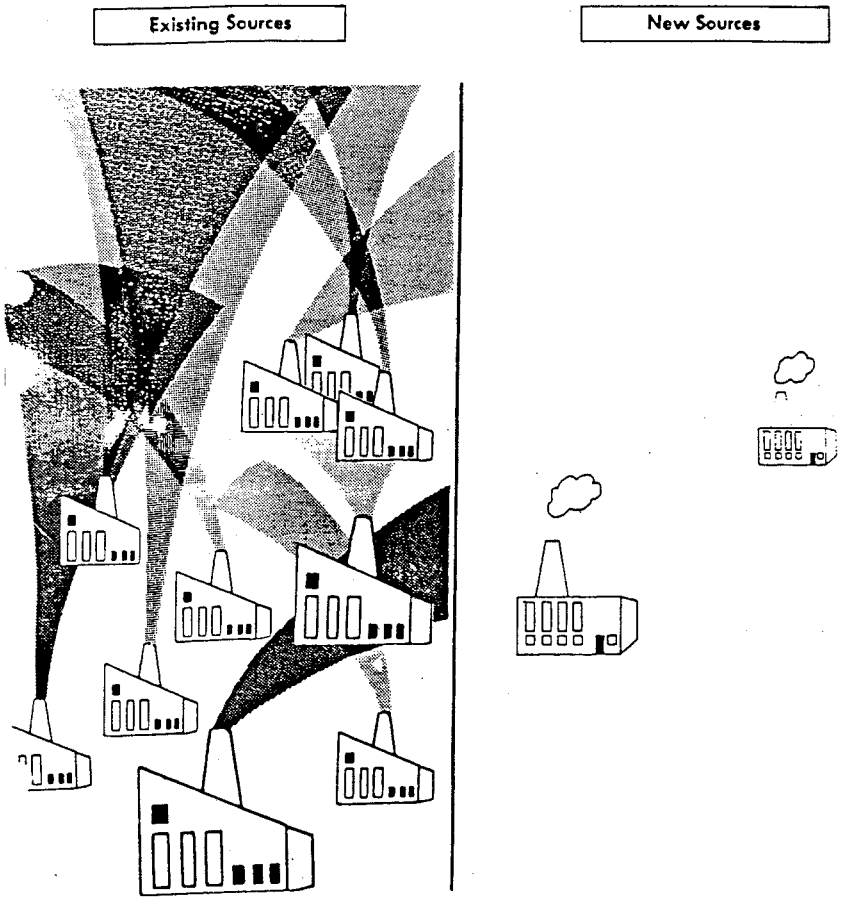
Reference: §§160-169; 40 CFR §52.21

Basic Requirements For A Part D NSR Permit

- Offsets Of New Emissions From Existing Emissions
- Compliance With The "Lowest Achievable Emission Rate"
- All Major Sources In The State Under Common Ownership Must Be In Compliance With The Clean Air Act
- There Must Be An Approved Part D Plan Being Carried Out For The Area

Reference: §§171-174; 40 CFR §51.165

The Modification/Reconstruction Problem



Clean Air Act Statutory Definition of "Modification"

SEC. 111(a)(4) (NSPS):	The term "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.
SEC. 169(2)(c) (PSD):	The term "construction" where used in connection with any source or facility, includes the modification (as defined in section 111(a)) of any source or facility.
SEC. 171(4) (Part D NSR):	The terms "modifications" and "modified" mean the same as the term "modification" as used in section 111(a)(4) of this Act.

"Major Modification" As Defined in EPA's PSD Regulations 40 CFR §52.21(b)(2)(i)

"Major modification" means any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act.

* * *

(iii) A physical change or change in the method of operation shall not include:

(a) Routine maintenance, repair and replacement;

* * *

(e) Use of an alternative fuel or raw material by a stationary source which:

(1) The source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975 pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Subpart I or 40 CFR 51.166: or

(2) The source is approved to use under any permit issued under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51.166;

(f) An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursusant to 40 CFR Subpart I or 40 CFR 51.166.

Key Differences Between NSPS "Modifications" and PSD/NSR "Major Modifications"

- NSPS compares pre-change and post-change emissions rate in kg/hr; **any** increase is a "modification." PSD/NSR compares pre-change and post-change **tons per year** of emissions; an increase above a specified **significance** threshold is a "major modification."

- NSPS applies to "**reconstruction**" of an existing facility (which means replacements that cost more than 50% of the cost of a comparable new facility), even if the emission rate does not increase. PSD/NSR does **not** apply to "reconstruction."

- The **increased production rate** exclusion does not apply for NSPS unless it can be accomplished without a "**capital expenditure.**"

PUERTO RICAN CEMENT COMPANY
8-30-88

FACTS

- Cement manufacturing plant with 6 kilns
- Puerto Rican Cement Company proposed to shut down No. 3 kiln and convert No. 6 kiln from a wet cement making process to a dry cement making process
- Conversion would increase cement production capacity by 35% but cut fuel use (and SO_2, PM, and NO_x emissions) by approximately 28%
- Plant had operated at about 46% of capacity in 1986-87 due to recession
- It was undisputed that, whatever the level of demand, Puerto Rican Cement Company's plant after the conversion would use less fuel and emit less pollutants than if that level of demand had been met using the wet process

EPA DECISION

The proposed process conversion would not be excluded from the definition of a "physical change," and the post-change potential annual emissions would exceed pre-change actual emissions by a "significant" amount. Therefore, the project would constitute a "major modification" subject to PSD.

DECISION ON APPEAL
(Puerto Rican Cement Co. v. U.S. EPA
889 F.2d 292 (1st Cir. 1989))

EPA's decision was upheld. In addition, Court held that right to take credit for emission reductions is lost where five-year period under EPA's rules expires while permit application is being considered by EPA.

Wisconsin Electric Power Company (WEPCo)
9-9-88, 10-14-88, and 2-15-89

FACTS

- 5 80-MW coal-fired steam electric generating units
- 39 to 54 years old
- For approximately 3 years, 1 unit had not been operated, and the other 4 units had been operated below maximum design capacity
- Repairs were estimated to cost $84 million, approximately 15% of the cost of a comparable new facility
- Like kind replacement of air heaters and rear steam drums would restore all 5 units to original 80-MW design capacity

EPA DECISION

Proposed work is not routine maintenance, repair, or replacement and not excluded from the definition of a "physical change." The post-change potential annual emissions would exceed pre-change actual annual emissions by a "significant" amount, therefore the repairs would constitute a "major modification" subject to PSD. Also, post-change maximum potential hourly emissions would exceed pre-change "economically sustainable" hourly emissions, so NSPS would apply.

DECISION ON APPEAL
(Wisconsin Electric Power Company v. Reilly
893 F.2d 901 (7th Cir. 1990))

EPA's decision was upheld in all respects except use of potential emissions for determining if an emissions increase has occurred for PSD purposes. EPA is interpreting this aspect of the decision narrowly.

WEPCO's Surprises

PSD - "MAJOR MODIFICATION"

1. Like kind replacement of equipment that does not increase the maximum capacity or actual emission rate of the source can constitute a "major modification." The original design capacity of a source is irrelevant to whether a "major modification" has occurred.

2. While the rule says a "physical change" shall not include "an increase in the hours of operation or in the production rate," a physical change does include such increases if they are "closely related to" the physical change.

3. The "routine maintenance, repair and replacement" exclusion may be available only if: (1) the repair/replacement is immediate after discovery of deterioration; (2) the replaced equipment is standard in the industry and fails frequently; (3) the repair/replacement is inexpensive; and (4) the repair/replacement does not appreciably prolong the life of the facility.

4. To determine the amount of increased emissions from an existing unit, EPA contends it is necessary to compare pre-change actual emissions (2-yr. avg. tons/yr.) with post-change maximum potential emissions. EPA is treating the Seventh Circuit's reversal of this issue as applying only to "like kind replacements."

NSPS - "MODIFICATION"

1. "The routine maintenance, repair, and replacement" exclusion is rendered extremely narrow and unpredictable as in the case of PSD.

2. The emission rate of the source is deemed to be increased if the maximum potential kg/hr of emissions after the change exceeds the maximum "economically sustainable" kg/hr just before the change, even though the design capacity of the source, the fuel, and the emission control equipment all remain constant.

3. NSPS cannot be avoided by switching to lower sulfur coal to assure no increase in the kg/hr of SO_2 emissions.

EPA'S POST-REMAND WEPCO DETERMINATIONS (JUNE 8, 1990)

PHYSICAL OR OPERATIONAL CHANGES GENERALLY

- EPA CONTINUES TO ASSERT THAT THE REGULATORY EXEMPTION FROM PSD FOR INCREASED HOURS OF OPERATION OR INCREASED RATE OF PRODUCTION DOES NOT APPLY WHEN INCREASED OPERATIONS ARE "DIRECTLY TIED" TO ANY PHYSICAL OR OPERATIONAL CHANGE (AND THE SEVENTH CIRCUIT HAS BROADLY INTERPRETED "PHYSICAL CHANGE" TO INCLUDE EVEN FIXING A LEAKY PIPE)
- EPA'S "ACTUAL-TO-MAXIMUM POTENTIAL" TEST STILL APPLIES FOR ALL NON-EXEMPT PHYSICAL OR OPERATIONAL CHANGES EXCEPT "LIKE-KIND REPLACEMENTS"

EPA'S POST-REMAND WEPCO DETERMINATIONS (JUNE 8, 1990)

NEW CRITERIA FOR "LIKE-KIND REPLACEMENTS"

- IN DETERMINING WHETHER A PARTICULAR CHANGE IS A "LIKE-KIND REPLACEMENT" (AND THUS SUBJECT TO EPA'S NEW ACTUAL-TO-ACTUAL TEST), EPA WILL USE THE FOLLOWING CRITERIA:
  - ENTIRE REPLACEMENT (OR RECONSTRUCTION) OF AN EXISTING EMISSIONS UNIT WITH AN IDENTICAL ONE OR ONE SIMILAR IN DESIGN OR FUNCTION IS NOT A "LIKE-KIND REPLACEMENT";
  - ONLY THE REPLACEMENT OF COMPONENTS AT AN EMISSIONS UNIT WITH THE SAME (OR FUNCTIONALLY SIMILAR) COMPONENTS IS A "LIKE-KIND REPLACEMENT"; AND
  - EVEN COMPONENT PARTS REPLACEMENT IS NOT A "LIKE-KIND REPLACEMENT" IF IT IS PART OF A PROJECT THAT WILL FUNDAMENTALLY CHANGE THE EXISTING PRODUCTION PROCESS;

EPA'S POST-REMAND WEPCO DETERMINATIONS (JUNE 8, 1990)

"ACTUAL-TO-ACTUAL" TEST CRITERIA FOR "LIKE-KIND REPLACEMENTS"

- IN DETERMINING PRE-CHANGE "NORMAL" OPERATIONS, AS WELL AS PROJECTED POST-CHANGE "NORMAL" OPERATIONS FOR PURPOSES OF THE LIKE-KIND REPLACEMENT "ACTUAL-TO-ACTUAL" EMISSIONS COMPARISON TEST, EPA WILL USE THE FOLLOWING CRITERIA:

  - THE PHRASE "PRESENT HOURS AND CONDITIONS," AS USED BY THE SEVENTH CIRCUIT, DOES NOT MEAN PROJECTING POST-CHANGE OPERATIONS TO BE THE SAME AS PRE-CHANGE HOURS OF OPERATION AND HOURLY EMISSION RATES, SINCE THAT WOULD ALWAYS EXEMPT LIKE-KIND REPLACEMENTS;

  - EPA MAY GO BACK AS MUCH AS 10 YEARS (OR PERHAPS MORE, IF INFORMATION IS AVAILABLE TO EPA) TO SELECT A PERIOD OF "NORMAL" OPERATIONS TO USE IN PROJECTING POST-CHANGE "NORMAL" OPERATIONS AND POST-CHANGE "ACTUAL" EMISSIONS, AND MAY SELECT A DIFFERENT PERIOD (E.G., WHEN THE UNIT HAS HAD A LOWER UTILIZATION RATE DUE TO DETERIORATED EQUIPMENT, ETC.) AS "REPRESENTATIVE ACTUAL" EMISSIONS TO ESTABLISH THE PRE-CHANGE PSD BASELINE; AND

  - EPA MAY SELECT AS THE BASIS FOR PROJECTING POST-CHANGE ACTUAL EMISSIONS A UTILIZATION RATE THAT WILL NOT BE REACHED FOR 10 YEARS IN THE FUTURE.

RESPONSES OF ELIOT SPITZER TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. On July 12, 2002, the *New York Times* published an article entitled "In a Switch, Utilities Say Power Is Low" that describes the summer power shortages that New York is experiencing. Reportedly, there have been brownouts on Long Island and in Connecticut, and mobile gas-turbine generators have had to be installed in Chelsea and Long Island. The article cited several causes of the shortages including aging equipment, maintenance delays, and the difficulties that power-generating companies have had in obtaining permits for new plants and substations in the affected areas. Due to the maintenance delays and aging equipment, do you think NSR is a problem in providing the needed electricity to New York?

Response. I do not believe that NSR inhibits the ability of generators to provide a reliable supply of electricity in New York. Indeed, the referenced article does not suggest such a link, or even mention NSR. Utilities may lawfully undertake "routine maintenance" to keep their plants running without having to go through the NSR process. Moreover, utilities may make even major efficiency improvements that increase the amount of electricity generated by the same amount of fuel consumed without undergoing NSR review as this would not increase emissions. Finally, although utilities may also make major modifications that do increase emissions, if they choose to do so, they must—and should be required to—obtain a preconstruction permit and install state-of-the-art pollution controls. The requirement not to increase pollution is not a barrier to electricity generation.

I note in addition that according to the New York Public Service Commission's compilation of applications for new power plants in New York (revised 7/30/02), 3630 MW of new electricity generation has been approved in New York and applications for another 5377 MW are pending.

Question 2. From this article, it seems that routine maintenance is a major issue. If it is not a problem, what are the short and long term solutions for New York?

Response. I do not see any indication in the article or elsewhere that "routine maintenance is a major issue." It is only those companies that have evaded the law for years and wish to continue doing so that have cited the NSR provision as a stumbling block to achieving an adequate energy supply.

Nonetheless, I appreciate your interest in New York's short term and long term electricity needs. It is a very important issue, one that my staff and I have spent considerable time considering. Let me briefly respond to your question, and, by separate cover letter, forward to you a copy of my Action Plan for a Balanced Electric Power Policy in New York State (March 20, 2001). Briefly, we must ensure that we have sufficient electricity supply in the New York City area (where demand is greatest and transmission constraints the worst) by increasing clean sources of electricity generation and by reducing the growth of demand through aggressive conservation and efficiency measures. To achieve these objectives, we will need to develop and pursue policies that (1) expedite the siting process for new power generation, (2) upgrade the transmission and distribution system, (3) increase renewable energy and clean distributed generation sources, (4) protect the consumer, and (5) protect the environment. I firmly believe that each of these objectives is reconcilable with the others, and that all can be pursued simultaneously.

DEPARTMENT OF PUBLIC SERVICE
ARTICLE X CASES
Revised 7/30/02

Case Number	Project	MW	Developer	Town/ County	Pre-Application Date [1]	DEC Notice of Air & Water Permits[1]	Application Filing Date [1]	Chairman Compliance Determination	Certification Date or Estimated Decision Date	Estimated Earliest In-Service Date [1, 2]
Certified Article X Projects										
99-F-1191	Astoria Energy, LLC	1000	SCS Energy	Astoria/ Queens	8/31/99	12/5/01 (Final)	6/19/00	3/1/01 Complies	11/21/01	3Q 2005
97-F-1563	Athens Generating Plant	1080	Athens Generating Co., LP	Athens/ Greene	9/9/97	6/12/00 (Final)	8/28/98	10/28/98 Complies	6/15/00	3Q 2003
97-F-2162	Bethlehem Energy Center	750 Total[3] 350 Net Increase	PSEG Power New York, Inc.[4]	Bethlehem/ Albany	12/19/97	2/13/02 (Final)	11/27/98 [5] 7/2/01 (Amendment)	8/31/01 Complies	2/28/02	3Q 2004
99-F-1164	Bowline Unit 3	750	Mirant Bowline, LLC	Haverstraw/ Rockland	8/23/99	3/26/02 (Final)	3/20/00	8/10/00 Complies	3/25/02	2Q 2006
99-F-1314	East River Repowering	360 Total 200 Net Increase	Con Ed	Lower Manhattan	9/28/99	8/16/01 (Final)	6/1/00	7/31/00 Complies	8/30/01	4Q 2004
99-F-1625	Ravenswood Cogeneration Project	250	KeySpan	LIC/ Queens	11/18/99	9/4/01 (Final)	7/28/00	1/24/01 Complies	9/7/01	4Q 2003[6] (Appl. Estim.)

[1] Estimated dates shown as Quarters, actual filed dates shown as MM/DD/YY.
[2] **In-service dates are based on estimates of when an application will be deemed complete, the time necessary to complete the Article X process and one to two years for construction, dates can change as filing and compliance determination dates change.**
[3] Size of repowered projects shows site total and incremental increase resulting from repowering.
[4] Application was initially filed by Niagara Mohawk Power Corporation.
[5] Completion of filing is pending.
[6] Applicant's estimate of in-service date.

Note: N/A = Not Available

Case Number	Project	MW	Developer	Town/ County	Pre-Application Date [1]	DEC Notice of Air & Water Permits[1]	Application Filing Date [1]	Chairman Compliance Determination	Certification Date or Estimated Decision Date	Estimated Earliest In-Service Date
Filed Article X Applications										
00-F-0566	Brookhaven	580	Brookhaven Energy, LP	Brookhaven/ Suffolk	3/28/00 (PSS)	7/18/02 (Final)	6/25/01	8/15/01	3Q 2002	3Q 2004
00-F-2057	Empire State Newsprint Project	505	Besicorp – Empire Development Co., LLC	Rensselaer/ Rensselaer	11/22/00 (PSS)	5/29/02 (Draft)	12/20/01	5/28/02 Complies	2Q 2003	2Q 2005
99-F-1835	Glenville Energy Park	520	Duke Energy	Scotia-Glenville/ Schenectady	12/29/99 (PSS)	4/17/02	1/31/02	4/9/02 Complies	2Q 2003	3Q 2005
00-F-1356	Kings Park	300	PPL Global	Smithtown/ Suffolk	8/10/00 (PSS) Revision 12/20/00	3/27/02 (Draft)	1/22/02	3/22/02 Complies	1Q 2003	1Q 2004
99-F-1627	Poletti Station Expansion	500	NYPA	Astoria/ Queens	11/19/99	3/22/02 (Final; approval pending)	8/18/00	4/30/01 Complies	3Q 2002 (Estimated)	4Q 2004
98-F-1968	Ramapo Energy Project	1100	Ramapo Energy, LP	Ramapo/ Rockland	12/22/98	12/28/00 (Draft)	11/29/99	1/2/01 Complies	N/A	N/A
00-F-1522	Reliant Energy Astoria Repowering (Formerly Orion Power)	1,816 Total 562 Net Increase	Astoria Generating Co., LP	Astoria Queens	9/5/00 (PSS)	1/2/02 (Draft)	10/29/01	12/28/01	N/A	2007
01-F-0761	Spagnoli Road Energy Center	250	KeySpan	Huntington/ Suffolk	6/1/01	4/3/02 (Draft)	1/28/02	3/28/02	1Q 2003	2004[6] (Appl Estim.)
99-F-0478	Sunset Energy Fleet, LLC	520	SEF	Sunset Industrial Park/ Brooklyn	4/5/99	N/A	7/26/00[5]	9/25/00 Deficient	N/A	N/A

00-F-1256	Wawayanda	540	Wawayanda Energy Center, LLC (Calpine)	Wawayanda/ Orange	7/27/00 (PSS)	10/24/01 (Draft)	8/27/01	10/23/01	4Q 2002	2005

Case Number	Project	MW	Developer	Town/ County	Pre-Application Date	DEC Notice of Air & Water Permits[1]	Application Filing Date	Chairman Compliance Determination	Certification Date or Estimated Decision Date	Estimated Earliest In-Service Date
Filed Preliminary Scoping Statements (as required by 12/1/99 Article X legislation).										
02-F-0342	Indian Point Peaking Facility	330	Entergy	Buchanan/ Westchester	3/18/02 (PSS)	N/A	3Q 2002	N/A	N/A	2004
01-F-1276	TransGas Energy	1100	TransGas Energy Systems, LLC	Greenpoint Brooklyn	9/17/01 (PSS)	N/A	3Q 2002 Applicant's Estimate	N/A	N/A	N/A
Publicly Announced Article X Projects										
N/A	Calpine: Sullivan County Project	520 to 1080 (estim.)	Calpine Corp.	Thomson/ Sullivan	4Q 2002	N/A	N/A	N/A	N/A	N/A

Case Number	Project	MW	Developer	Town/ County	Pre-Application Date	DEC Notice of Air & Water Permits[1]	Application Filing Date	Chairman Compliance Determination	Certification Date or Estimated Decision Date	Estimated Earliest In-Service Date
Inactive Article X Pre-Application Reports and Preliminary Scoping Statements										
00-F-1391	Caithness	750	Caithness Energy, LLC	Brookhaven Suffolk	8/17/00 (PSS)	N/A	N/A	N/A	N/A	N/A
99-F-1295	Grassy Point (formerly Haverstraw)	550	Haverstraw Bay, LLC	Haverstraw/ Rockland	9/24/99	N/A	On Hold	N/A	N/A	N/A
00-F-1133	Oak Point Energy Generating Facility	1075	Oak Point, LLC	Bronx	7/3/00 (PSS)	N/A	3Q 2002	N/A	N/A	N/A
99-F-0961	Twin Tier Power	520	Twin Tier Power	Nichols/ Tioga	7/19/99	N/A	On Hold	N/A	N/A	N/A
Withdrawn Article X Applications										
98-F-1885	Sithe Sentry Station (formerly Torne Valley Station)	300 827 (formerly)	Sithe Torne Valley, LLC	Ramapo/ Rockland	12/4/98	N/A	11/15/99[5] (filed) 12/14/01 (withdrawn)	6/19/00 12/29/99 Deficient	N/A	N/A
Cancelled Article X Projects										
99-F-0558	Heritage	800	Heritage, LLC	Scriba/ Oswego	4/21/99	11/1/00 (Final)	2/23/00	4/24/00 Complies	1/17/2001	N/A

ATTORNEY GENERAL'S ACTION PLAN FOR A BALANCED ELECTRIC POWER POLICY IN NEW YORK STATE

INTRODUCTION

Electric power is in the news and on everyone's mind these days, with good reason. While we usually take for granted this invisible but vital force that permeates our daily lives and provides the power without which our modern society could not exist, recent events in New York and elsewhere demand our close attention and immediate action.

As the economy has grown rapidly in New York over the last decade, so has the demand for electricity. Demand has risen so dramatically over the past several years that it is now outstripping available supply in New York, particularly in New York City and Long Island where transmission constraints require most power to be generated locally. Moreover, in New York's restructured market—where the price of power no longer reflects a regulated price, but rather a market price—the current supply/demand imbalance has caused dramatic price spikes in electricity bills. For example, Con Edison's customers saw their bills increase an average 30 percent last summer, even though it was the coolest summer in years. California's forced rolling blackouts, soaring energy prices, and threatened bankruptcy of several major utilities' have also heightened New Yorkers' concerns.

At the same time as New York confronts price spikes and potential shortages, we are faced with continuing reports of the impacts of electricity generation. Power plant emissions contribute greatly to acid rain and urban smog, which, in turn, cause tremendous damage to our health and our environment. Urban smog exacerbates asthma, which is increasing rapidly in New York City and other urban areas—especially among children. Acid rain is killing entire ecosystems in the Adirondacks and other treasured natural areas. Mercury emitted by coal-fired plants contaminates fish, and greenhouse gases such as carbon dioxide change the climate. Power plant cooling water intake systems injure fisheries upon which many New Yorkers depend.

Clearly, New York needs to find better ways to meet its electricity demands at a reasonable cost while also protecting its citizens' health and the State's natural resources. To meet growing electricity demand, the State has had to rely largely on existing power plants, many of which are old, inefficient, highly polluting, and insufficient to meet projected demand. New York policymakers would be foolhardy to ignore the lessons of California, and our own experience, in developing energy policy.

We must move now on two fronts to develop a sustainable, balanced energy policy that ensures customers a reliable and reasonably priced power supply and that preserves our environment and protects our health. We must meet our immediate short-term needs by increasing clean supply and reducing the growth in demand through conservation and efficiency. We must also secure the longer term by using electricity more efficiently and shifting our dependence on fossil fuel toward renewable sources of electricity.

For the short term, New York must plan for the summer of 2001. Summer is when the demand for power is the greatest in our region, as more air conditioning is used in response to hot weather. We must have enough power supply available downstate to meet expected demand without skyrocketing prices. The power generators the New York Power Authority ("NYPA") is placing downstate—among the cleanest and most efficient available—are a sound approach to accomplish those goals. At the same time, investments in energy efficiency must be significantly increased. The New York Independent System Operator ("NYISO") must enhance the design and operation of the state's electricity markets to avoid price spikes based on abusive market power, and to ensure the integrity of the wholesale power market. Unless these markets work competitively, deregulation cannot achieve its goals, and consumers, the economy, and the environment will suffer as windfalls are reaped by the few at the expense of the many.

For the longer term, we must address not only how much power we have available, but how that power is generated. To protect our health and natural resources, the State must move to a cleaner electricity supply and contain the ever-expanding growth of demand. Relying more on renewable energy and using electricity efficiently should also lower bills for consumers.

To assure reliable electricity at steady prices we must build new sources of electric power, expand transmission capacity to reach more existing sources of power, and create more flexible demand during peak demand periodsthrough demand-side management, conservation and more efficient consumption. We can achieve this new, balanced energy portfolio by improving the plant siting process, by enacting policies that promote clean distributed generation and the use of renewable energy

sources, and by increasing transmission capacity to allow market sited plants to serve the entire state. We must also ensure that new clean generating capacity displaces older, dirtier, and less efficient power plants.

These goals are achievable if we work together and act with care and speed. New York is one of the largest energy users in the United States, which is the largest energy user in the world. Thus, our choices can have a major influence on global as well as local energy policies and environmental impacts. The following recommendations are a first step toward a balanced strategy on electric power.

EXECUTIVE SUMMARY

The demand for electricity in New York has grown dramatically over the past several years, primarily due to a rising economy. Supply however, has not kept up, raising reliability concerns for the future. New York has also recently restructured its electric power markets, and the current supply/demand imbalance has been reflected in the price of power, sometimes leading to dramatic price volatility in electricity bills downstate. As we confront our energy needs, we must recognize the impacts of electricity generation. Power plant emissions contribute to acid rain, smog, toxic pollution and climate change, all of which have a serious deleterious impact on our health and environment. These facts raise both short-term and long-term concerns for New York about the price, reliability, and impacts of electric power. New York needs to find better ways to meet its electricity demands at a reasonable cost while also protecting its citizens' health and the State's natural resources.

RECOMMENDATIONS

The Attorney General's Bureaus of Telecommunications & Energy and Environmental Protection recommend the following measures:

A. SHORT-TERM MEASURES

Currently, New York's growing imbalance in supply and demand is greater downstate than upstate, due to the nature of transmission constraints, which make it difficult for significant power to be sent downstate. We must be sure we have enough electric power supply this summer to meet the anticipated peak demand downstate by increasing clean sources of electricity generation and by reducing demand through aggressive conservation and efficiency measures. Not only must we make sure that the lights stay on this summer, but also that there is enough supply so that electricity prices do not skyrocket.

2. *New supply is needed, particularly in downstate areas.*—Estimates of peak supply shortfall downstate in the summer of 2001 require the additional generation proposed by the New York Power Authority ("NYPA") and others.

3. *Immediate efforts to reduce demand will improve reliability, lower price and reduce the need for more supply.*—Funding for the three existing State programs that promote energy efficiency, conservation and renewable energy must be increased. The Attorney General is directing a portion of its future power plant settlement funds—totaling approximately $20 million—to the New York State Energy Research and Development Authority ("NYSERDA") for efficiency, conservation and renewable energy programs. Funding for NYPA efficiency programs should be increased immediately from its current level of $60 million annually to $160 million per year, with an emphasis on projects to reduce peak demand in New York City and Long Island. Funding for Long Island Power Authority ("LIPA") efficiency programs should be increased this spring from $32 million per year to $50 million per year. With increased funding for these demand-reducing programs, it is estimated that over 600 MW of generation capacity needs could be avoided statewide over the next 2 years.

B. LONG-TERM MEASURES

In the longer term, we must address not only how much power we have available, but how that power is generated and used. To ensure environmental protection, a reliable electricity system, and reasonable prices for electricity, we must develop policies today that (1) improve the siting process for new power generation, (2) upgrade the transmission and distribution system, (3) increase renewable energy and clean distributed generation sources, (4) protect the consumer, and (5) contain the growth of demand and protect the environment.

1. *We must increase our supply for the long term.*—The State needs to recognize that an increase in supply is necessary to keep up with demand. We need to be innovative and forward-looking in considering how to increase supply while protecting our environment.

a. *The siting process must be improved.*—The Siting Process must be improved to ensure that necessary new generating facilities come on line expeditiously, with the least possible impact on the environment and public health:

• The Legislature should require the Siting Board and New York State Department of Environmental Conservation ("DEC") to decide which siting applications merit a preference for earlier review.

• The Siting Board should designate a project manager for each application.

• The Siting Board should require applicants to file environmental permit applications with DEC before filing a siting application.

• The Siting Board should establish a 30-day time limit to negotiate voluntary stipulations.

• The Siting Board should appoint an ombudsman for each project to be a focal point of contact for community groups and to mediate disputes.

• The New York State Independent System Operator ("NYISO") should set deadlines for Transmission and Distribution Owners to contribute to system reliability impact studies.

• The PSC and the NYISO should assign responsibility for transmission system upgrades necessary for new generating capacity.

b. *New and upgraded transmission lines are needed.*—New York needs additional high voltage transmission capacity to move large quantities of power from places with surplus power to areas that currently contain limited generating capacity. For decades, transmission bottlenecks have restricted the efficient use of New York's overall existing generating capacity as well as access to supplies from out-of-state. Despite these infrastructure flaws, investment in transmission has declined significantly since 1988. Steps have been taken to establish a federally sanctioned regional transmission organization ("RTO") to address New York's transmission needs. However, whether or when such an RTO will begin operations remains uncertain. The PSC and the NYISO have the authority to begin the work needed to relieve New York's transmission bottlenecks, and should begin immediately.

c. *Renewable generation and clean distributed generation sources should be increased.*—Until recently, solar and wind generation were not economically competitive with fossil fuel power generation. New technologies for solar and wind generation, combined with increased fossil fuel costs, have narrowed the cost gap considerably. The Legislature should join New Jersey, Massachusetts, Connecticut, Texas, and many other states by adopting a Renewable Portfolio Standard ("RPS") requiring retailers of electricity to include in their portfolio of supply an increasing percentage of renewable generation.

Policies are also needed to increase clean distributed energy sources. The need for large power plants and the strain on the transmission system could be lessened by distributing small-scale generation units (*i.e.* fuel cells, wind generators, small-scale hydro, solar cells, and cogeneration facilities) that use minimally polluting technologies directly on the site where the electricity is to be used. The Legislature should (i) expand tax credits for the purchase of clean distributed generation technologies, and (ii) expand the Solar Net Metering Law to include wind and small hydro power—allowing owners of such generation to sell excess power generated back to the grid. In addition, NYPA should work with local governments across the State to install fuel cells at landfills and wastewater treatment facilities, which produce large quantities of methane that can be used to power fuel cells.

2. *The consumer must be protected during the transition to competitive markets.*

a. *The NYISO must enhance its market monitoring and price mitigation functions.*—Electricity prices must not be permitted to soar during the transition to competitive markets for this vital service. The NYISO has made significant progress toward developing competitive power markets and in monitoring the markets for potential abuses of market power. However, more needs to be done to ensure stable prices for the summer of 2001 and beyond, whenever supply and demand are severely out of balance. The NYISO must implement its proposed "automatic" mitigation, which seeks to ensure that prices reflecting potential abusive exercise of market power do not set the market-clearing price. The NYISO must also strengthen its current forward-looking market mitigation, by obtaining approval from the Federal Energy Regulatory Commission ("FERC") to order retroactive refunds when abuses of market power are timely identified. The current $1,000 per megawatt-hour cap on the price of wholesale power should be retained, and should be kept in line with any price caps in adjoining markets, until a judgment is made that New York's markets are reasonably competitive, especially during times of peak demand.

b. *Consumers must be protected from extremely volatile electricity prices while receiving necessary market price signals.*—During the transition to deregulation, utilities should bear some of the risk of high wholesale market prices with customers, rather than completely passing through such prices to consumers. This will

incentivize utilities to better manage their risk, while affording consumers price signals upon which to make decisions about electricity use.

3. *Demand must be contained over the long term and the environment must be protected.*—As the economy and population grows, so will demand. We must meet growth without increasing degradation. Aggressive measures to reduce demand, together with construction of clean and renewable power plants, will greatly increase the probability that older, highly polluting power plants will be displaced.

The NYSERDA, NYPA and LIPA programs that fund efficiency and renewable projects are not required by law. NYSERDA's funding expires in 2006, NYPA's funding is year-to-year, and LIPA's funding expires in 2004. The Legislature should mandate that these programs be funded at a higher level for at least the next 10 years. In addition, the Legislature should enact other financial incentives to reduce demand, such as exempting the most energy efficient products from sales tax.

The PSC should improve pricing and revenue signals to encourage flexible demand and conservation. Utilities should promote offers for different time-of-day rates to residential customers to encourage load shifting, and master-metered buildings in New York State should be converted to direct metering or submetering. The PSC should also consider changing the way it regulates the price of electricity distribution. If the rate structure rewarded retailers for reductions in demand, energy conservation would more likely become a priority.

State government can bring utilities into the State's energy efficiency efforts by enacting an Efficiency Portfolio Standard, requiring retail sellers of electricity to achieve certain levels of demand reductions in their service area. The Federal Government can similarly act to implement stringent minimum energy efficiency standards for appliances and other electrical products to reduce demand for electricity nationwide.

No one proposal within this report stands alone. This package of proposals recognizes the need to address both supply and demand. In so doing, the State will best promote the growth of competitive electric power markets while also protecting both consumers and the environment. Taken together, these recommendations are a balanced approach to address the State's short-term and long-term electric power needs and to lay the foundation for a sustainable energy policy for the future.

I. NEW YORK MUST ADDRESS ITS GROWING IMBALANCE IN ELECTRIC SUPPLY AND DEMAND

A. Electricity Supply and Demand are Out of Balance

The recent rapid and welcome growth in New York's economy has spurred a dramatic increase in demand for electricity. Statewide, peak demand for electricity is estimated to be increasing at an annual rate of 1.4 percent, with demand increasing in some regions at more than twice the state-wide rate.[1] Growth in generating capacity and investments in efficiency have not kept pace. Indeed, addition of new electric power sources in New York State has slowed dramatically over the last 5 years, even compared to the limited amount of capacity built between 1990 and 1995,[2] and state-mandated demand-side management investments (and their associated savings in needed generating capacity) have declined from a high of $330 million in 1993[3] to approximately $170 million in 2000.[4] This growing imbalance between supply and demand, if unaddressed, can lead only to ever-soaring electric power prices and eventual blackouts. However, increasing capacity without regard to environmental considerations, will exacerbate our state's air pollution problems.

The present facts are stark. New York State has a geographical mismatch between generating capacity and where electricity is used.[5] Physical limitations on the

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[1] *See, NYISO Installed Capacity Load Forecast Study for Summer 2001. Http: //www.nyiso.com/markets/icapinfo.html#summer—2001.*

[2] Only 308 MW of power were added between 1996–2000, compared with 3,410.7 MW added between 1990 and 1995. This data is based on NYISO registration dates for New York power plants currently operating.

[3] New York State Energy Planning Board ("NYSEPB"), New York State Energy Plan and Final Environmental Impact Statement. November 1998. p. 3–60, 3–62.

[4] State-mandated DSM Funding in 2000 came from three sources: (1) SBC; See Order Continuing and Expanding the System Benefits Charge for Public Benefit Programs, Case NO. 94-E–0952, et. al., (January 26, 2001); (2) NYPA, see NYPA press release, November 30, 2000; and (3) LIPA, see LIPA Clean Energy Initiative, May 3, 1999.

[5] New York State's total summer electric generation capacity is 35,098 MW. NYISO 2000 *Load And Capacity Data Report*, July 1, 2000, Table 111–2, p. 55. Seasonal effects change capacity levels for certain generators, resulting in a state-wide winter capacity of 36,649.8 MW. One megawatt is the amount of power required to light 10,000 100-watt light bulbs. Because demand for electricity peaks in the summer, the winter capacity has less significance for system reli-

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amount of electricity that can be transported from one part of the state to another over the existing high voltage transmission system mean that western New York has surpluses of power whereas eastern New York, particularly downstate in New York City and Long Island, are short. Moreover, additional capacity is required to ensure that the lights can be kept on even if a major generating unit or transmission line fails. These reserve levels are required to be 18 percent above the projected peak demand for electricity statewide and in given areas.

New York City is projected to have a summer 2001 peak demand of 10,535 MW,[6] up 4.6 percent from the record peak demand of 10,076 MW during the July 1999 heat wave.[7] The NYISO estimates that New York City will be a glaring 397 MW short of required capacity during the upcoming summer. Electricity supply on Long Island is only slightly better. For Long Island, the NYISO projects a summer 2001 peak demand of 4,733 MW and a capacity shortfall of 131 MW.[8]

For 2001 NYISO forecasts a 1.7 percent annual increase for New York City and a 2.3 percent annual increase for Long Island.[9] Thus, projected summer peak demand in 2002 and 2003 for both New York City and Long Island may well exceed available generating capacity unless supply and demand are quickly aligned.[10] As shown in Table 1, if current demand growth continues unchanged for the next 2 years, no more generation capacity is added, and efficiency and conservation are not improved, both New York City and Long Island risk being unable to supply sufficient power.[11]

Table 1.—Downstate New York Shortage Without More Generation Or Reduced Demand*

(MegaWatts)

Zone	2001 Zone Capacity Required	2001 Current Capacity	2001 Current Deficit	2002 Zone Capacity Required	2002 Projected Deficit	2003 Zone Capacity Required	2003 Projected Deficit
NYC	8428	8031	−397	8560	−529	8680	−649
LI	4638	4507	−131	4709	−202	4776	−269

*Source: NYISO, Power Alert: New York's Energy Crossroads, March 2001, p. 19.

In addition to these estimates, the Public Service Commission ("PSC") has identified a "statewide need for 600 MW plus per year of capacity additions to satisfy the demands of a growing economy" and "an immediate need for 300 MW [of added capacity now in New York City], and an additional 200 MW each year thereafter."[12] PSC Chairman Helmer has also stressed that New York must use effective strategies to cut demand, comparing building power plants alone to trying to clap with one hand.[13]

While electricity conservation and demand management programs could substantially reduce the amount of additional generation needed, it is clearly imperative that clean supply be increased, both for the short-term downstate, and for the long-term throughout the state. Indeed, new clean and efficient power plants, combined with aggressive demand-side management and renewable energy investments, should displace older, dirtier power plants and yield reduced emissions and increased generating capacity.

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ability concerns. The summer peak electricity demand for New York State in 2001 is projected to be 30,620 MW. *See*, NYISO Installed Capacity Load Forecast Study for Summer 2001. Http://www.nyiso.com/markets/icapinfo. html#summer 2001.

[6] NYISO February 15, 2001 *Locational Installed Capacity Requirements Study.*

[7] The power outages experienced in parts of New York City and Westchester County that began on July 6, 1999 were caused by failures in Con Edison's distribution network, not insufficiency in supply. *See, New York State Attorney General's report*, *Con Edison's July 1999 Electric Service Outages*, March 9, 2000.

[8] These estimates do not take into account the proposed NYPA generating units or additional projected capacity increases on Long Island. NYISO February 15, 2001 *Locational Installed Capacity Requirements Study. See also,* NYISO, *Power Alert: New York's Energy Crossroads*, March 2001, p. 19, and NYISO March 14, 2001 press release, *Expedited Power Plant Development & More Customer Choices Needed To Avoid California-Type Energy Crisis, Says NYISO Report.*

[9] *See*, NYISO Installed Capacity Load Forecast Study for Summer 2001. Http://www.nyiso.com/markets/icapinfo.html#summer—2001.

[10] *See*, NYISO Press Release, *New York Independent System Operator Finds That New York City Faces Electricity Shortage,* February 14, 2001. *See also,* NYISO, *Power Alert: New York's Energy Crossroads,* March 2001, p. 19.

[11] Source: NYISO, Power Alert: New York's Energy Crossroads, March 2001, p. 19.

[12] See, August 2, 2000 testimony of PSC Chairman Maureen Helmer before the Assembly Standing Committee on Energy, Http://www.dps.state. ny.us/testimony—8—2—2000.htm, p.3.

[13] See, Albany Times Union, Demand the Key to Power Supply, March 6, 2001, p. E1.

B. Supply Must be Greater than Demand to Avoid Power Outages, and Keep Electricity Prices from Skyrocketing

In competitive markets, when demand is inflexible and approaches the limits of available supply, the price paid for a product will climb dramatically. This characteristic is especially salient in the case of wholesale electricity markets, where demand currently is relatively inflexible, and where the physical properties of electrical generation and flow are such that electricity cannot be stored in any significant quantity, but is generated, transmitted, and used virtually instantaneously.[14] The amount generated and put into the transmission grid must be balanced with the amount consumed second by second, or the entire system could break down.[15] When demand threatens to outstrip supply during periods of peak use, price spikes will occur. Electricity will be less expensive if surplus capacity is sufficient not simply to keep the lights on, but to keep wholesale prices competitive.

Once a sufficient number of private sector new generation projects are approved to be brought on line, market forces can be expected to bring supply into better balance with demand, yielding greater wholesale market price stability.

Until we have more experience with market participant behavior, it is difficult to ascertain what specific amount of capacity would provide sufficient surplus to not only assure reliability but also stabilize market prices during peak demand periods. As much as 10–20 percent surplus during peak demand may be required to avoid the steep end of the price curve. The NYISO projects that by 2005, if no new generation is added in New York, "statewide prices could be expected to increase by about 14 percent from present levels", but "[i]f supply is allowed to grow . . . Statewide prices should actually decrease and could be 20–25 percent lower than if no new generation is added," resulting in statewide "savings of over $1.4 billion annually in 2005."[16] Because the mix of generator types and sizes varies in each of the 11 zones where NYISO administers market prices, the surplus capacity needed to avoid volatile prices will necessarily differ for each zone.

C. NYPA's Proposed Generators for New York City are Necessary to Meet Peak Demand for Summer 2001

For the immediate term, by the summer of 2001, we have no choice but to increase the available power downstate by at least 528 MW, *i.e.*, 397 in New York City and 131 MW in Long Island. The NYPA has received approval to construct 11 new gas turbines in New York City with a combined output of 443.5 MW, most of which are expected to be operational at the start of the upcoming summer cooling season. In addition, the Astoria No. 2 plant (a former Con Edison generator fueled by natural gas) is expected to be repowered by Orion Power Holdings, Inc. and available sometime during summer 2001, which would add 170 MW. Another 60 MW to the generating capacity in New York City is anticipated from Con Edison's planned reactivation of the Hudson Avenue No. 10 plant (Brooklyn).[17] These new NYPA and repowered units, if completed in time, should address the risk that New York City might otherwise have insufficient power supply if demand peaks at forecast levels.[18]

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[14] Buyers in other power markets, including natural gas, can ride out peak demand periods by drawing down storage supplies and avoid paying volatile spot prices.

[15] Different generation plants have vastly differing production costs, according to their size, design, operation, and fuel source. Large steam powered generators and nuclear power plants (in the 500–1,000 MW range—called "base load" units), cannot be activated quickly, nor can they rapidly adjust electricity output. Therefore, owners of such units normally offer their power into the market at relatively low prices, to ensure that it will be dispatched and they will not have to dump excess output. At the other end of the spectrum, small gas turbines (ranging from 20 to 60 MW) are designed to allow for quick startup and output adjustment and, due to their high operating costs, are most often used during peak hours. Peaking units, including gas turbines, experience greater wear and maintenance costs if run for extended periods. To recover their investment and operating expenses over a relatively limited number of unpredictable hours of use, owners of such units usually offer power at high prices.

[16] See, NYISO, *Power Alert: New York's Energy Crossroads*, March 2001, p. 9. This NYISO projection assumes that 8,600 MW would be added to New York's supply, and does not include inflation or fuel cost increases.

[17] While a number of other small-scale potential capacity additions to existing units in New York City are being pursued at various sites, it is difficult to determine with certainty which efforts will be brought on line and whether they will meet the need when demand peaks.

[18] The Attorney General supports this effort, but takes no position on the particular sites selected for the NYPA generators.

The NYPA units, which burn natural gas as a fuel, are considered relatively clean in terms of emissions[19]—they emit virtually no sulfur dioxide ("SO_2") and less nitrogen oxide ("NOx") than oil or coal-fired plants. Thus, the potential air quality impact of this supplemental generation capacity should be limited.[20] In addition, the NYPA has committed to reducing air emissions at other New York City plants so overall air emissions will not increase.[21] Each new unit is comparatively small' in scale, which should minimize impact on local communities.[22]

On Long Island, the NYPA is installing one 44 MW capacity gas turbine at the former site of Pilgrim State Hospital. In addition, Keyspan is upgrading its Holtsville unit to increase output by 5 MW, and other gas turbines that will add 35 MW more generating capacity on Long Island. A merchant generator turbine is slated for Far Rockaway with 44–50 MW of capacity. Together, these planned additions will barely satisfy the 131 MW capacity needed for Long Island reliably to meet forecast demand. Some of these new units are not expected to be operational by the May 1, 2001 start of the peak season, but instead may not be available until July 1. Even with the anticipated new generating unit upgrades and additions, Long Island electric power resources are likely to be stretched to their limit during peak demand periods this summer.

D. Current State Programs that Promote Energy Efficiency and Renewable Energy Should be Expanded

Several programs in New York State currently encourage energy efficiency and renewable energy. Most are implemented by the New York State Energy Research and Development Authority ("NYSERDA"), the NYPA, and the Long Island Power Authority ("LIPA").[23] They have proven to be highly successful and offer a good starting point for an expanded state efficiency effort.

1. The Attorney General is Directing Power Plant Settlement Funds to Supplement NYSERDA Programs

The Attorney General, through his authority to enforce Federal and state environmental protection laws, has embarked on a number of clean air initiatives. The Attorney General sued out-of-state coal-fired power plants that upgraded or expanded their old power plants without installing the pollution controls required by the Clean Air Act. The Attorney General, with the DEC, is also pursuing legal action against similar plants in New York. Recognizing the priority the people of New York have assigned to clean air and a balanced energy policy, the Attorney General is negotiating to ensure that settlements are directed to enhancing renewable energy development and efficiency.

The Attorney General is working with the NYSERDA and DEC to ensure settlement funds are spent most effectively to promote energy efficiency and renewables. The settlement funds may also be used to fund some of the transmission infrastructure needed to make available additional wind resources. While agreements-in-principal have not been finalized—and other cases are in negotiation or litigation—the lawsuits are likely to yield $20 million or more that can provide the catalyst for an additional 10–30 MW of renewable energy and perhaps 10 MW of savings through efficiency.

The Legislature Should Ensure Funding for NYSERDA Programs by Extending the System Benefits Charge

The NYSERDA's programs, under the umbrella of the New York Energy Smart program, are designed to improve energy efficiency through education, improved operations, purchases and use of energy efficiency equipment and services, and technology development and demonstration. The 38 New York Energy Smart programs, range from market transformation (*e.g.* ensuring retail stores offer efficient products

[19] Power plants emit significant quantities of pollutants, especially sulfur dioxide, nitrogen oxides, particulate matter, carbon dioxide, and mercury. These emissions contribute to acid rain and regional haze, and are dangerous to human health as well as to the health of fish and wildlife.

[20] The NYPA has stated that they will use the best available emission control technology to reduce NOx, particulate matter, sulphur dioxide and carbon monoxide emissions. In addition, the NYPA performed an analysis of the turbines' fine particulate ($PM_{2.5}$) pollution and determined the increase to be insignificant. The DEC has issued air pollution control and acid rain permits limiting emissions for each of the sites.

[21] DEC Press Release, dated January 12, 2001. The State's Department of Environmental Conservation ("DEC") and the NYPA should formalize an agreement on reduction of overall area emissions.

[22] The NYPA has also committed to noise mitigation measures at some of the new sites.

[23] The NYPA and LIPA are publicly owned not-for-profit utilities, whose programs are funded by rates charged their customers.

to their customers) to low-income assistance (*e.g.* direct installation of efficiency measures in low-income households) and renewable energy development (*e.g.* production incentives to wind farm developers).

The NYSERDA's programs are funded by the System Benefits Charge ("SBC").[24] The SBC is a small, non-bypassable charge per kilowatt-hour to all customers buying electricity transmitted and distributed by the State's investor-owned utilities. Currently, the SBC rate is just over one-tenth of one cent per kilowatt-hour and collects $150 million per year.[25] The existence of the SBC derives from a PSC Order that expires in 2006.[26] The Legislature should codify the SBC and extend it 5 years to ensure a long-term, reliable source of funding for energy efficiency and renewables. In addition, the Legislature should make permanent programs funded by the SBC that improve efficiency in low-income households.

The NYSERDA has used over $71.8 million SBC funds since 1998 to encourage efficiency and renewable power investments. These investments have resulted in estimated electric savings of 486,000 MWh annually; demand reduction of at least 125 MW; reductions to electric, fuel oil, and natural gas bills of $54 million annually; reductions to annual air emissions of 464 tons of NOx, 774 tons of SO_2, and nearly 335,000 tons of CO_2; and the creation of over one thousand jobs.[27] While the $71.8 million was paid out once, the savings are annual. Based on this experience, a one-time investment of $100 million in energy efficiency reduces consumer bills by about $75 million per year. This annual savings accumulates over the lifetime of the efficiency measure, yielding a net savings of $375 million over the first 5 years for just the first year's investment.

The NYSERDA estimates that the total effect of SBC expenditures through the summer of 2002 will reduce peak demand between 600 and 660 MW and between 1,200 and 1,300 MW through 2006.[28] These programs, so critical to New York's energy and environmental future, should be codified.

3. NYPA Should Work With its Customers to Reduce Demand by an Additional 200 MW Over the Next Two Years Beyond Its Current Goals

The NYPA currently provides about $60 million annually to its customers for demand-side management projects and recovers its costs by sharing in the electric bill savings. These projects cost taxpayers nothing to implement, but realize approximately $65 million annually in energy bill savings, and save enough energy each year to service 300,000 people, and avoid 360,000 tons of CO_2 emissions.[29] While the NYPA's demand-side management initiatives currently achieve capacity savings of between 20 and 60 MW per year,[30] significant opportunities exist for greater savings.[31] The NYPA's customers, many of which are public entities, consume over 20

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[24] In Opinion and Order Regarding Competitive Opportunities for Electric Service, Case NO. 94-E–0952, et. al., (May 20, 1996), the PSC created the SBC to mitigate the potential adverse environmental impact of restructuring the electric industry.

[25] See, Order Continuing and Expanding the System Benefits Charge for Public Benefit Programs, Case NO. 94-E–0952, et. al., (January 26, 2001), p. 12. A small percentage of the funding is administered by the utilities.

[26] Ibid.

[27] NYSERDA, New York State Energy Smart Program Evaluation and Status Report, Report to the System Benefits Charge Advisory Group. Interim Report, September 2000.

[28] NYSERDA, Proposed Operating Plan for New York Energy Smart Programs (2001–2006), February 15, 2001, pp. 2,3.

[29] The NYPA's efficiency programs have successfully reduced electricity use and electricity bills. For example, the NYPA is working with the New York City Housing Authority (NYCHA) to replace 180,000 refrigerators with more efficient varieties over 8 years. After this project is completed in 2003, NYCHA will reduce energy consumption by 103,000 MWh per year and save over $7 million annually in energy costs. Similarly, its High Efficiency Lighting Program provides energy-efficiency improvements such as new lighting and upgrades to heating, ventilation and air-conditioning systems with no up-front costs to government and educational institutions. These measures can cut up to 25 percent on electric consumption. See, Http://www.nypa.gov/html/es.htm. See also NYPA press release, November 30, 2000.

[30] The NYPA currently spends approximately $60 million per year on demand-side management ("DSM"), but information regarding the amount of generating capacity saved is unavailable. Capacity savings were estimated based on past DSM investments. Between 1990 and 1996, the NYPA spent $255 million on demand-side management programs and reported saving 84 MW (0.33 MW per million dollars spent). Between 1990 and 1997, Investor-Owned utilities spent $1,277 million on DSM and reported saving 1,377 MW (1.08 MW per million dollars spent). Thus, an annual $60 million investment could result in a capacity savings of between 20 and 60 MW per year.

[31] For example, one of the NYPA's largest customers, the Metropolitan Transportation Authority, uses approximately 1,800,000 MWh per year. By updating its lighting and signal systems and other efficiency/conservation projects, it is conservatively estimated that the MTA could re-

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percent of the State's electricity, making this Agency well situated to advance the State's need for more aggressive energy efficiency efforts. By reducing the government's demand for electricity, The NYPA can save taxpayers hundreds of millions of dollars in electricity costs. The NYPA should work with its governmental and business customers to reduce demand and increase clean distributed generation and renewable energy by at least an additional 100 MW per year over the next 2 years and commit to fund its demand-side management programs at an increased level over the next 10 years.

Because of the dual benefit of reducing demand and reducing the electricity bills of public entities, the Governor should direct all State agencies to report on energy use and recommend how to reduce both base and peak demand within 6 months. The NYPA should work closely with the State agencies to develop and implement those recommendations, including providing the financing necessary to obtain technical assistance, conducting energy audits, and purchasing and installing more efficient motors, lights, and other appliances or devices.

The NYPA should also expand its existing efficiency programs to include more local governments and school districts statewide, further reducing electricity costs for taxpayers. The Legislature should direct the NYPA to provide funding for local governments to assess their energy efficiency opportunities within 6 months (for New York City and Long Island) or 12 months (for upstate areas) and reach agreements for their implementation.

The NYPA sells approximately 40,000,000 MWh of electricity per year, much of it to government and educational institutions.[32] For the NYPA to achieve 200 MW in additional savings beyond its current program, it will need to reduce energy consumption from all of its customers by 7 percent over 2 years.[33] This would save the NYPA's government customers (i. e. taxpayers) and business customers $196,224,000 in energy costs annually.[34] The environmental gains would be commensurately large—an estimated 2.7 million tons of $C0_2$, 14,280 tons of SO_2, and 5,320 tons of NOx, would be avoided.[35] Finally, energy savings of this magnitude would reduce stress on the existing system, improving reliability.

4. The Legislature Should Direct LIPA to Increase Its Investments in Demand Side Management

Shortly after the LIPA acquired the Long Island Lighting Company, its Board of Trustees issued a Clean Energy Policy Statement that declared the LIPA would establish a Clean Energy Initiative to support energy efficiency, clean distributed generation and renewable technologies. The LIPA funded the Clean Energy Initiative at $32 million per year for 5 years and began implementation in mid-1999.[36] In light of the current demand/supply imbalance on Long Island, the Legislature should direct the LIPA to increase its funding for the Clean Energy Initiative from $32 million to at least $50 million per year for 10 years.

The LIPA's existing Clean Energy Initiative—projected to obtain 144 MW of demand-side energy capacity savings by the time it expires in 2004[37]—will not realize

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duce its electricity use by 2 percent. (The NYPA reports that they can achieve up to a 25 percent reduction in energy consumption for each efficiency project they undertake. Thus a 2 percent overall reduction is a conservative target.) This project alone could reduce peak demand in New York City—a load pocket—by at least 4 MW, saving 36,000 MWh per year and $2,520,000 in annual energy costs (based on a rate of 7 cents per kWh—the NYPA's rates vary). See NYPA 1998 Annual Report.

[32] New York Power Authority 1998 Annual Report, p. 19.

[33] The NYPA would need to achieve 320 MW savings over 2 years to meet the Attorney General's proposal, assuming the NYPA already achieves 60 MW savings per year through its existing $60 million per year program. A 7 percent reduction in electricity use = 5,600,000 MWh. 320 MW x 17,520 hours per 2 years = 5,600,000 MWh.

[34] Based on a rate of 7 cents per kWh. The NYPA's rates vary.

[35] Based on average statewide emission rates according to PSC Historical Fuel Mix and Emissions Data. Http://www.dps.state.ny.us/fuelmix.htm.

[36] The LIPA's Clean Energy Initiative offers many programs, including rebates for energy efficient products in their "EnergyWise" catalog. More than 37,000 lighting products have been ordered through the program and an additional 170,000 compact fluorescent lights have been sold in home improvement stores. Together, they represent potential electric savings of nearly $9 million and over 2,970 MWh of electricity. The LIPA's Residential Energy Affordability Partnership, a low-income energy efficiency program much like the NYSERDA's, directly installs energy efficiency measures, such as compact fluorescent lighting, refrigerators, wall and attic insulation, and programmable thermostats. The Solar Pioneer Program offers direct consumer incentives toward the installation of qualified photovoltaic systems between 250 and 10,000 watts, as well as a $3 per watt rebate for installing approved solar equipment.

[37] Estimated peak load reductions during the first year of the Clean Energy Initiative, totaled approximately 39 MW. Energy reductions resulting from the Clean Energy Initiative during 1999 were estimated to total approximately 16,000 MWh. These savings were achieved within

all of the potential for capacity savings on Long Island. A 1999 study that examined opportunities to meet expected increases in demand on Long Island found that expanded energy efficiency, distributed generation, wind power, fuel cells, and photovoltaics could yield 690 MW by 2010, including 465 MW from energy efficiency alone.[38]

If the Clean Energy Initiative were expanded to $50 million per year until 2010, as recommended, capacity savings over the next 10 years could be greater than 450 MW.[39] If the funding were increased immediately, and programs were expanded this year, an additional 30 MW could be avoided over the next 2 years and an additional 45 MW savings over the remaining 3 years of the LIPA program. Given the cost savings from efficiency programs in the past, the investment of $50 million per year would save Long Island ratepayers approximately $35 million in each succeeding year, leading to dramatic cumulative savings (perhaps $60 million after 3 years). Again, significant environmental and reliability gains can also be expected.

II. The Review Process for the Siting of New Generation Facilities Must be Streamlined

The need for new supply underscores the importance of the power plant siting process, yet significant problems in that process affect the ability to respond quickly to increased demand with increased supply. Power plants cannot simply be built whenever and wherever someone decides they would like to do so. Rather, because of their size and environmental impacts, plans to build power plants are subject to an extensive and careful state approval process. This state-mandated review has been fraught with delay and uncertainty, impeding the ability of aspiring generators to proceed as expeditiously as would be optimal. Oddly, no process exists by which to rank the relative environmental impact of the proposed power plants. To increase the supply of electrical power to meet our economy's needs while protecting human health and the environment, the process must be dramatically improved.

Ideally, the siting process should provide one-stop shopping for generators. Indeed, when the Legislature enacted Article X of the Public Service Law ("PSL") in 1992, the goal was for one entity, the New York State Board On Electric Generation Siting And the Environment ("Siting Board"), to have authority over the entire review process.[40] However, the U.S. Environmental Protection Agency ("EPA") authorizes the state DEC to issue permits under the Clean Water Act and the Clean Air Act. Since such permits are necessary before a generating facility may be built, the process does not readily fit the one-stop shopping model. Additionally, the siting of a power plant is often controversial, so the review process appropriately provides an opportunity for extensive input by interested parties. For these reasons, siting a new plant is neither easy nor quick .[41] Nevertheless, more can and must be done

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1 year of the LIPA's approval of the Clean Energy Initiative, demonstrating how quickly efficiency measures can be effective. At the end of the 5-year, $160 million program, the LIPA estimates that it will save 191,000 MWh of energy per year and avoid the need for 144 MW of capacity. See, LIPA, Clean Energy Initiative, May 3, 1999.

[38] Pace Law School Energy Project and Long Island Citizens Advisory Panel, Power Choices: 21st Century Energy Alternatives for Long Island, October 1999, p. 3.

[39] Estimate based on LIPA's current projections of 144 MW per $160 million spent over 5 years (0.9 MW per million dollars spent).

[40] Under Article X, any utility, public authority or merchant generator wishing to build a new generator in New York State with a capacity of 80 MW or more must comply with and obtain a Certificate of Environmental Compatibility and Public Need ("Certificate") from the Siting Board approving the plant's construction and operation. See also, 16 NYCRR Chapter X, Subchapter A, § 1000 *et seq*., which sets forth the Board's rules and procedures. The five permanent members of the Siting Board are the PSC chairman, who serves as the Siting Board chairman, the Commissioner of Environmental Conservation, Commissioner of Health, chairman of NYSERDA and the Commissioner of Economic Development. The Governor appoints two members of the public as "ad hoc members" for each generator application: one must reside within the judicial district and the other must be from the county where the proposed plant is to be located.

[41] Article X requires an entity seeking approval for a generating facility to file an application with the Siting Board. At least sixty (60) days before filing its application, an applicant must file a preliminary statement with the Siting Board and various offices within the PSC. An applicant must also obtain environmental air and water permits from the DEC and acceptance of its interconnection study from the NYISO. The PSC and DEC assign staff members to review the application, and each also assigns a project manager to coordinate review within their agencies.

Before filing the application, the applicant, the PSC, DEC, and others may voluntarily engage in negotiations regarding environmental and other studies needed. Once theapplicant files its Article X application with the Siting Board, the chairman of the PSC has 60 days to determine if the application is complete, or needs to be supplemented. Once the application is deemed com-

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to coordinate and expedite the process if New York is going to meet the expected increase in demand with sufficient increase in supply, while at the same time ensuring that the added capacity results in a cleaner environment. Toward that end, the Attorney General urges the following:

A. Decide Which Siting Applications Merit A Preference for Earlier Review

Currently, the Siting Board reviews each application in the order received, on a first-come first-served basis. The Siting Board does not now give a reviewing priority based on relative need for generation at the location of the proposed site or on environmental attributes. The Legislature, however, could and should direct the Siting Board and DEC to give a preference in the review process to applications for plants that:

- Are located in areas that have an acute need for new generating capacity, and thus would have the greatest incremental impact on New York's structural supply deficit;
- Repower existing plants so overall emissions are reduced and community impacts minimized, or otherwise displace electrical generation that produces greater air emissions in the same air basin;
- Achieve a lower emission rate for particulate matter, NOR, and SO_2 than legally mandated or than other proposed plants, in addition to obtaining the largest offsets (proportional to the plant size);
- Are the most efficient generators, producing the least CO_2 per MWH generated;
- Include active controls for mercury emissions;
- Are sited on former industrial "brownfields," which thus would be redeveloped, cleaned and put to use; or
- Utilize dry-cooling techniques to minimize water impacts.

Since the Siting Board reviews applications as they come in, all other things being equal the first applications will be reviewed, approved and built first. As new supply comes on line, later proposals for plants may be withdrawn. However, the later proposed plants may, in fact, be preferable from the perspective of the State's energy needs or the environment.

To ensure that the State's needs are best served by proposed plants, and to encourage the private sector to propose such plants, the Legislature should require the Siting Board to give both procedural and substantive preference to plants that meet the above criteria. A preliminary review of any application should establish whether the plant is located in an existing electricity load pocket, repowers an existing plant, and what its emissions rates are.[42] The Siting Board and DEC staff could be preferentially allocated to plants that meet the criteria listed. That alone would speed the review and approval of such plants given existing staff constraints. Similarly, the Siting Board could, in making approval decisions, give a substantive preference to plants that meet these criteria.

B. Designate a Project Manager for Each Application

The time to review a siting application could be sharply reduced if the Siting Board designated a central Project Manager to be responsible for monitoring and ensuring the progress of an application's review at *all* agencies, rather than relying on separate agency project managers.

The lack of coordination among the state agencies, especially the DEC and PSC, has often made it difficult for applicants to get clear direction to move forward. A central project manager for each application would keep the process from getting bogged down through conflicting or confusing directions.

C. Require Applicants to File Environmental Permit Applications with the DEC Before Filing a Siting Application

Initially, applicants filed siting applications and the DEC permit requests at the same time. This led to delays because DEC, subject to EPA requirements in its permit process, cannot generally decide within the Siting Board's 60-day period whether the environmental permit applications are complete. As a result, many applications were rejected by the Siting Board at the 60-day deadline as incomplete, and the process had to be restarted.

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plete, the Siting Board has 12 (12) months to decide whether to approve it, during which time the DEC and PSC jointly conduct public hearings in which expert witnesses are examined and evidence submitted. The hearing officers make specific statutory findings and recommend a decision to the Siting Board, which has the ultimate decisionmaking authority.

[42] To ease the initial screening process, the application form could require a cover page that indicates which, if any, of the preference criteria are met by the proposed plant.

Applicants should be required to submit their DEC permit requests well ahead of their siting application.[43] The aforementioned Project Manager could coordinate this "front-loading" of the approval process so that an applicant will have negotiated with the PSC and DEC, secured the required environmental permits, and performed the necessary studies prior to filing the siting application.

D. Establish a 30-Day Time Limit to Negotiate Voluntary Stipulations

The Siting Board encourages, but does not require, applicants to negotiate voluntary stipulations with state agencies and interested parties to identify the issues of public concern and the studies or analyses appropriate for the project under review.[44] This "scoping process" is intended to speed review by enabling parties to reach early agreement on which issues need to be addressed in the application, thereby reducing later objections or litigation. With no current timeframe for completion, these negotiations are often protracted—causing unnecessary delay and uncertainty. To address this problem, the scoping process should be made mandatory and should be overseen by the Project Manager, who should establish a 30-day timeframe for the parties, the DEC and PSC to negotiate stipulations. The Project Manager should clarify the details of the environmental and other reviews required by the Siting Board and DEC. Adherence to well-established and understood descriptions of the detailed studies necessary for permitting under the State Environmental Quality Review Act (SEQRA) will also result in greater clarity and expedite the process.

E. Appoint An Ombudsman For Each Project

The Siting Board should appoint an ombudsman to be a focal point of contact for community groups seeking to be involved in the siting process and to work with the Project Manager to mediate issues concerning the scope of necessary studies. Citizens often identify community and environmental concerns about which the DEC and Siting Board members are unaware. Earlier identification and mediation of the issues could speed the permitting process by avoiding the need for amended applications, supplemental hearings, and subsequent litigation.

F. Set Deadlines for Transmission and Distribution Owners to Contribute to System Reliability Impact Studies

A siting applicant must submit to the NYISO a System Reliability Impact Study ("SRIS") that identifies both the impact a new or modified plant would have on existing transmission and distribution systems, and the changes needed to accommodate the proposed additional generating capacity. NYISO approval of an SRIS is necessary.

To prepare an SRIS, an applicant needs essential technical information that only the owners of transmission and distribution systems can supply. Currently, these entities are not required to provide the information within any particular deadline. The PSC and NYISO should quickly correct this deficiency. New York transmission and distribution owners are either subject to PSC jurisdiction or are members of the NYISO. The PSC and NYISO should establish an efficient process for SRIS applicants to obtain information from transmission and distribution system owners, including the deadline by which a system owner must comply with an applicant's request for information. Additionally, formal deadlines for the NYISO to complete its required review should be set.

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[43] Underscoring the necessity for a formal rule, the Siting Board recently adopted an informal policy that it will not consider a siting application to be complete unless the DEC has proposed a draft permit.

[44] See, PSL § 163. These studies include those describing the expected environmental impact and safety of the facility, both during its construction and its operation, that identify "(i) the anticipated gaseous, liquid and solid wastes to be produced at the facility including their source, anticipated volumes, composition and temperature, and such other attributes as the board may specify and the probable level of noise during construction and operation of the facility; (ii) the treatment processes to reduce wastes to be released to the environment, the manner of disposal for wastes retained and measures for noise abatement; (iii) the anticipated volumes of wastes to be released to the environment under any operating condition of the facility, including such meteorological, hydrological and other information needed to support such estimates; (iv) conceptual architectural and engineering plans indicating compatibility of the facility with the environment; and (v) how the construction and operation of the facility, including transportation and disposal of wastes would comply with environmental health and safety standards, requirements, regulations and rules under state and municipal laws, and a statement why any variances or exceptions should be granted. . . ." PSL § 164(c).

G. Assign Responsibility for Transmission System Upgrades Necessary for New Generating Capacity

New generators may require costly upgrades or modifications of transmission system facilities to carry the increased power. Transmission facility owners and generators often disagree as to whether a transmission system reinforcement is needed to serve new capacity and which of them should bear an expense. Disputes have the potential to delay or restrict the availability of new capacity. Currently, no clear rule governs as to who should bear this responsibility.

However, between them, the PSC and NYISO have jurisdiction over all possible parties. To ensure expeditious resolution of such disputes, the PSC and NYISO should quickly decide disputes over transmission reinforcement obligations.

III. Additional High Voltage Transmission Capacity is Needed

New York must augment the network of high voltage transmission lines used to move bulk power from places with surpluses to areas where the power is needed. Major transmission bottlenecks in central New York ("Central East bottleneck"), around New York City ("In-City bottleneck") and at our borders with other states and Canada limit the amount of power that can be moved.[45] While minimizing the environmental and aesthetic impact of transmission lines, these bottlenecks must be opened.

High-voltage transmission lines enable large amounts of power to move over long distances, provide flexibility in the location of plants, and increase access to diverse sources of electricity, including sources hundreds of miles away.[46] Long distance access is especially important in New York, which has cheap hydroelectric and Canadian power sources at the extreme western and northern borders of the state.

A. Bottlenecks in New York Transmission Cut Off Access to Cheap Power

New York's transmission network contains segments that are not able at all times to carry the optimum amount of power. Each such inadequate segment forms a "bottleneck."[47] Near Utica, the transmission lines from western New York and Ontario converge with the transmission lines from the north and Quebec to form the Central East bottleneck. Whatever power is available to the west or north, Central East can pass along only 5,995 megawatts.[48] When the demand for power soars in southeastern New York during the summer, the Central East bottleneck may limit access to surplus power west and north of this bottleneck. The In-City bottleneck works similarly to set an even lower limit (4,979 megawatts)[49] on the amount of power New York City and Long Island can import from western and northern New York, Canada and plants in the Hudson Valley.

B. New York's Transmission System has been Neglected

Despite the potential for transmission upgrades to lower our electricity costs and avoid having to build new power plants, fundamental infrastructure is sorely lacking in New York. Measured in constant dollars, between 1988 and 1998 capital improvements to New York's transmission system dropped from $307.7 million per year to $90.0 million per year."[50] The Central East and In-City bottlenecks have existed for at least 20 years. Today only one major project to ease a New York transmission bottleneck is under active regulatory considerations.[51]

Building a transmission upgrade, such as a new high voltage line, is complex and expensive. Once the PSC approves a project, an applicant may then have to nego-

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[45] *See generally*, New York State Energy Planing Board, *Report on the Reliability of New York's Electric Transmission and Distribution Systems* (November 2000) (*hereinafter "Planning Board Report"*) and New York State Department of Public Service, *Analysis Of Load Pockets And Market Power In New York State, Final Report* (October 1, 1996) (*hereinafter "PSC Analysis"*).

[46] Dependence on power plants fueled by natural gas has contributed to the recent increase in the price of natural gas, which in turn has increased the wholesale price of electric power. Augmenting transmission capabilities would facilitate access to electricity generated by other sources.

[47] A transmission bottleneck resembles a section of highway carrying traffic merging from two or more other highways with the same number of lanes. As long as the traffic is light, the merge flows smoothly. But if the merging traffic is heavy, all lanes slow and movement can cease.

[48] *PSC Analysis,* p. 235. This description of power flows in the New York transmission system is highly simplified and is not intended to take into consideration numerous technical factors that make the movement of bulk power difficult.

[49] Id., p. 123.

[50] *Planning Board Report*, p. 26.

[51] The LIPA has applied to the PSC for approval of two transmission lines under Long Island Sound to Connecticut. If constructed, these new lines would ease but not eliminate both the In-City bottleneck and the constraints on importing power from New England. The PSC reviews transmission construction proposals under Article VII of the Public Service Law.

tiate or litigate with possibly hundreds of landowners for rights of way, and obtain dozens of local building permits. Uncertainty about who is responsible for transmission under deregulation and how the cost of transmission construction is to be recovered in a deregulated marketplace has undoubtedly affected decisionmaking on transmission upgrades.

C. Upgrades to New York Transmission Capacity Should not Await Approval of a Regional Transmission Organization

The Federal Energy Regulatory Commission ("FERC") has proposed the creation of disinterested Regional Transmission Organizations ("RTOs") to improve transmission capability[52] and has asked electric utilities to submit proposals for RTOs that would, *inter alia*, have authority to prepare and enforce plans for optimizing transmission systems. A disinterested RTO could weigh the interest of all, decide what transmission network upgrades are in the public interest and then enforce its decisions by ordering appropriate utilities and others to construct improvements. On January 16, 2001, the NYISO and the six private New York electric utilities submitted a joint RTO proposal requesting that the FERC designate the NYISO the RTO for New York.[53]

While an RTO is welcome, we should not wait for an RTO to be up and running before addressing New York's transmission needs. The PSC and the NYISO must immediately begin working with the transmission facility owners to assess what transmission upgrades are warranted. In particular, this joint effort should examine what can be done within the next 2 years to ease the Central East and In-City bottlenecks, and increase our ability to import power from other states and Canada. If the FERC approves the application to designate the NYISO an RTO or brings New York under another RTO, the new RTO could take over this work and not have to start from scratch.

IV. New York Should Encourage New Sources of Generation

While our electricity supply brings innumerable benefits and drives our economy, electricity generation also significantly impacts public health and the environment. Existing electricity generation in the United States produces: one-third of the nitrous oxide emissions that cause urban smog; two-thirds of the sulfur dioxide emissions that cause acid rain; one-third of the mercury emissions that poison fish and wildlife; and one-third of the greenhouse gas emissions, particularly $C0_2$, that are warming the planet.

The impacts of these problems are very severe in New York State, which is characterized by an asthma rate 2–5 times the national average, and 20 percent of Adirondack lakes too acidic to support life. Though up to 40 percent of New York's air pollution comes from sources out of state, it is essential that New York lead by example in creating a sustainable electricity policy.

Not all conventional power plants pose the same level of health and environmental hazards. Modern combined-cycle gas-fired generators, which are most of the units proposed for new generation in New York, are far more efficient than power plants built in the past, and are equipped with controls that greatly reduce emissions. To the extent that more efficient units come on line and displace older, less efficient and dirtier units, air emissions problems in New York will decrease.[54] To minimize the adverse impacts of even the cleanest fossil generation plants, alternatives such as enhanced transmission, renewable source generation, clean distributed generation, conservation and increased efficiency must have a major role in a balanced package.

A. Renewable Generation Sources Should Provide at Least an Additional 10 Percent of New York's Electricity

For many decades, New York has benefited from hydro power, a renewable source that does not release air emissions and uses no imported fossil fuels. Hydro power currently produces up to one-fifth of the electricity needs of the State. While ecological and sociological impacts limit the usefulness of further expansion of hydro

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[52] *Regional Transmission Organizations*, Order No. 2000, III FERC Stats. & Regs. ¶31,089 (1999); Order No. 2000-A, III FERC Stats. & Regs. ¶31,092 (2000).

[53] FERC, Docket No. RT01– —— 000, *Order No. 2000 Compliance Filing* (January 16, 2001). The NYPA and the LIPA supported the filing but did not join as applicants. *Id.; p. 2, fn 3.*

[54] In the short run, even the most modern gas units will likely increase total air pollutants, until the older units become too uneconomical to operate.

power, recent developments in solar and wind power generation promise new means of clean electricity generation.[55]

Commercial scale electricity generation from wind and solar (photovoltaic) sources are unlikely to come on line in significant amounts (over 100 MW) by this summer, however they can meet a significant portion of New York's electricity needs in the medium to long term, while reducing air emissions and reliance on imported fossil fuels.[56] Indeed, some argue that renewables could satisfy virtually all of New York's need for increased capacity.

New York is particularly well-suited for renewable generation. A study by the State University of New York Atmospheric Sciences Research Center concluded that solar power could significantly reduce sharp demand peaks because the state gets most of its sunlight during the same time as electricity demand peaks—hot summer days.[57] Similarly, many areas across the State have strong wind resources. It is estimated that up to 5,000 MW of electric capacity could be produced from large scale wind generation sites in New York, enough to generate about 13 million MWh, or 10 percent of the State's electricity consumption.[58]

In the past, solar and wind generation were not economically competitive with fossil fuel power generation. However, new technologies for solar and wind generation combined with increased fossil fuel costs narrow the cost gap considerably.[59] During most of the 1990's, wind energy was the world's fastest-growing energy source, expanding by 20–30 percent per year; in the last 24 months, nearly 1,000 MW of wind have been installed in the United States.[60]

The following steps should enhance use of solar and wind power to produce clean electricity for New York:

7. The Attorney General Will Use Settlement Funds to Develop Wind Power

The Attorney General's Office sued a number of out-of-state coal-fired power plants that upgraded or expanded their old power plants without installing the pollution controls required by the Clean Air Act and whose pollution significantly harmed New York State. The Attorney General has directed that a major portion of the settlement money arising from the Clean Air Act power plant enforcement cases be used as incentives to develop 10–30 MW of renewable wind generation. The Office is also pursuing legal action against similar plants in New York. These cases will likely generate tens of millions of dollars in payments in lieu of penalties that the State can use for clean air and efficiency projects.

8. The Legislature Should Enact a Renewable Portfolio Standard

The Legislature should join New Jersey, Massachusetts, Connecticut, Texas, and many other states by adopting a Renewable Portfolio Standard ("RPS"). The RPS would require retailers of electricity to include in their portfolio of supply an increasing percentage of renewable generation. This would increase demand for renewables such as wind and solar, that would, in turn, create a competitive market for supplies of renewable generation.

A bill to create an RPS has been introduced in the State Assembly.[61] The Legislature should pass, and the Governor should sign, the Assembly proposal to require 0.5 percent of all retail electric sales to come from non-hydro renewables (650,000 MWh; equivalent to about 300 MW of installed capacity, or enough to power 90,000 homes) by 2003. The percentage grows by a half-percent per year until renewables reach 6 percent of sales. Thereafter it grows by 1 percent per year until it reaches 10 percent. The bill includes a cost cap of 2.5 cents/kWh. If renewables at this price cannot be found, retailers have the option of making payments into a "Clean Elec-

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[55] Large scale hydropower can adversely affect fish and other aquatic life and can displace indigenous populations. While solar and wind power cause no air or water emissions problems, wind power can raise aesthetic concerns.

[56] Electric generators in New York State rely on fuels that originate elsewhere in the U.S. or abroad. Increasing renewable generation sources in New York State will produce jobs in-state and keep electricity expenditures in-state.

[57] New York Times, *New York Ranks Near the Top For Efficient Use of Energy*, October 21, 2000, pp. B1, B6.

[58] Bailey, B. and Marcus, M., AWS Scientific, *Wind Power Potential in New York State: Wind Resource and New Technology Assessment*, May 1996. ESEERCO Project EP 91–32, p. 36.

[59] According the U.S. Department Of Energy ("DOE"), today's cost of generating electricity from wind is about $0.05 or less per kilowatt-hour, which represents an 85 percent drop over the past 15 years. *Http://www.eren.doe.gov/wind/fags.html.*

[60] American Wind Energy Association, *The Global Wind Energy Market Report*, February 2001.

[61] *See, A. 8506-Englebright.*

tricity Fund," calculated as 2.5 cents times their RPS obligation. This fund would incentivize the development of renewable generation.

An aggressive RPS could create well over 3,000 MW of renewable generation at little to no additional cost to consumers. For example, a recent study of Massachusetts' RPS (similar to what the Attorney General recommends for New York) found that it would add only 0.4 percent to consumer bills by 2003, rising to 2.2 percent in 2012.[62] An Iowa study—which assumed that the cost of fossil fuels would rise, while wind's costs would decline—showed customers could save $300 million over a 25-year period if the state met 10 percent of its electric demand through wind generation.[63]

Much of the renewable supply needs in New York could be met with wind power, providing significant environmental and economic benefits. It is estimated that for every 100 MW of wind development about $1 million is generated in property tax revenue. New York could see 2,000 MW of wind power by 2010 with an aggressive RPS and financial incentives, generating $20 million annually in tax revenues to rural communities. In addition, since wind farms are generally located on privately owned land, the development of 2,000 MW in New York means annual payments of approximately $4 million to farm and forest landowners.[64]

The reduced emissions of pollution and greenhouse gases resulting from wind power is significant. A single 1.65 MW wind turbine will each year displace emissions of 2,161 tons of CO_2, 11 tons of SO_2, and 4 tons of NON, based on the New York State average utility fuel mix.[65]

B. Policies are Needed to Increase Clean Distributed Energy Sources

The need for large power plants could be lessened by distributing small-scale generation units that use minimally polluting technologies directly on the site where the electricity is to be used. Electric power can be efficiently generated at small-scale facilities located on or near the consumer's property. Generation options include fuel cells, wind generators, small-scale hydro, solar cells, and cogeneration facilities that combine heating and cooling with electric generation. Because distributed generation facilities may not always provide the exact amount of power needed, the facility is usually connected to the electric power grid. The grid can provide additional power if the facilities run short, or can take the excess power generated. To the extent that local sources of electricity reduce the demand placed on traditional generating plants, they can reduce both (i) the need to build new power plants, and (ii) the wholesale market scarcity conditions that produce price volatility.

Distributed generation's smaller scale often enables new sources of power to be obtained in less time than with conventional power plants. Another advantage is the greater diversity of generation sources, including renewables such as sunlight and wind, decreasing dependency on fossil fuels. As demonstrated by the current rise in natural gas and oil prices, excessive reliance on fossil fuels subjects New York to risk of fuel shortages and cost volatility. Distributed generation also avoids further strain on the transmission and distribution system.

Many forms of distributed generation are also environmentally cleaner than conventional power plants.[66] Moreover, their smaller scale can minimize the impact on neighborhoods and open space. However, uncontrolled diesel generators—sometimes used for distributed peak supply—emit many times the pollution of modern, large-scale power plants or any form of renewable generation. Thus, public policies encouraging distributed generation must not include incentives for environmentally detrimental onsite generation facilities.[67]

If more commercial, industrial and multi-family residential buildings installed modern onsite generation facilities, the balance between supply and demand in tight regions such as downstate New York could be improved, reducing the need to con-

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[62] Massachusetts Division of Energy Resources., Massachusetts Renewable Portfolio Standard Cost Analysis Report. December 21, 2000, p. 37.

[63] Wind, Thomas, Wind Utility Consulting, The Electric Price Impact of an RPS in Iowa, May 1, 2000.

[64] Estimated benefits according to American Wind Energy Association RPS Fact Sheet, Http://www. awea.org/pubs/factsheets/nyrps001.pdf.

[65] Assumes wind turbine generates electricity 30 percent of the year. Historical fuel mix data and emission rates according to the DPS at Http://www.dps.state.ny.us/fuelmix.htm.

[66] Wind and solar power are cleaner. Fuel cells that operate on hydrogen fuel emit only water vapor. Other fuel cells use natural gas, and thus emit carbon dioxide.

[67] For example, LIPA's recent action to promote the use of onsite back-up generation does not differentiate between clean onsite generation and diesel generators. This action should be revisited to ensure that financial incentives to use diesel generators are removed. See, LIPA Supplemental Service Tariff. *Http://www.lipower.ore/supservtalkvoints.html.*

struct large new power plants or transmission lines. In the past, many onsite generators did not economically compete with traditional sources of electricity. However, recent technological advances have lowered the costs of distributed generation. In addition, the transition to wholesale market pricing and the ability of distributed generation to shave peak demand levels (thereby relieving all power buyers from prices set at the steepest part of the supply/demand curve) further increase the relative economic benefit of distributed generation.[68]

The following policies should reduce barriers to, and promote additional distributed generation:

1. The Legislature Should Offer Financial Incentives to Develop Clean Distributed Generation. The NYSERDA should provide low-cost loans to finance the investment necessary to install onsite facilities, and the Legislature should expand New York State's tax credit for residential solar power systems to clean distributed technologies such as fuel cells, wind, and small hydro power projects.[69] Government incentives are necessary to jump-start development of supplemental electricity generation in New York. If the initial investment barriers are reduced, many distributed generation units could be installed in time to help meet New York's electricity needs for 2002.

2. The Legislature Should Expand the Solar Net Metering Law to Include Wind and Small Hydro Power.—The Legislature should expand the Solar Net Metering Law (Public Service Law Section 66-j) to include wind and hydro power. The New York State Legislature enacted the net metering law in 1997, allowing customers who install solar power to use excess electricity produced by the solar panels to spin the electricity meter backwards, effectively banking the electricity until it is needed by the customer. This provides the customer with full retail value for all electricity produced. In its current form, the net metering law applies only to facilities powered by solar generation. Of the thirty states with net metering opportunities, New York is the only state where small wind generation systems are ineligible.[70]

3. The PSC Should Eliminate Unjustifiable Barriers to Clean Distributed Generation.—Distributed generation facilities typically require connection to the utility grid. Utilities therefore need to maintain technical safeguards to prevent distributed generation from adversely affecting the transmission system. Formerly, utilities imposed burdensome insurance requirements on independent generators seeking to connect to the power grid. The PSC recently reviewed such tariff conditions, and adopted improved interconnection standards designed to lower this and similar barriers.[71] However, insurance is still required for solar power systems that are netmetered. The PSC should removes this existing barrier and the NYSERDA should provide low-cost insurance or bond coverage to meet utility interconnection requirements. Furthermore, the PSC should review utility policies and practices to ensure that any unjustifiable barriers to distributed generation are eliminated.

4. NYPA Should Work With Local Governments to Install Fuel Cells at Landfills and Wastewater Treatment Facilities.—The NYPA should build on its success with fuel cells and work more aggressively with local governments to install them, particularly local governments in load pockets such as New York City and Long Island. Landfills and wastewater treatment plants produce large quantities of methane, which can be used to power fuel ells to generate electricity. If not used to generate power, the gas is either flared or released, significantly contributing to climate change.

In 1998, the NYPA and the EPA installed the world's first commercial fuel cell powered by waste gas, located at the Westchester County Wastewater Treatment Plant in Yonkers. In its first year, the 200 kilowatt fuel cell converted over 20 tons of waste gas into over 1.2 million kWh of electricity.[72] The NYPA has also installed fuel cells at NYPD's Central Park Station and North Central Bronx Hospital, both of which run on natural gas.

Other prospects for fuel cells have not materialized. The New York City Department of Environmental Protection ("DEP") has estimated that it flares or releases enough anaerobic digester gas at its 14 wastewater treatment facilities to fuel be-

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[68] When customers are billed on a real-time basis, such that their bills reflect the power used during peak and off-peak hours, the economic value of solar generation will be maximized, as it is most productive during periods when demand and market prices are highest.

[69] New York State residents can claim a state income tax credit of 25 percent on the cost of their Photovoltaic system, up to a maximum credit of $3,750.

[70] American Wind Energy Association. Http://www.awea.org/smallwind/newyork.html.

[71] *See, New York State Standardized Interconnection Requirements, Application Process, Contract & Application Forms For New Distributed Generators, 300 Kilo Volt-Amperes Or Less, Connected In Parallel With Radial Distribution Lines*, issued November 9, 2000.

[72] March 23, 1999 EPA press release. Http://www.epa.gov/nheerl/ordpr/1999/pr032399.pdf.

tween 15 and 25 fuel cells.[73] But a proposal to install two NYPA fuel cells at one of DEP's wastewater facilities did not move forward largely because of the high cost of fuel cells, which are not yet commercially available.[74] The myriad environmental benefits of fuel cells, and the improved reliability to the grid resulting from distributed generation, must not be overlooked in cost/benefit analyses. To fully realize the potential of fuel cells, the NYPA should seek new opportunities for fuel cell installation across the State, and offer attractive financing to its local government partners to ensure the projects are implemented.[75]

V. Power Prices Must Not Be Permitted To Skyrocket During the Transition to Competitive Markets

A. New York Wholesale Power Markets Must be Significantly Reformed

Since New York's wholesale power markets began operating in November 1999, significant flaws in the design of these markets have been identified. The markets are not fully competitive at all times in all locations, and thus the opportunity to exercise abusive market power often arises. When improper market power is exercised, electricity prices can suddenly rise to noncompetitive and, indeed, stratospheric, levels. This creates windfalls for generators, as well as unreasonably high bills for energy purchasers. It also impedes the development of truly competitive markets. All possible means must be used to ensure competitive pricing in the NYISO's markets, thwart the abusive exercise of market power, and provide redress for purchasers when market power leads to noncompetitive pricing.

1. NYISO Background

In January 1999, independent power generators, utilities, public authorities and others interested in competitive electricity markets and open access to power transmission requested from the FERC authority to create an "independent system operator" to manage New York's high-voltage transmission grid, operate competitive short-term markets for power, and undertake other tasks essential to establishing a competitive wholesale market for electricity.[76] The NYISO began operations in November 1999.

Today the NYISO manages the transmission grid that moves bulk power around New York, and operates the short-term Day Ahead ("DAM") and Real Time ("RTM") markets that together supply half the power used each day in the state. (The other half is supplied through bilateral contracts between generators and users.) On a typical day, the DAM accounts for about 45 percent of the total power used in New York, while the RTM typically accounts for 5 percent of the power. The DAM and RTM determine the price per megawatt-hour to be paid for wholesale power and the order in which generating plants will be scheduled to run. In highly simplified terms, the NYISO accepts confidential bids stating how much power each utility or other electricity retailer[77] wishes to purchase during each hour of the next day (in the DAM). Simultaneously, each power supplier submits confidential offers stating for each generating plant it owns how much power at a given price it is willing to provide. The NYISO, using complex software, totals the bids and ranks the offers in ascending price order. The most expensive offer that must be scheduled to run to provide the total amount of power requested for a given hour sets the price per megawatt-hour paid to all suppliers for power delivered during that time (referred to as "the market clearing price").[78] The RTM operates similarly."[79]

NYISO membership today consists of private generators, utilities, public authorities, power marketers, representatives of commercial and industrial customers, consumer advocates and others, as well as a paid professional staff. A 10-member

[73] February 15, 2001 conversation between OAG Policy Analyst Tom Congdon and Energy, Air and Laboratory Services Division Chief Fred Sachs, DEP Bureau of Wastewater Treatment.

[74] Ibid. DEP 's electric bill would have increased significantly to repay the NYPA for the cost of the fuel cells. The fuel cells installed at Yonkers Wastewater Treatment Plant and the North Bronx Hospital were subsidized by the DOE.

[75] As with other NYPA efficiency and renewable programs, these fuel cells would be financed from the NYPA's existing rate revenue.

[76] FERC approval was required because the FERC regulates interstate transmission of power and has mandated open access to transmission services.

[77] In New York, independent electricity supply businesses, termed "energy service companies" or "ESCOs," may compete with traditional utilities for customers.

[78] Alternatives to market clearing prices to set wholesale electricity prices have been proposed. One approach is to pay each seller its asking price, rather than pay all sellers the highest offer taken. Other proposals would peg each offer price to actual costs.

[79] The NYISO also operates competitive markets for generating reserves and other services related to supplying electricity, and monitors the power markets to ensure that they operate competitively.

Board of Directors sets policy for the professional staff and determines the actions the NYISO will take in its relations with the FERC and other government agencies. By NYISO rule, Board members must be disinterested and may not have a financial interest in any aspect of the electric power industry.

A NYISO Management Committee and two other NYISO committees discuss issues and propose actions to the NYISO Board of Directors. The FERC exercises regulatory authority over the NYISO and other independent system operators. The NYISO has sought the FERC's approval of numerous proposed changes in the way NYISO operates and exercises its authority. While many of the changes involve technical and "housekeeping" matters, several have addressed competition problems identified by the NYISO staffs Market Monitoring Unit ("MMU"). Most notable are the NYISO's June 30, 2000 petition for a $1,000 per megawatt-hour cap on the price of power in the short term markets, and its March 27, 2000 petition for a cap on the price of reserve generation capacity. The FERC approved the power price cap petition on July 26, 2000 and the reserves price cap petition on May 31, 2000. These and other FERC-approved changes in NYISO operations have moderated but not eliminated the potential for exercise of market power.[80]

2. The NYISO Must Ensure That Energy Sellers Cannot Unfairly Exercise Market Power to Raise Electricity Prices

At least two instances have been identified in which the NYISO markets were not competitive in 2000. During certain hours of high demand on June 26, 2000, the price of power in the Day Ahead Market spiked to $1,000 per megawatt-hour due to bidding practices leading to excessively high prices. This behavior cost energy buyers an estimated $100 million in excessive power prices that day. The NYISO has also identified instances of market power in the sale of generating capacity reserves from January to March 2000. The Attorney General has urged the FERC, which has jurisdiction over power transmission and independent system operators, to provide the NYISO the authority it needs to address such exercises of market power.[81]

The NYISO must ensure that design and operational flaws are addressed quickly, before the demand for electricity rises with the start of the summer cooling season in May 2001. In particular, the NYISO must enhance its ability to identify and correct noncompetitive prices and practices. The Attorney General supports a three part approach: (1) "automatic mitigation" of DAM prices as soon as possible; (2) strengthening after-the-fact market monitoring, including retroactive mitigation of noncompetitive prices; and (3) retaining the $1,000 cap on power prices.

Finally, the NYISO should follow through on plans to open its markets to increased participation by non-generators and non-load serving entities, so as to enhance competition and liquidity in the power markets.

a. Automatic Mitigation Must be Implemented Quickly

On February 20, 2001, the NYISO Board voted to extend its current forward looking market mitigation to the DAM in a way that is intended to prevent the exercise of market power until competition fully takes hold.[82] To effect this mitigation, also referred to as a "circuit breaker," the NYISO will reprogram the software it uses to operate its power markets so that the software automatically analyzes bids before they set the market-clearing price. If the analysis indicates a potential exercise of market power in the DAM, the suspect power prices will be replaced with competitive prices. The NYISO expects to implement the software changes before the 2001 summer cooling season, i.e., by May 2001.[83]

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[80] The NYISO professional staff has taken the position that the NYISO Board does not need to seek the FERC's approval of every operational change intended to strengthen the NYISO's efforts to deter uncompetitive actions. Not all NYISO members agree.

[81] October 31, 2000 Letter from Attorney General Eliot Spitzer to FERC Chairman James J. Hoecker.

[82] New York Independent System Operator Approves Automated Process For Reviewing Supply Bids—Measure Enhances NYISO's Ability To Prevent Market Abuse—, NYISO press release (February 22, 2001).

[83] Automatic mitigation will use as triggering levels the price threshold values in the NYISO's current forward-looking market monitoring procedures. Each day NYISO software will automatically review Day Ahead offers for evidence of market power and recompute excessive offers before they can set the market clearing price. In grossly simplified form, automatic mitigation works as follows: if upon matching offers with bids, the Day Ahead Market in any zone would yield a market clearing price that exceeded $150 per megawatt-hour, a price analysis will be triggered. Depending on where in New York the over-$150 market clearing price appeared, the NYISO software would examine every offer in any zone in the state deemed competitively rel-

While agreeing with the general framework, some have objected that the NYISO automatic mitigation would still allow considerable exercise of market power, primarily because the triggering levels in the NYISO proposal are too high. Among other changes, the objectors would lower the initial trigger to $100 per megawatt-hour and the market comparison triggers to $50 per megawatt-hour. Lowering the triggers could more accurately capture the times and places in which market power may be exercised. For this reason, the Attorney General supports lower thresholds for automatic mitigation.

While lowering the triggers would make automatic mitigation more effective, such a refinement would likely constitute a material change from the current NYISO market monitoring standards and thus might require the FERC's authorization before it could be implemented, with the concomitant risk of delay or denial.[84]

Another objection to the current automatic mitigation is that it does not apply to the RTM. The NYISO staff's explanation is that the logistics of the RTM operate on such a short timeframe that it is not practical to design an automatic mitigation mechanism for the RTM. Experience with Day Ahead mitigation may suggest ways to make automatic mitigation of the RTM practical. Deployment of Day Ahead automatic mitigation should not be delayed, but the NYISO should continue to evaluate capability for automatic mitigation of the RTM as well.

b. Existing Forward-Looking Market Monitoring Must be Strengthened

i. The NYISO's Market Monitoring Triggers Must be Refined.—The NYISO staff has a 14-member Market Monitoring Unit ("MMU") that examines the offers, bids and market clearing prices in the various electricity markets to determine whether noncompetitive prices or practices have occurred. Once it identifies such a price or practice, the MMU takes actions to prevent a repetition. The major difference between automatic mitigation and the current MMU efforts is that the MMU addresses prices and practices *after* the market has cleared; it does not prevent the *initial* exaction of noncompetitive prices. As part of its effort, the MMU compares the market clearing prices in the DAM and RTM to numerical triggers. If a market clearing price exceeds a trigger, the MMU then employs procedures to identify potential noncompetitive behavior and fashion forward-looking means for preventing its repetition.

Because the current MMU threshold values may not identify accurately enough all situations in which competition is impaired, the NYISO should seek from the FERC, and the FERC should grant, authority for the NYISO to lower these triggers. This refinement would increase the NYISO's ability to discern noncompetitive market behavior leading to noncompetitive prices. It could also lead to the identification of loopholes in NYISO rules that the current market monitoring protocol does not detect.

ii. Authority for Retroactive Mitigation Must be Obtained.—The FERC has not authorized the NYISO to recapture excess profits obtained through the exercise of market power. When the MMU identifies a noncompetitive pricing or practice, the NYISO can at most order the offending act or practice to cease prospectively. Thus, currently, one exercising market power in a NYISO market gets at least "one bite at the apple," risking nothing more than being admonished not to do it again. Such limited enforcement capability is inadequate. Noncompetitive market conditions for even a few hours on a single day can exact large sums in excessive prices.

Adding automatic mitigation to the MMU's tools and tightening the MMU's surveillance triggers will reduce the likelihood of noncompetitive prices, but no preventive system is perfect. The NYISO needs the authority to recover excessive noncompetitive profits if and when market power slips past the NYISO's preventive measures.

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evant to the affected zone, and compare it to a predetermined "reference price" associated with the generating facility whose output is represented by each offer. If the difference between any offer and its associated reference price exceeds $100, the NYISO software would substitute the reference price for each offer and recompute a "reference market clearing price" for each affected zone. This recomputed reference market clearing price hen would be compared to the initial "unanalyzed" market clearing price in each affected zone. If the difference between the two market clearing prices is more than $100 in any zone, the NYISO software would then automatically set aside any offer in the affected zone that was initially greater than $100 above its reference price and replace that offer's price with the reference price. These recomputed offers would then be used in the calculation of the official market clearing price for that zone.

[84] Others object to the idea of automatic mitigation as an unnecessary tampering with competitive markets. The markets, however, are not always competitive. Automatic mitigation should prevent excessive prices from occurring in the first instance.

As the Attorney General urged in the October 31 letter to FERC Chairman Hoecker, the NYISO should request from the FERC, and the FERC should grant, authority retroactively to mitigate noncompetitive prices identified in the course of its forward-looking market monitoring. The window for identification of possible exercises of market power and for retroactive refunds should be short, both to maximize the value of refunds as a deterrent and to provide the wholesale power market with certainty. Both consumers and wholesale market participants have an interest in the speedy resolution of market monitoring inquiries, as well as in not being forced to pay noncompetitive prices for electric power.

iii. The Current $1,000 Per Megawatt Hour Price Cap Must be Retained.—A $1,000 per megawatt-hour cap on the price of wholesale power currently exists in the NYISO's Day Ahead Market and Real Time Market, as well as in relevant markets in the adjacent New England and PJM power pools.[85] The NYISO should ask the FERC, and the FERC should agree, to retain this cap until the wholesale electric market in New York is fully competitive. While NYISO market monitoring can be the first line of defense against market power, and retroactive mitigation may recover excess profits exacted by market power, there may be circumstances in which neither is able to prevent extreme wholesale power price spikes. The current NYISO price cap thus provides a crucial final safeguard against extreme price spikes. It should be retained until a change in circumstances justifies modifying or retiring it.

To be effective, a price cap must be compatible with conditions in neighboring power pools. Otherwise, power suppliers may have a financial incentive to sell preferentially into the power pool with the highest price cap. Today, both power pools neighboring New York have a $1,000 per megawatt-hour price cap. This, compatibility of price caps should be maintained.

iv. The NYISO Should Implement Virtual Bidding to Expand Competition.—Today the only parties that may buy or sell electricity through the NYISO are utilities and other entities that provide retail service to end users, and those who own or control generating plants. This limits the number of participants in the NYISO markets. Competition would be enhanced if power marketers, brokers and others not directly involved in generating or retailing electricity could buy and sell power through the NYISO markets. In addition to increasing competition, market participation by new types of parties would add liquidity to these markets by increasing the number of ways that power purchases can be contracted for and financed. The downside of opening the NYISO markets to new classes of participants is the increased potential for gaming the markets, especially during times of tight electricity supply.

The NYISO currently plans to implement power trading by parties other than generators and retailers, participation termed "virtual bidding," by November 1, 2001.[86] The NYISO's explanation for the delay in instituting virtual bidding is that it needs to correct flaws in its current operating procedures and to develop appropriate software before adding virtual bidding to an already complex system.[87] FERC has accepted the NYISO's explanation.[88] The NYISO should develop the necessary software and make the operational improvements needed to implement virtual bidding as soon as practicable. At the same time, the NYISO should address the increased complexity that virtual bidding will add to its markets and strengthen its market monitoring capability to accommodate the additional market surveillance that will be needed.

c. Exposure to Volatile Prices Must be Minimized Without Shielding Customers From Market Price Signals

We have seen in New York that highly volatile wholesale electricity prices can accompany the transition from regulated monopoly to competitive commodity markets, especially during times when supply is limited and demand irreducible. During the

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[85] The current price cap is set to expire on April 30, 2001 unless extended by the FERC upon request.

[86] See, e.g., NYISO, New York Independent System Operator, Inc.'s Report on the Implementation of Virtual Bidding and Zonal Price-Capped Load Bidding in Docket No. *EL00–90–000,*—— *FERC* ¶———— (February 2, 2001), p. 6.

[87] Id., p. 4.

[88] Some have protested to FERC that the NYISO's implementation of virtual bidding is taking too long. FERC rejected the initial protests as inconsistent with the prudent development of the NYISO's operations. FERC Docket No. EL00–90–000, Order On Complaint, *Morgan Stanley Capital Group, Inc.* v. *New York Independent System Operator, Inc.*, 93 FERC ¶ 61,107 (October 5, 2000). Certain parties have renewed their protests. *See, e.g.*, Morgan Stanley Capital Group, Inc., Motion For Immediate Commission Action Regarding Virtual Bidding Implementation Schedule, Docket No. E100–90–000 (March 5, 2001).

summer of 2000, Con Edison's customers experienced electricity rates 30 percent higher than during the comparable period in 1999, despite cooler weather in 2000 resulting in lower peak usage levels than usual. In addition to the increased cost of oil and natural gas, an almost 12-month outage at Con Edison's Indian Point 2 nuclear plant tightened supply in the downstate markets significantly, leading to higher wholesale prices in times of high demand[89] If New York's summer weather in 2001 or 2002 is normal or hotter, wholesale price spikes remain a threat.

Con Edison's and Orange & Rockland's current rate structures permit them to pass through to their customers nearly all of the commodity cost of electricity, no matter how high.[90] Con Edison is a multi-billion dollar company serving over three million customers, and therefore has much more bargaining power than any of its residential or small business customers to control price volatility through negotiation of long-term contracts with generators, and through other hedges that manage risk.[91] To give an electric utility like Con Edison an incentive to hedge its risks in the wholesale market, the company must pay the price for bad market decisions.

Recent experience in California demonstrates that completely insulating consumers from wholesale electricity prices can financially devastate the affected utilities, especially if, as in California, they must buy all their energy requirements in the spot market. While the New York market rules permit and encourage bilateral contracts and other hedging strategies, we cannot ignore the warning of the California experience.

As electric power supplies increase, customers ought gradually to receive more complete price signals to encourage more flexible and efficient demand.[92] Until we reach that point, however, we must ensure price stability for customers during volatile markets. The complete pass-through of energy costs, such as Con Edison and Orange & Rockland currently enjoy, must be modified. The PSC should cap Con Edison's rates once power prices reach a certain per kilowatt hour level. Below that level, customers would pay the passed-through market price. Above that level, Con Edison would swallow a substantial portion of the difference. Such billing would limit customers' exposure to market volatility extremes while sending them appropriate price signals reflecting the market price of the electricity they use. At the same time, Con Edison would have an incentive to employ long-term supply contracts and other hedges to moderate the cost of power should market prices exceed the rate ceiling established.[93]

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[89] The Attorney General has taken NYISO analyses and examined the impact of the Indian Point 2 outage on the price of power in the wholesale markets. The unavailability of Indian Point 2's 941 MW capacity output from February 16, 2000 through early January 2001 required the NYISO to rely upon more expensive generators during times of greater demand, and thus increased the market clearing price for peak-hour power purchased by Con Edison. Indeed, it increased the market price throughout the state. The Attorney General, in a motion filed with the PSC has estimated that the outage cost Con Edison's customers $176.5 million and urged that Con Edison be required to reimburse customers for this increase in wholesale power costs. See, PSC Case 00–E–0612—Proceeding on Motion of the Commission to Investigate the Forced Outage at Consolidated Edison Company of New York, Inc.'s Indian Point No. 2 Nuclear Generating Facility, December 4, 2000 Motion by New York State Attorney General Eliot Spitzer For Complete Quantification Of Consolidated Edison's Liability For Alleged Imprudent Management Of Its Indian Point 2 Nuclear Plant.

[90] Con Edison passes through to its electric customers 90 percent of the difference between the company's forecasted and actual purchased power costs. (Con Edison, P.S.C. No. 9 Electricity, Leaf No. 163, Effective September 11, 2000) Central Hudson Gas & Electric's rates permit an automatic pass-through, but this is ameliorated by the utility's long term supply contracts with the companies that purchased their former generation units. Rochester Gas & Electric has not yet progressed as far as the other utilities toward restructuring, and currently retains most of its own generating plants. LIPA, as a public authority, is not regulated, but instead sets its own rates. LIPA thus ultimately recovers from its customers any increased cost of power it purchases from generators, although the lack of automatic pass-through likely delays the impact.

[91] Other New York utilities, such as Niagara Mohawk Power Corporation and New York State Electric & Gas Corp. currently operate under fixed consumer retail rates, and have been able to obtain long-term supply contracts.

[92] Evidence shows that customers react to price signals by reducing demand, and often do so relatively quickly. For example, according to Hal R. Varian, economics professor and Dean at the University of California at Berkeley, when the electric bills of San Diego residents more than doubled last summer, power consumption dropped 5 percent within a few weeks. See, *The New York Times,* January 11, 2001, p. C2.

[93] The Attorney General opposes alternative bill mitigation proposals that would not accomplish these goals. One. proposal would permit customers to postpone payment of that portion of their electric bills representing extremely high levels, and make up the difference during months when prices are below a certain threshold. This proposal would still expose customers to the full cost of power, albeit leveled over a year's bills. Others have proposed to keep rates

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VI. Demand for Electricity Must be Reduced to Minimize the Environmental and, Public Health Impacts of Generation and to Assure Market Competition and Stable Prices

Aggressive measures to reduce demand, together with construction of clean and renewable power plants, will greatly reduce the environmental and public health impacts of electricity generation and foster competitive markets and lower electricity bills. Reducing electricity use avoids the need for existing power plants to produce that amount of electricity, and the corresponding emissions. Over the long-term, an energy policy is sustainable only if it includes environmental factors among its objectives. When new, more efficient power plants start supplying electricity to the grid, the need for existing, dirtier power plants should be reduced. But only if demand is simultaneously reduced while clean supply is increased will the State ensure a net gain for the environment and for the consumer."[94]

What appears like a small action to reduce demand can have a large impact. For example, replacing just one incandescent light bulb with a compact fluorescent bulb (which uses 70 percent less energy to produce the same amount of light) can save a consumer over $38, save 337 kWh of electricity, and avoid over 300 pounds of the greenhouse gas CO_2 in 3 years. If all 6,766,000 households in New York State replaced just one bulb, over $260 million would be saved, 2.2 billion kWh would be saved (more than the electricity generated at an 100 MW power plant), and over one million tons of CO_2 emissions would be avoided in 3 years. (See Appendix.)

New York already ranks as the second most efficient state in per capita energy use nationwide (in large part due to the natural efficiency of apartment living).[95] Nonetheless, opportunities for improved efficiency and conservation abound. A 1997 study claims that cost-effective investments in energy-efficient technologies could reduce New York's electricity use by 34 percent.[96]

New York State has several programs to compensate for market barriers that discourage energy efficiency. But existing programs are not sufficient to create the environmentally sound, reliable, and balanced energy portfolio that is in the State's best interests. The Attorney General recommends significantly expanding these programs (see Section I.D.). The Attorney General is similarly using his legal authority to direct litigation settlement funds to energy efficiency and renewable power investments. In addition, utility portfolio standards would over the long-term lead to significant savings—perhaps 1,000 MW through efficiency and 3,000 MW through renewable energy—that will shift New York's energy policy to a more sustainable framework.

Together, the funding proposals below would direct approximately an additional $120 million per year (on top of existing programs) to energy efficiency, conservation, and renewable energy programs in New York State. (See table 2.) This expansion could result in a savings of over 600 MW over the next 2 years—an amount sufficient to avoid capacity shortfalls—and a necessity if New York State's electric grid is to maintain reliability and to minimize price spikes. At the same time, these energy savings will avoid enormous quantities of harmful pollutants—millions of tons of NOx, SO_2, and CO_2 lead to substantial consumer savings.

If New York's funding levels for efficiency and renewables were increased from the current level of $242 million per year to $360 million per year, as recommended, New York will still spend less per capita than many other states in the Northeast. (See Table 3.)

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at or below a certain pre-determined level throughout the year by offsetting higher summer peak market price levels with a variety of customer credits otherwise owed by Con Edison. Since customers are entitled to these rate offsets whether or not power prices rise, this approach to rate mitigation is unsatisfactory, and would conceal from customers what is occurring in the power market.

[94] If the growth in demand is not reduced, there will be a need for both the existing power supply and new capacity. The addition of even the cleanest natural gas plant will result in a net addition of emissions if the State does not ensure that older, dirtier plants are displaced by cleaner new ones.

[95] American Council for an Energy Efficient Economy. National and State Energy Use and Carbon Emissions Trends. September 2000, Http://www.aceee.org/pubs/e001.pdf.

[96] American Council for an Energy Efficient Economy. Energy Efficiency and Economic Development in New York, New Jersey and Pennsylvania. February 1997.

Table 2.—Summary of Attorney General's Proposals to Expand Funding for Current Efficiency and Renewable Programs

Programs	Current Funding (in millions of dollars)	Estimated Annual Capacity Savings from Current Funding	Proposed Funding Level	Estimated Annual Capacity Savings from Proposed Funding
System Benefits Charge (NYSERDA's EnergySmart Program)[1].	$150 million per year until 2005.	200 MW	$150 million per year until 2010.	200 MW
NYPA Energy Services[2]	$60 million per year	20–60 MW	$160 million per year until 2010.	53–160 MW
LIPA Clean Energy Initiative[3]	$32 million per year until 2004.	28 MW	$50 million per year until 2010.	45 MW
Power Plant Settlements	$0	0 MW	Approximately $20 million.	20–40 MW
TOTAL	$242 million per year	248–288 MW	$360 million per year plus settlement funds.	318–445 MW

[1] Estimated savings from the funding proposals are based upon NYSERDA projections, see SBC Proposed Operating Plan For New York EnergySmart Programs (2001–2006) February 15, 2001, p. 2.

[2] Estimated savings are based upon the past experience in New York and other states. Between 1990 and 1997, the State's investor-owned utilities spent $1.2 billion on efficiency or demandside management (DSM) programs, avoiding the need for over 1,300 MW of capacity. These programs included rebates for efficient appliances and lighting, consumer education, and low-income weatherization projects. The NYPA spent $255 million on DSM investments between 1990 and 1996, avoiding the need for 84 MW of capacity. See, NYSEPB, New York State Energy Plan and Final Environmental Impact Statement. November 1998. p. 3–60, 3–62.

[3] Estimated savings based on LIPA's current projections of 144 MW per $160 million spent over 5 years. See, LIPA, Clean Energy Initiative, May 3, 1999, p. 21.

Table 3.—Comparison of Demand Side Management and Renewable Energy Spending Per Capita By State[1]

State	Annual DSM Spending Per Capita
Connecticut	$35.95
Massachusetts	$25.91
New Jersey	$28.85
New York	$13.30

[1] American Council for an Energy-Efficient Economy. A Review and Early Assessment of Public Benefit Policies Under Electric Restructuring, Volume 2. Summary Table of Public Benefit Programs and Electric Utility Restructuring. Http://www.aceee.org/briefs/mktabl.htm. See also, U.S. Census 1999 population estimates, Http://quickfacts.census.gov/qfd/index.html.

Attorney General's Proposed Funding Level

New York	$19.78

E. Market Barriers to Energy, Efficiency

Despite the financial and environmental benefits of efficiency, many opportunities are not taken due to the numerous market barriers to energy efficiency investments. Efficiency often requires a higher capital outlay (e.g. to better insulate a home, get a more efficient refrigerator or motor) and many consumers look only to the up-front cost rather than to the lifetime cost when making purchasing decisions.[97] Within companies, purchasing agents may be responsible only for initial costs while another person is responsible for utility bills. In home or office building and renovations, the person making the capital outlay (*e.g.* the builder) rarely pays the monthly energy bills, and thus has no incentive to build in efficiency. Stores with limited shelf space often do not offer more efficient products because they are usually more expensive, and thus take longer to sell.

Efficiency investments are also diffuse. Unlike a power plant, which can generate 100 or 500 MW, efficiency savings come in small increments of a few kilowatts or less. Thus, to "generate" efficiency savings of 100 or 1,000 MW, many actors must be involved, and each must reject the incorrect assumption that his/her actions won't make a difference. For these reasons, most programs to stimulate efficiency focus on information disclosure and subsidies (such as tax credits, mail-back rebates

[97] Most consumers lack information on the energy, cost, and environmental savings that would enable them to comparison shop for more efficient appliances.

to consumers, or payments to sellers) to lower the initial cost, as well as efforts to encourage retailers to sell efficient products.

B. The Legislature Should Enact Tax Incentives to Purchase Efficient Appliances

Since major home appliances account for approximately one-third of residential energy consumption, the Legislature should pass a sales tax exemption[98] for all major home appliances having the EnergyStar label.[99] Past experience with short-term sales tax exemptions suggests that retailers could show significant interest in this initiative.[100] During last year's sales tax exemption on clothing, for example, many stores offered a matching 8 percent-off sale.

If implemented before the coming summer, this incentive could impact air conditioner sales and thus summer peak demand. Other major appliances and products (i.e. refrigerators, clothes washers, dish washers, furnaces, efficient windows, and lighting) also use significant amounts of energy. While not purchased by any individual very often, the cumulative annual sales of these appliances in New York are significant. For example, according to the Association of Home Appliance Manufacturers, 440,700 room air conditioners, 481,800 refrigerators, 297,700 clothes washers, and 133,400 electric clothes dryers were sold in New York State in 1996.[101]

While it is nearly impossible to predict with precision the cost or impact of the sales tax exemption on efficient products, conservative estimates suggest a positive outcome. If, for example, an exemption steered only 10 percent of air conditioner purchases to more efficient models, it could save 8,814 MWh per year and would cost the state (in lost tax revenue) perhaps $1,762,800 per year, while saving ratepayers $1,181,076 per year.

The sales tax exemption would additionally draw attention to efficient products and show the environmental and economic benefit of purchasing such products. Consumer education on the impacts of energy conservation and each individual's ability to contribute is critical to implementation of energy efficiency programs.

C. The Legislature Should Create an Efficiency Portfolio Standard

Electricity retailers, unlike electricity generators, have direct contact with electricity consumers through monthly bills . This contact provides an opportunity to educate consumers. However, absent a legislative mandate, retailers lack incentive to conserve energy because the more they sell, the greater they profit.[102] The Legislature should bring retailers into the State's energy efficiency efforts by enacting an Efficiency Portfolio Standard, requiring retail sellers of electricity to achieve certain levels of efficiency improvements in their service area.

Retailers could achieve these gains through direct installation of efficiency measures and include the cost of the installation in their prices. They could also provide rebates, promotions, or education. For example, using bill inserts and instructing employees (such as those answering telephone inquiries or installing equipment) to highlight efficiency and conservation opportunities, retailers could accomplish significant savings. A re-institution of the utility compact fluorescent bulb rebate program could be an important promotion.[103]

While an EPS is a new concept, it has two strong antecedents. Many states have implemented a Renewable Portfolio Standard that requires utilities to buy a minimum percentage of electricity from renewable sources. In addition, before restructuring, utilities were required to achieve certain energy savings through rate conditions that effectively acted like an EPS. Indeed, before restructuring, utilities were able to reduce electrical usage through efficiency measures by over 1,300 MW over 7 years when State regulations granted utilities incentives to accomplish that re-

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[98] The Senate Majority Leader has introduced legislation that includes a sales tax exemption for efficient products and other products that promote conservation. See, S.0002-Bruno.

[99] EnergyStar is a voluntary partnership between the EPA, DOE, manufacturers, utilities and retailers. Partners promote energy efficiency by labeling qualifying products with the EnergyStar logo. EnergyStar-approved products are 10–75 percent more efficient than the Federal efficiency standard. The NYSERDA is an EnergyStar partner and promotes EnergyStar products.

[100] The sales tax exemption could also encourage consumers in neighboring states to buy appliances from New York State businesses.

[101] Association of Home Appliance Manufacturers, Major Appliances—Estimated Distributor Sales by State. See http://www.aham.org/indextrade.htm.

[106] Since distribution costs are essentially fixed, higher sales lead to both higher revenue and proportionately higher profits. See also Section VI.E.3. for proposal to correct these existing market disincentives against efficiency.

[103] Replacement of incandescent bulbs with energy efficient compact fluorescents has the potential to significantly reduce energy consumption and consumer costs. See Appendix A–1.

sult.[104] (A further precedent is provided by New York City's program to install—at its expense—water conservation devices in hundreds of thousands of homes and apartments. This program successfully reduced water use significantly.)

D. The Comptroller Should Report Annually on Energy Efficiency and Renewable Energy Programs

Both to enhance public support for and understanding of efficiency and renewable programs, as well as to ensure that the money in these programs is spent most effectively, the Legislature should direct the Comptroller to prepare an annual report on the implementation of efficiency and renewable programs. As noted above, three major State programs currently operate: the NYSERDA's EnergySmart program (using SBC funds), the NYPA's Energy Services programs, and LIPA's Clean Energy Initiative. While the PSC requires the NYSERDA to report on the implementation of EnergySmart, the NYPA and LIPA have no reporting requirement. In addition, there should be verification of progress on the Renewable and Efficiency Portfolio Standards.

The Comptroller's annual report, prepared in coordination with the NYSERDA, NYPA, LIPA, PSC and retailers, should include:

- total funds expended on efficiency, conservation and renewable energy;
- total MWh and MW saved as a result of the programs;
- a running list of all completed projects and a list of all planned projects;
- total energy cost savings to consumers;
- comparative effectiveness of programs; and
- remaining barriers to additional efficiency, conservation and renewable energy projects.

Accurate accounting of efficiency and renewable energy projects is essential to understanding how future energy needs should be met. The Attorney General would commit to assisting the Comptroller with this report and in investigating opportunities to remove remaining legal barriers to a sound energy policy.

E. The PSC Should Improve Pricing and Revenue Signals to Encourage Flexible Demand and Conservation

In addition to tax incentives, Portfolio Standards, and direct subsidies through the NYSERDA, NYPA and LIPA, significant opportunities exist to amend pricing mechanisms to foster efficiency and conservation:

1. Utilities Should Widely Advertise Offers for Different Time-of-Day Rates to Residential Customers to Encourage Load Shifting

The Public Service Law requires large electric utilities to offer residential customers the option of paying different rates for different times of day of instead of paying one rate for all electricity used.[105] For example, instead of paying 13 cents per kilowatt-hour 24 hours a day, a customer could pay 6 cents during the night and 15 cents during the day. Despite this law, it appears that few utilities effectively offer this service to customers.[106] Since this pricing could shift demand away from peak times, the PSC should require utilities to advertise its availability.

Time of use pricing reduces electricity bills for customers who have the flexibility to use certain appliances, such as the clothes washer and dryer, dishwasher, or water heater, at times when the price is cheapest. This pricing also sends truer price signals to the customer, as it is far more expensive for the utilities to buy electricity during peak periods than in off-peak periods.

Given the failure of utilities to offer or advertise time of use pricing, significant peak demand reductions may be achievable if the PSC requires more aggressive efforts. The PSC should ensure that each retailer offer reasonable time-of-day (or at

[104] NYSEPB, New York State Energy Plan and Final Environmental Impact Statement, November 1998, p. 3–62. The demand-side management programs cost the utilities $1.277 billion between 1990 and 1997.

[105] See, PSL § 66(27). This law applies only to corporations with annual gross revenues in excess of $200 million.

[106] In a December 20, 2000 Order, the PSC required electric utilities to file a report identifying measures that could be taken to reduce peak demand. While several of the utilities indicated that "real time pricing" for their very large users of electricity (i.e. commercial and industrial) might be included in their portfolio of strategies to reduce demand, very few identified programs that could reduce peak demand from residential customers. Only New York State Electric and Gas (NYSEG) offers residential customers both time of use pricing (to customers who use 35,000 kWh or more annually) and day-night pricing (to customers who use 1,000 kWh or more per month). ConEd indicated that residential customers would be eligible to participate in its Direct Load Program which would reward customers who voluntarily allow ConEd remotely to control their central air conditioning units during peak.

least day-night) pricing to all customers, and provide consumers an analysis of the possible savings from such pricing. Appropriate means of financing time-of-day meters will need to be analyzed.

2. Direct Metering or Submetering Should be Expanded

While time-of-day meters would enable direct metered customers to shift some power use to off-peak periods, consumption is not measured individually in many apartments, but rather through the building's "master" meter. Studies have indicated that residents in master-metered buildings tend to consume significantly more electricity than residents with direct meters or submeters. Consideration should be given to the possibility of converting master-metered buildings in New York State to direct metering or submetering.[107] In master-metered buildings, individual residents do not pay for their electricity directly. Rather, electricity charges are included in the rent. These tenants thus have no direct price signal associated with their electricity consumption.

Direct metering and submetering use direct market forces to encourage conservation. For example, a NYSERDA pilot project in 1981 showed an energy savings potential of 18–26 percent from submetering.[108] If comparable energy savings were achieved in the approximately 400,000 apartments in 1,800 master-metered buildings in the Con Ed service area,[109] demand in the New York City load pocket would be reduced significantly. The considerable costs involved when converting to direct metering or submetering can be offset by the savings in the electricity bills over time.

Efforts to expand direct metering and submetering are ongoing, and should continue. For example, as part of its Residential Innovative Opportunities program, the NYSERDA has pilot projects to enhance submetering of cooperative apartment buildings, and has provided technical advice to building operators interested in converting to submetering.

3. Utilities Should be Given Incentives to Encourage Energy Efficiency and Clean Distributed Generation

While generators of electricity are allowed to sell their power at market value in the current restructured environment, the transmission and distribution retailers—the utilities—have remained regulated monopolies. That is, the rates received by the utilities from their customers for the transmission and distribution of electricity is still set through rate agreements with the PSC. Among the most central issues raised by the restructured marketplace is whether the utilities' profits should be linked directly to sales.

Under the current rate structure there is a rate cap, which means the more electricity a retailer sells, the greater the retailer's profits. But, a retailer's fixed costs for distribution do not increase substantially when marginally more electricity is sold, and thus the rate of profit increases for each additional kilowatt-hour of electricity sold. As a consequence, clean distributed generation, energy conservation or efficiency—all of which reduce a retailer's sales—is usually not in a retailer's best interests despite its significant benefits to consumers and the public.

If the rate structure rewarded retailers for reductions in demand, energy conservation would more likely become a priority for retailers and consumers. The PSC should develop a formula for the distribution charge that rewards (or at least does not discourage) efficiency, distributed generation, and similar efforts.

F. The Federal Government Should Implement New Appliance Efficiency Standards

The DOE should implement the new appliance energy efficiency standards[110] to reduce energy use in an important sector. Not only would this help New York's en-

[107] Current Energy Code requires all residential new construction to have separate meters for each dwelling (See, 9 NYCRR § 7813.52(b)). Between 1951 and 1979, however, the PSC banned submetering. Thus, much of the housing built during this time—including most public housing and other publicly assisted co-ops—have master meters. The Energy Code states that whenever more than 50 percent of a residential building's electrical system is replaced in a 12 month period, each dwelling unit is to be provided with a separate meter. See, 9 NYCRR § 7810.6.

[108] NYSERDA, *Facilitating Submetering Implementation*, Report 96–7, May 1996, p. A–2.

[109] Ibid., p. S–1.

[110] *See*, 66 Fed. Reg. 3313–33, January 12, 2001 (clothes washers); 66 Fed. Reg. 3335–56, January 12, 2001 (commercial heating and cooling equipment); 66 Fed. Reg. 4473–97, January 17, 2001 (water heaters); and 66 Fed. Reg. 7169–7200, January 22, 2001 (residential air conditioners).

ergy efficiency efforts, but since New York receives significant pollution from upwind states, efficiency efforts elsewhere can improve New York's air.

In 1977, the DOE promulgated efficiency standards for residential refrigerators, residential room air conditioners, and fluorescent lamp ballasts. These standards have been very successful in leading manufacturers to produce far more efficient products, often 25 percent or more efficient than previous models. The DOE estimates that the standards already promulgated will save enough energy to eliminate the need for over 13,000 MW of generation capacity nationwide.

In early 2001, the DOE announced the adoption of new energy efficiency standards for four additional types of appliances—residential central air conditioners and heat pumps, residential clothes washers, residential water heaters, and commercial heating and cooling equipment. These new standards are projected to save consumers and businesses more than $19 billion through the year 2030 and to alleviate the need to build 91 new 400-megawatt power plants. The residential central air conditioner standard alone is estimated to avoid the need for 53 of these plants.[111] It is critical that these standards be adopted by the new Administration and fully implemented.

VII. Challenge and Encourage New Yorkers to Assist in Reducing Demand

Every New Yorker can help to save energy, clean the air, and prevent climate change. By implementing these measures, consumers will also save on their electricity bills. State officials should use available opportunities to educate the public on efficiency, renewable power and conservation options.

An average U.S. family spends close to $1,500 a year on its home utility bills (both heating fuel and electricity bills). Businesses spend much more. Unfortunately, not even including inefficient appliances, a large portion of that energy is wasted through actions such as running an almost empty dish or clothes washer, or uninsulated attics, walls, floors, and basements. Lights left on when no one is around, at home or in stores or offices after hours, consume electricity needlessly. The DOE estimates that the amount of energy wasted nationwide is about the same amount of energy that we get from the Alaskan pipeline each year.[112]

Individual consumers can do many things at home to save electricity, reduce air pollutants, and reduce their energy bills. Table A–2 in the Appendix illustrates ways, many of which are free and available immediately, to save electricity. For example, if a household increases the air conditioner thermostat in summer by merely three degrees, it would save 937 kWh/yr., and $126 annually. If all New York households did the same, then 6.3 million MWh of energy would be avoided, along with over 3 million tons of carbon dioxide. Avoiding this amount of carbon dioxide is tantamount to removing 600,000 cars in 1 year.

APPENDIX

Table A–1.—Electricity Savings: Incandescent vs. Compact Fluorescent Lights

Savings show result of replacing one incandescent bulb with a compact fluorescent bulb in one household and in each of the 6,766,000 households in NYS.

Bulb Type	100 watt incandescent	23 watt compact fluorescent	Savings Over 3 Years by Replacing Bulb
Purchase Price	$0.75	$11.00	
Life of the Bulb	750 hours	10,000 hours	
Number of Hours Burned per Day.	4 hours	4 hours	
Number of Bulbs Needed	about 6 over 3 years	1 over 6.8 years	
Lumens	1,690	1,500	
Total Cost of Bulbs	$4.50	$11.00	
Total energy used over 3 years.	438 kWh per household	100.74 kWh per household	337.26 kWh per household
	2.964 billion kWh if all households.	682 million kWh if all households.	2.282 billion kWh if all households

[111] See, *New Efficiency Rules Cut Need for 91 New Power Plants,* Environment News Service, Washington, DC, January 19, 2001. A more complete description of the standards can be found at Http://www.eren.doe.gov/buildings/codes—standards/stkappl.htm.

[112] DOE, www.eren.doe.gov/comsumerinfo/energy—savers/introbody.html. Electricity generated by fossil fuels for one home plus the energy that is generated in the home (for example, a boiler) emits twice as much carbon dioxide as does one typical car in 1 year. Every kilowatt hour of electricity avoided in New York State saves almost one pound of CO_2 from entering the atmosphere.

APPENDIX

Table A–1.—Electricity Savings: Incandescent vs. Compact Fluorescent Lights

Savings show result of replacing one incandescent bulb with a compact fluorescent bulb in one household and in each of the 6,766,000 households in NYS.

Bulb Type	100 watt incandescent	23 watt compact fluorescent	Savings Over 3 Years by Replacing Bulb
	100 w (4 hrs/day) (365 days/year) (3 years) = 438000 watt-hours or 438 kWh. 438 kWh (6,766,000) = 2.964 billion kWh.	23 w (4 hrs/day) (365 days/year) (3 years) = 100740 watts-hours or 100.74 kWh. 100.74 kWh (6,766,000) = 682 million kWh.	(equivalent to the power generated from an 86.8 MW power plant, 24 hours every day.)
Total Cost of Electricity for 3 years (avg price in 1999: 13.4 cents/kWh).	$58.69	$13.50	
Total Cost over 3 years (cost of energy + cost of bulbs).	$63.19 per household $427,543,540 if all households.	$24.50 per household $165,767,000 if all households.	$38.69 per household $261,776,540 if all households
Total CO_2 emissions over 3 yrs (avg emission rate: 996.7 lbs/MWh or 0.9967 lbs/kWh).	436.56 lbs per household 1,476,882 tons if all households 438 kWh (.9967 lbs/kWh) = 436.56 lbs 436.56 lbs (6,766,000)/2000 = 1,476,882 tons.	100.41 lbs per household 339,687 tons if all households 100.74 kWh (.9967 lbs/kWh) = 100.41 lbs 100.41 lbs (6,766,000)/2000 = 339,687 tons.	336.15 lbs. per household 1,137,195 tons if all households
Total SO_2, emissions over 3 yrs (avg emission rate: 5.1 lbs/MWh or 0.00511 lbs/kWh).	22.38 lbs per household 75,711 tons if all households 438 kWh (.00511 lbs/kWh) = 22.38 lbs.	0.52 lbs per household 1,759 tons if all households 100.74 kWh (.00511 lbs/kWh) = 0.52 lbs.	21.86 lbs. per household 73,952 tons if all households
Total NOx emissions over 3 years (avg emission rate: 1.9 lbs/MWh or 0.0019 lbs/kWh).	0.83 lbs per household 2,807 tons if all households 438 kWh (.0019 lbs/kWh) = 0.83 lbs.	0.19 lbs per household 643 tons if all households 100.74 kWh (.0019 lbs/kWh) = 0.19 lbs.	0.64 lbs. per household 2,164 tons if all households

Table A–2.—Electricity Savings, Electricity Cost Savings, and Carbon Dioxide Emissions Avoided By Implementing Efficiency and Conservation Measures in One Household and in All New York Households

Household Measure	Electricity saved for one household (kWh/yr)	Electricity saved for all NY households (MWh/year)	Money saved for one household	CO_2 avoided for one household (lbs/yr)	CO_2 avoided for all NY households (tons/yr)
Replace a 1970's refrigerator w/a new EnergyStar refrigerator	2,197	14.9 million	$294	2,190	7,408,770
Increase AC thermostat by 3F degrees for cooling	937	6.3 million	$126	934	3,159,410
Replace 5 incandescent light bulbs with compact fluorescent	562	3.8 million	$75	560	1,894,480

Source: U.S. Energy Information Administration, Household Energy Consumption and Expenditures 1993, and Rocky Mountain Institute's calculations at www.rmi.org (1999)

Response of Eliot Spitzer to an Additional Question from Senator Cantwell

Question 1. Would you expand on the *de minimis* arguments that you made on pages eight through 12 of your testimony? Specifically, which parts of the Clean Skies Initiative go beyond acceptable executive changes, and what do you believe is the best way to make such a judgment?

Response. As a general rule, administrative agencies are expected to promulgate regulations that implement congressional intent as reflected in the statute. As explained below, in implementing the statutory design, agencies may exempt *de minimis* activity but only when doing so is consistent with congressional intent and would not reduce the benefits of the legislation being implemented. Because the

NSR provisions of the Clean Air Act are triggered by "*any* physical change" that results in increased emissions, the existing exemption for "routine maintenance" must be read narrowly and EPA cannot greatly expand that exemption or create other exemptions that reduce the air quality benefits to be achieved by the NSR requirements.

The *de minimis* doctrine is reflected in numerous Federal court decisions. In *Alabama Power Co.* v. *Costle*, 636 F.2d 323 (D.C. Cir.1979), the U.S. Court of Appeals for the D.C. Circuit held the EPA did not adequately justify the exclusion from the PSD requirements of modifications that resulted in relatively low emission increases. The Court stated that the Agency has the authority to exempt *de minimis* activity when applying the literal terms of a statute would result in pointless expenditures of time and effort. *Id.* In other words, agencies are entitled to craft exemptions from the scope of a statute when literal application of the statute would lead to "absurd or futile results." *Id* at 360. The Agency will bear a heavy burden to prove that the exempted matters are of a *de minimis* nature. *Id* at 360.

Other Clean Air Act cases decided after *Alabama Power* confirm the limited scope of EPA's authority to depart from the reach of the statute. Most recently, in *Environmental Defense Fund* v. *EPA*, 82 F.3d 45.1, 466 (D.C. Cir. 1996), the D.C. Circuit explained that *de minimis* exemptions are derived from the commonplace idea that "the law does not concern itself with trifling matters." The power to craft *de minimis* exemptions does not create the ability to depart from the statute, but rather is a tool used to implement legislative intent. *Id*. *De minimis* authority should be used when the burdens of the regulation greatly outweigh the value of enforcing it, not merely when the Agency concludes the costs exceed the benefit. *Id*.

Exemptions not found in a statute can also be based on "administrative necessity." *Sierra Club* v. *Environmental Protection Agency*, 719 F.2d 436, 462 (D.C. Cir. 1983). In *Environmental Defense Fund*, the Court listed examples of such *de minimis* or administrative exemptions available under the Clean Air Act: "judicial and legislative proceedings, recurring activities such as permit renewal where the activities to be conducted will be similar in scope and operation to activities already being conducted, rulemaking and policy development and issuance, routine maintenance and repair activities, civil and criminal enforcement activities, actions related to foreign affairs, and so on." 82 F. 3d at 465.

In light of this case law, EPA's authority to depart from the plain language of the statute is very limited. The statutory reach of the NSR provisions covers any modifications that increase emissions. To the extent that EPA's regulations have the effect of exempting any activity that does result in increased emissions, EPA must be able to establish that the exemption is called for by administrative necessity or that the burdens of applying the requirements greatly exceed the benefits under those circumstances.

Many aspects of EPA's rulemaking proposals appear to exceed this authority. Most significantly, its proposal greatly to expand the scope of the routine maintenance exemption cannot be justified. Indeed, the current exemption for routine activity must be construed narrowly to exempt only the routine maintenance activities of a plant, such as replacement of valves and flanges and patching of leaking pipes. It appears that EPA's NSR "reforms" will significantly expand the current exemption to exclude once-in-a-lifetime projects costing millions of dollars. Such projects are not *de minimis* within any plain understanding of the term. Moreover, EPA cannot demonstrate that the burdens of regulation greatly outweigh the benefits. In fact, the benefit of applying the NSR requirements to the activities that EPA hopes to exclude is very significant: it will lead to substantial decreases in air pollution—pollution that, as I and others have stated, is causing people to get sick and die and is harming the environment. All studies that have been done show that the benefits of this pollution reduction greatly exceed the costs.

Other aspects of EPA's "reform" proposal may fall outside of EPA's authority to craft *de minimis* exemptions, at least under some circumstances. For example, the clean unit exemption would satisfy a *de minimis* analysis only when control technologies applicable to the clean unit have not improved significantly since the plant was equipped with the controls. If control technologies do improve significantly, benefits can still be achieved by subjecting the unit to more effective controls when a modification that would otherwise trigger the NSR requirements is made. It is only when the burdens of upgrading the existing controls greatly exceed the benefits that an exemption is appropriate. Under those circumstances, however, there is no need for the clean unit exemption under the PSD program because the cost-effectiveness of controls is already figured into the determination of Best Available Control Technology.

If EPA proceeds to create broad exemptions that will plainly reduce or postpone the air quality benefits to be achieved by the NSR program, EPA will have exceeded

its authority. Based on what we have seen, it appears that EPA is rewriting the scope of the statutory provisions rather than effectuating congressional intent. This EPA may not do.

STATEMENT OF ATTORNEY GENERAL BILL PRYOR, ATTORNEY GENERAL OF THE STATE OF ALABAMA

Chairman Jeffords, Chairman Leahy, and distinguished members of the Committees, my name is Bill Pryor, and I am the Attorney General of the State of Alabama. It is my pleasure to be here today to discuss the important issue of Clean Air Act New Source Review.

I support the thrust of the report submitted to President Bush by the EPA Administrator to revitalize the New Source Review Program and in so doing to restore the delicate balance of "cooperative federalism" embodied in the Clean Air Act Amendments of 1970.

COOPERATIVE FEDERALISM

Until the 1970's, the maintenance of clean air was viewed as predominantly a State and local concern. In 1970, after a series of smaller experiments, Congress adopted a new blueprint for the battle against air pollution. The new plan—set forth in the Clean Air Act Amendments of that year (42 U.S.C. §§ 7401–7671 (1994 & Supp. V 1999))—created a model of "cooperative federalism."

This new model gave the Federal Government responsibility for establishing national air quality standards, along with a variety of enforcement tools for ensuring that those standards are met. It reserved to each State, however, "the primary responsibility for assuring air quality within the entire geographic region comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained within each air quality control region in such State."

Clean Air Act § 107(a), 42 U.S.C. § 7407(a). Underlying this provision was the congressional finding that "air pollution prevention . . . is the primary responsibility of States and local governments." Clean Air Act § 101(a)(3), 42 U.S.C. § 7101(a)(3).

In a series of decisions in the mid–1970's interpreting the then-new statute, the Supreme Court laid out and clarified the Act's division of responsibilities between the Federal Government and the States. *Train* v. *National Resource Defense Council,* 421 U.S. 60, 79 (1975); *Union Electric Co.* v. *EPA*, 427 U.S. 246 (1976); *EPA* v. *Brown*, 431 U.S. 99 (1977) (per curiam). In the quarter century since these cases, the Federal courts have staunchly protected the Federalist design of the Clean Air Act.

For example, in 1984, the Seventh Circuit struck down an attempt by EPA to strengthen a State Implementation Plan (or "SIP") through a partial approval that was more akin to an amendment. *Bethlehem Steel Corp.* v. *Gorsuch,* 742 F.2d 1028, 1036 (7th Cir. 1984). As Judge Posner eloquently explained, "The Clean Air Act is an experiment in federalism, and EPA may not run roughshod over the procedural prerogatives that the Act has reserved to the States, especially when, as in this case, the Agency is overriding State policy."
Id. at 1036–37 (citations omitted).

Similarly, and more recently, the D.C. Circuit relied on the same principles and precedents to vacate an EPA rule that purported to require 12 States and the District of Columbia to amend their SIN to adopt a particular method of controlling pollution. In so holding, the court emphasized that Section 110 of the Clean Air Act "does not enable EPA to force particular control measures on the States . . . ." *Virginia* v. *EPA*, 108 F.3d 1397, 1410, *amended on other grounds*, 116 F.3d 499 (D.C. Cir. 1997).

As these and other courts have acknowledged, the delegation of implementation decisions to the States reflects not only a spirit of comity but also a recognition that State regulators—well-versed in local needs and circumstances—are best able to craft detailed programs to improve air quality while ensuring the continued availability of energy and maintaining economic prosperity.

THE CLINTON EPA ENFORCEMENT CAMPAIGN

In the late 1990's, the United States Environmental Protection Agency upset this sound design. EPA commenced enforcement actions against a variety of companies, including a cross-section of the nation's electric utilities, claiming that certain plant

activities triggered the extensive New Source Review pre-construction permitting requirements under the Clean Air Act.

For two decades, EPA, frontline State regulators, and regulated sources had all interpreted these activities as falling within an exclusion for routine maintenance, repair, and replacement. Their common understanding was that New Source Review applied only to major modification activities that are akin to new construction. During the Clinton Administration, EPA advanced a novel interpretation that would require the adoption of state-of-the-art pollution controls at existing sources for activities that State regulators had considered routine maintenance, repair, and replacement activities.

The Clinton EPA's new interpretation conflicted with prior Federal and State guidance. In several instances, State and local regulators inspected the facilities that are the subject of EPA's enforcement actions—before or immediately after the maintenance activities upon which EPA has based its actions—without suggesting that a permit was necessary. Indeed, EPA's enforcement net was so broad as to encompass certain plants that sought out and received explicit determinations from State regulators that a particular maintenance activity did not trigger the New Source Review requirements.

The Clinton-era EPA undertook this abrupt reversal of course without notice-and-comment rulemaking and without consulting the States, which have had the primary responsibility to implement New Source Review standards for over 20 years. EPA's course eviscerated the cooperative Federalist approach that is the heart of Congress's design, in which the Federal Government has the authority to set national air quality objectives and standards but the States have the authority and the responsibility to implement them. EPA invaded the province of the States and threw their respective air pollution control programs into upheaval by reversing—with the blunt tool of enforcement instead of a collaborative rulemaking process—interpretations that are central to the day-to-day activities of State regulators.

I urge these committees to work with the President and the EPA in a bipartisan spirit to develop better-defined standards of New Source Review, consistent with the original design of cooperative federalism in the enforcement of the Clean Air Act.

RESPONSES OF BILL PRYOR TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. How would you recommend that NSR be reformed to ensure that the "cooperative federalism" that you described in your testimony remains the cornerstone of the Clean Air Act?

Response. I should note that my testimony was devoted to the subject of routine maintenance, repair, and replacement ("RMR&R") activities, and the problems that have been caused by the decision of EPA during the Clinton Administration to ignore roughly a quarter-century of established practice with regard to state regulators' responsibility for oversight of these activities. We should return to the maximum extent possible to the situation that existed before the Clinton Administration's reversal of policy. The long-standing approach that the EPA abandoned in the 1990's was consistent with the Clean Air Act, and that approach preserved a sensible division of labor among state and Federal enforcement authorities. As I understand the recommended improvements to the NSR program, as announced in June of this year, EPA wishes to conduct rulemaking proceedings that will set cost-based safe harbor thresholds for RMR&R activities, and the new rules will provide a clearer definition of what activities fit within RMR&R—and thus do not trigger NSR—and what activities do not fit. These EPA recommendations are consistent with both the original understanding of the Clean Air Act that I outlined in my testimony and the long-standing enforcement practice before the 1990's. I believe that clearer rules would protect the states' role in the regulation of air pollution and, as a consequence, lead to better enforcement outcomes.

Question 2. In your testimony, you call for the President and the EPA to develop better defined standards of the NSR program. Can you comment on the announcement by EPA to finalize several NSR rulemakings and to propose other rules?

Response. In the course of answering the first question, I have answered the second question to the extent of my endorsement of the RMR&R recommendations. Because I do not claim any expertise in the other areas of policy that are covered by the EPA's June 2002 recommendations, I do not wish to offer an opinion, either positive or negative, with respect to the other elements of the Agency's proposed course of action. I know that the air quality regulators of my state are prepared to enforce and abide by the final NSR rulemakings, which were initiated by the Clinton Administration.

STATEMENT OF ERIC SCHAEFFER DIRECTOR, ENVIRONMENTAL INTEGRITY PROJECT/ ROCKEFELLER FAMILY FUND

Thank you, Mr. Chairman and members of the Senate Environment and Judiciary Committees, for the opportunity to testify today. I am presently director of the Environmental Integrity Project at the Rockefeller Family Fund, a nonprofit organization dedicated to fair enforcement of our nation's environmental laws. Until this February, I was director of EPA's Office of Regulatory Enforcement, a position I held for 5 years.

Last month, the Administration unveiled its program to effectively repeal the New Source Review (NSR) provisions of the Clean Air Act. I would like to briefly highlight why the Administration's proposal is unlawful, threatens public health, is premised on an energy shortage that does not exist, and undermines enforcement of the Clean Air Act.

Twenty-five years ago, Congress exempted existing coal-fired power plants, refineries, and other facilities from the strict permit and pollution control requirements all new operations had to meet. Under the law, the exemption for these so-called "grandfathered plants" ends whenever a facility is physically modified in a way that increases its potential to emit above a minimal amount. EPA has recognized an exemption for routine repairs to prevent ordinary maintenance activities from triggering permit review. Because this exception was created by EPA and does not appear in the law itself, it must be read narrowly under the Federal rules of statutory construction.

Federal courts have taken this law much more seriously than the Bush Administration, beginning with the landmark Alabama Power decision by the D.C. Circuit Court of Appeals more than 20 years ago. That decision rejected EPA's effort to carve out an exemption for certain sources, holding:

> Implementation of the statute's definition of "modification" will undoubtedly prove inconvenient and costly to affected industries; but the clear language of the statute unavoidably imposes these costs except for *de minimis* increases. The statutory scheme intends to "grandfather" existing industries; but the provisions concerning modifications indicate that this is not to constitute a perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit.

The 7th Circuit Court of Appeals adopted the same broad reading of the law in finding that Wisconsin Electric Power Company had violated New Source Review. And the Justice Department, when enforcing the rules, reminds defendants that their exemption is temporary and ends when a physical modification increases pollution.

Why does New Source Review matter? Because older plants still claiming to be exempt from the law after 25 years are responsible for the lion's share of some of our worst pollution. For example, coal fired power plants, almost all built before 1977, are responsible for 2 out of 3 tons of sulfur dioxide and a quarter of the nitrogen oxide from all sources. According to national epidemiological studies by the American Cancer Society, the Health Effects Institute, the Harvard School of Public Health and others, these pollutants form fine particles now associated with high levels of premature death among exposed populations.

In 1999, the Justice Department filed lawsuits against eight power companies responsible for over 20 percent of the sulfur dioxide emissions in the United States for violating NSR requirements. An Abt Associates study, using EPA models and the most conservative of a range of choices, estimates 5,900 premature deaths a year from power plants owned by just these eight companies. That analysis has recently been validated by Jonathan Levy of the Harvard School of Public Health. EPA's expert witness, Professor Morton Lippman of the New York University School of Medicine, estimates more than 420 premature deaths a year are caused by the Illinois Power Baldwin plant alone—then cautions that this is likely an underestimate. The steady drumbeat of bad news from public health experts should push the EPA to treat this matter with some urgency by stepping up its enforcement against big polluters responsible for this problem.

What has the Bush Administration done instead? It has announced changes to New Source Review last month to carve new loopholes, turn the law on its head, and promise eternal life to some of the worst polluters in the country. For example, the Agency proposes to treat as routine repair, "replacement of existing equipment with equipment that serves the same function and does not alter the basic design parameters of a unit." In other words, you can rip out and replace all the major components of a utility boiler—over and over—no matter how expensive, complex, or time consuming these modifications are. And if that's not enough, you'll also get an exemption for any project to, "facilitate, restore or improve efficiency, reliability,

availability or safety within normal facility operations." Contrary to the plain meaning of the law, almost every project would be exempt from the definition of a physical modification that requires permit review and pollution control. These changes take an administrative exception for routine repair not found in the law that courts insist must be read narrowly, and expands it until it swallows the law whole.

Almost as bad, the Administration has turned back the clock by allowing companies to look back 10 years, pick the 24 months in which their pollution peaked, then keep polluting at those levels for the next decade and beyond. Rather than ratcheting pollution down, this proposal creates a kind of property right in pollution that can be used to avoid permit review and pollution control. Given what we know about the damage to human health, why create a new entitlement to actually increase pollution above current levels?

EPA offers several half-hearted explanations for this gutting of the Clean Air Act. My personal favorite is that NSR gets in the way of energy growth, and keeps power companies from maintaining their capacity. But according to the Department of Energy, 2001 set a new record for power plant growth, and we have so much capacity that new plants are being delayed or canceled. Another Department of Energy Report, prepared for Congress in 2000, found that electricity prices would not increase even if all coal-fired plants above 20 megawatts had to put on modern pollution controls within 5 years. Power companies keep telling us that they will lose generating capacity because NSR makes them afraid to keep their plants in repair. But even the 43 power plants targeted by EPA in its complaints show no real decrease in capacity between 1998 and 2002, according to information available on the companies' own websites.

What about refineries? Again, the Department of Energy tells us that distillation capacity in U.S. refineries has increased from less than 16 million barrels a day in the mid 1980's to nearly 18 million barrels today. And U.S. refineries have expanded 50 percent over the same period, from an average capacity of 46,000 barrels a day to 73,000 barrels. In other words, the greatest periods of growth in our capacity to generate electricity and refine oil have occurred exactly when enforcement of New Source Review requirements was at its peak. So much for the argument that NSR inhibits energy supply.

Another argument you'll hear is that New Source Review gets in the way of projects that decrease emissions. But the law doesn't even apply unless your project is expected to increase emissions, which is why the Agency doesn't offer much more than innuendo and a couple of anecdotes to support this red herring. EPA's enforcement cases demonstrate that many of these projects increased emissions many times above the minimal amounts allowed by law. And the Administration's proposals—by exempting every project as routine no matter how much emissions increase, and by allowing refineries to ratchet pollution back up to their highest levels in 10 years—hardly provide an incentive to reduce pollution.

The Administration would have us believe that New Source Review does little for the environment. But the reductions in sulfur dioxide from refinery enforcement cases, and from just two power plant settlements (TECO and PSE&G) come to 220 thousand tons a year, as much as the emissions from all power plants in the State of New York. Add the Dominion and Cinergy agreements, on track until derailed by the Bush Administration, and you get another 400,000 tons of sulfur dioxide a year. That's more than 600,000 tons from just a handful of cases in less than a 2-year period. So much more could be accomplished if the Administration weren't so determined to stop enforcing the law.

The Bush Administration and the energy lobby argue that New Source Review is just too confusing to comply with. I invite you to read the transcript of the TVA trial, as well as the many documents that EPA has gathered in the course of its investigations. When asked if the some of the gigantic projects targeted by EPA's enforcement qualified as routine repair or ordinary maintenance, TVA's own plant supervisors admitted they did not. Read the court's decision in the Murphy Oil case, in which the judge blasted refinery managers for hiding emissions increases to avoid NSR requirements. The evidence shows that these companies knew full well the risks they were taking. They gambled with the law and lost. Now they have the arrogance to demand that the government cover their losses by changing the rules to their liking.

Finally, there's the Bush "Clear Skies" proposal, featuring a snazzy website and colorful charts, but no actual legislative language. Clear Skies, of course, applies only to power plants and asks nothing of refineries, pulp mills, and other factories that will benefit from EPA's new, polluter-friendly interpretation of the Clean Air Act. For power plants and refineries, EPA enforcement actions would cut sulfur dioxide emissions about 70 percent over the next 10 years, as does North Carolina's new State law. The Bush Administration thinks we should take about 20 years to

get that much from power plants, and proposes nothing but Clean Air rollbacks for refineries and other polluters. The Administration is free to make its case, but ought not to blackmail Congress and the public by refusing to enforce the law until it is changed to the energy industry's liking.

Given the Administration's policy changes and vague and conflicting statements by the Administrator of EPA, what is to become of the cases filed by the Justice Department? Mr. Sansonetti, the Assistant Attorney General for Environment and Natural Resources at the Justice Department, has argued that the Clean Air Act is broad and the exemptions narrow, but the Bush Administration now suggests exactly the reverse. Mr. Sansonetti and the Justice Department have argued that industry understood well the requirements of the law, while his own Administration is insisting the law is too complex to understand. Mr. Sansonetti and the Justice Department have argued that New Source Review is fundamental to environmental protection, while the Bush White House pretends it doesn't matter at all.

At you can tell from my testimony, I don't think much of the Administration's proposals or the arguments its offers to support them. President Bush has the right to recommend that Congress weaken the Clean Air Act. What is most disturbing is the spectacle of large companies—some of the biggest and wealthiest in America—avoiding enforcement of the law by getting their friends in power to change it in their favor. By all means, let's have an honest debate on the future of the Clean Air Act. But in the meantime, I hope you will insist that the environmental laws you have written be enforced when they are not obeyed.

Tennessee Valley Authority Actual Emission Increases Resulting From Modifications at Power Plants Located in Alabama, Tennessee, and Kentucky

Plants	NOx (tpy)
Allen Unit 3	1,732
Colbert Unit 5	1,774
Cumberland Unit 1	21,187
Cumberland Unit 2	4,192
John Sevier Unit 3	298
Paradise Unit 1	1,007
Paradise Unit 2	421
Paradise Unit 3	10,674
Shawnee Unit 1	720
Total	42,005

Source: Final Order of the Environmental Appeals Board, United States Environmental Protection Agency, Washington, DC, In re: Tennessee Valley Authority, Docket No. CAA–2000–04–008, Decided September 15, 2000.

Capacity of Power Plants Identified in NRS Lawsuits 1998–2001 (Megawatts)

	Combined Winter Capacity of Power Plants Identified in NSR Lawsuits			
Utility Company	Capacity 1998	Capacity 1999	Capacity 2000	Capacity 2001
Alabama Power (Southern)	9027.1	9027.1	9846.4	N/A*
Cinergy/PSI	3888.8	3634.8	3649.8	N/A*
Georgia Power (Southern)	7103.4	6953.4	7068.7	N/A*
Edison	2233	2233	2233	2233
SIGECO	406	406	406	406
AEP	13480	13480	13480	N/A*
Duke	8087	8087	8087	N/A*
TVA	12280.8	12262	11931	11176**

*Not Available
**Reflects Units not in use due to decline in demand
Source: Energy Information Administration

Selected State-Level Estimates of PM-Related Health Effects Attributable to Eight Electric Utility Systems

State	Mortality	Chronic Bronchitis	Acute Bronchitis	Asthma Attacks
Alabama	240	160	540	5,400
Florida	230	160	410	4,700

Selected State-Level Estimates of PM-Related Health Effects Attributable to Eight Electric Utility Systems—Continued

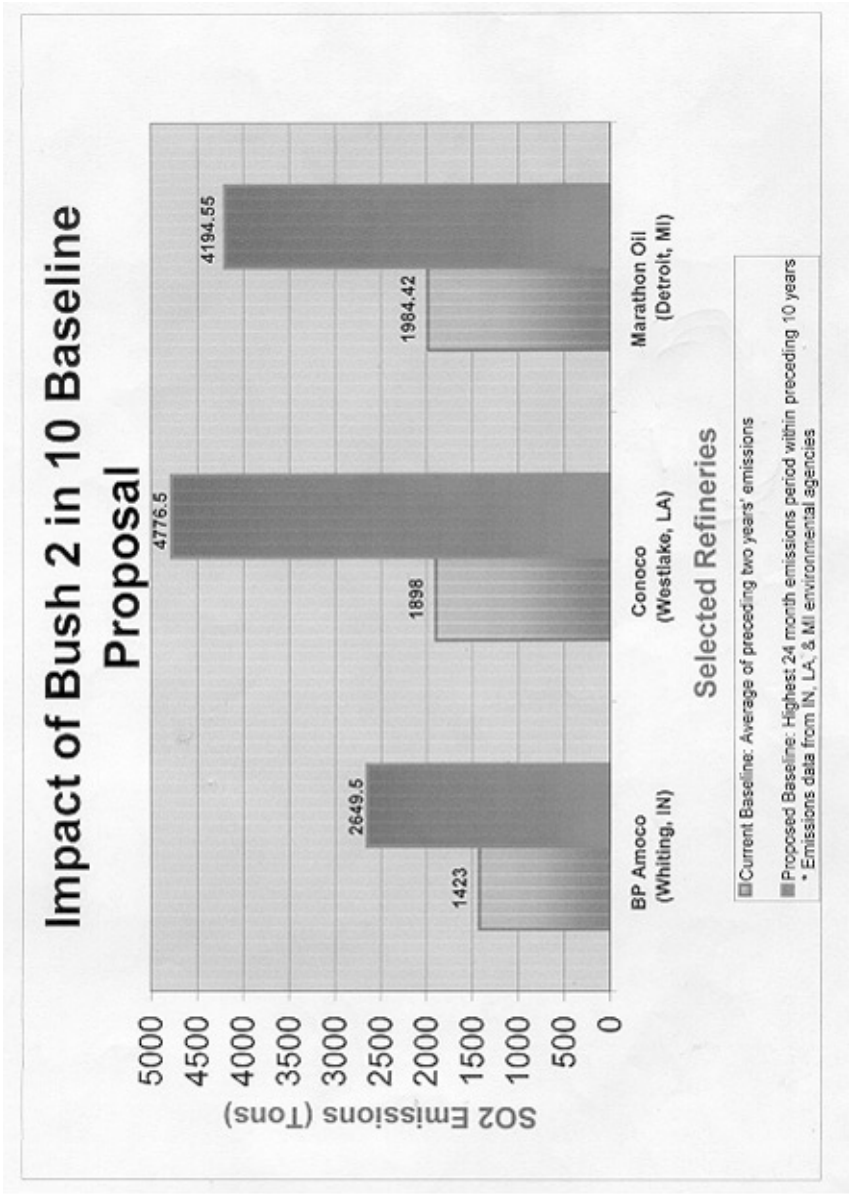
State	Mortality	Chronic Bronchitis	Acute Bronchitis	Asthma Attacks
Georgia	360	300	1,000	10,000
Illinois	290	210	690	6,800
Indiana	250	180	610	5,900
Maryland	170	140	410	4,400
Michigan	250	190	660	6,400
New York	340	260	750	8,200
North Carolina	400	310	890	10,000
Ohio	480	340	1,100	11,000
Pennsylvania	550	360	1,000	11,000
Tennessee	340	240	720	7,700
Virginia	230	180	550	6,000

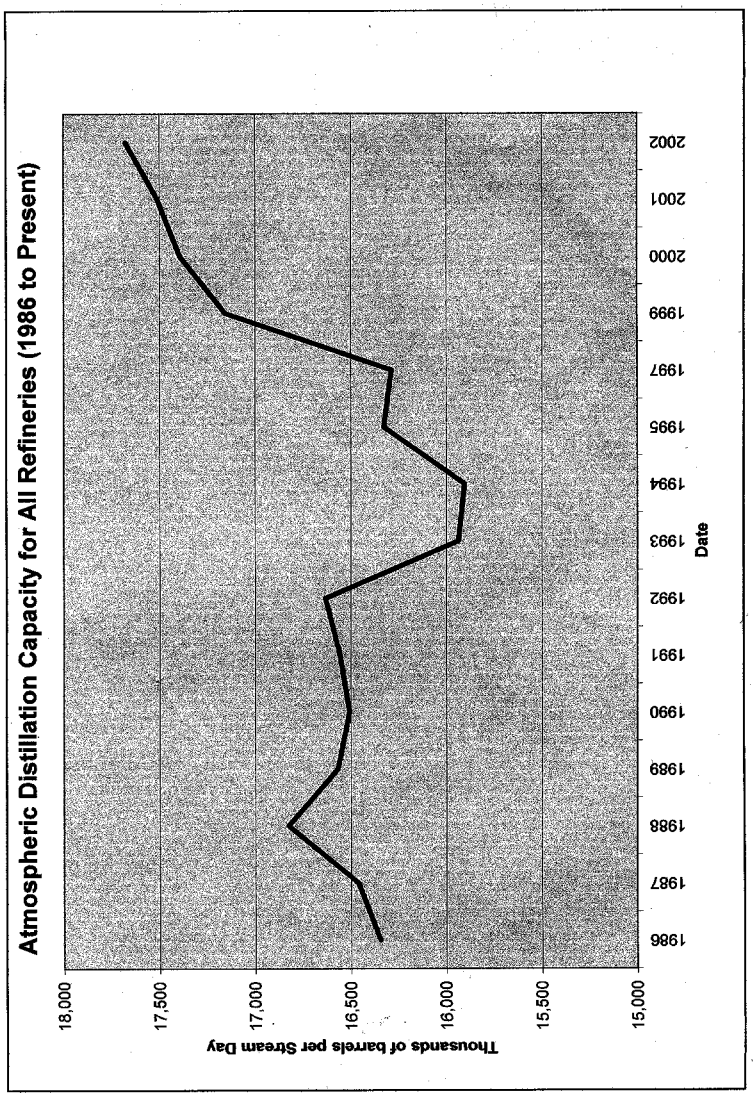
Source: Abt Associates, Particulate-Related Health Impacts of Eight Electric Utility Systems (April 2002).

National Estimates of PM-Related Health Effects Associated with Eight Electric Utility System

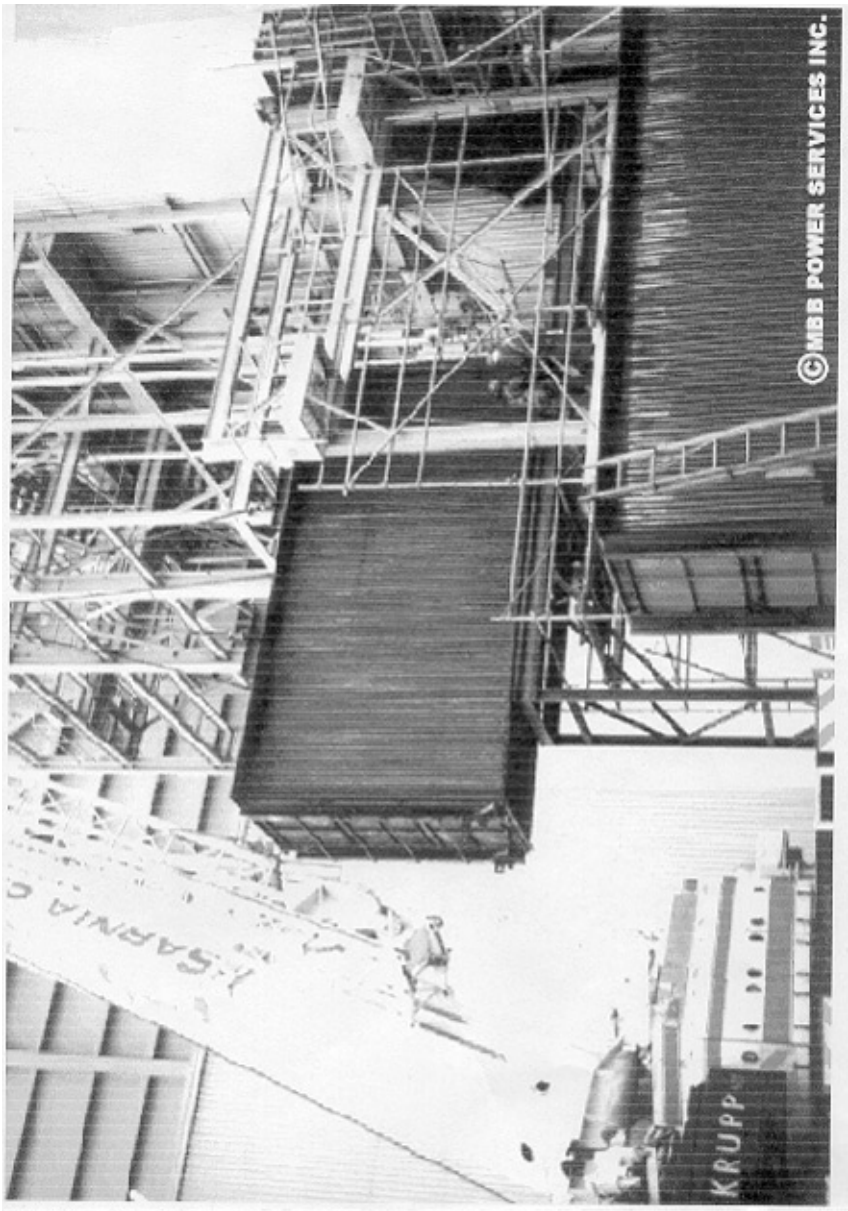
Electric Utility System	Mortality	Chronic Bronchitis	Acute Bronchitis	Asthma Attacks
AEP	1,400	1,000	3,200	32,000
Cinergy	730	530	1,700	17,000
Duke	550	420	1,300	14,000
Dynergy	450	330	1,100	10,000
First Energy	610	450	1,400	14,000
SIGECO	50	36	120	1,200
Southern	1,200	900	3,000	29,000
TVA	780	590	1,800	20,000
Total	5,900	4,300	14,000	140,000

Source: Abt Associates, Particulate-Related Health Impacts of Eight Electric Utility Systems (April 2002).


Impact of Bush 2 in 10 Baseline Proposal
SO2 Emissions (Tons)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1423
2649.5
1898
4776.5
1984.42
4194.55
BP Amoco (Whiting, IN)
Conoco (Westlake, LA)
Marathon Oil (Detroit, MI)
Selected Refineries
Current Baseline: Average of preceding two years' emissions
Proposed Baseline: Highest 24 month emissions period within preceding 10 years
* Emissions data from IN, LA, & MI environmental agencies



Source: Energy Information Administration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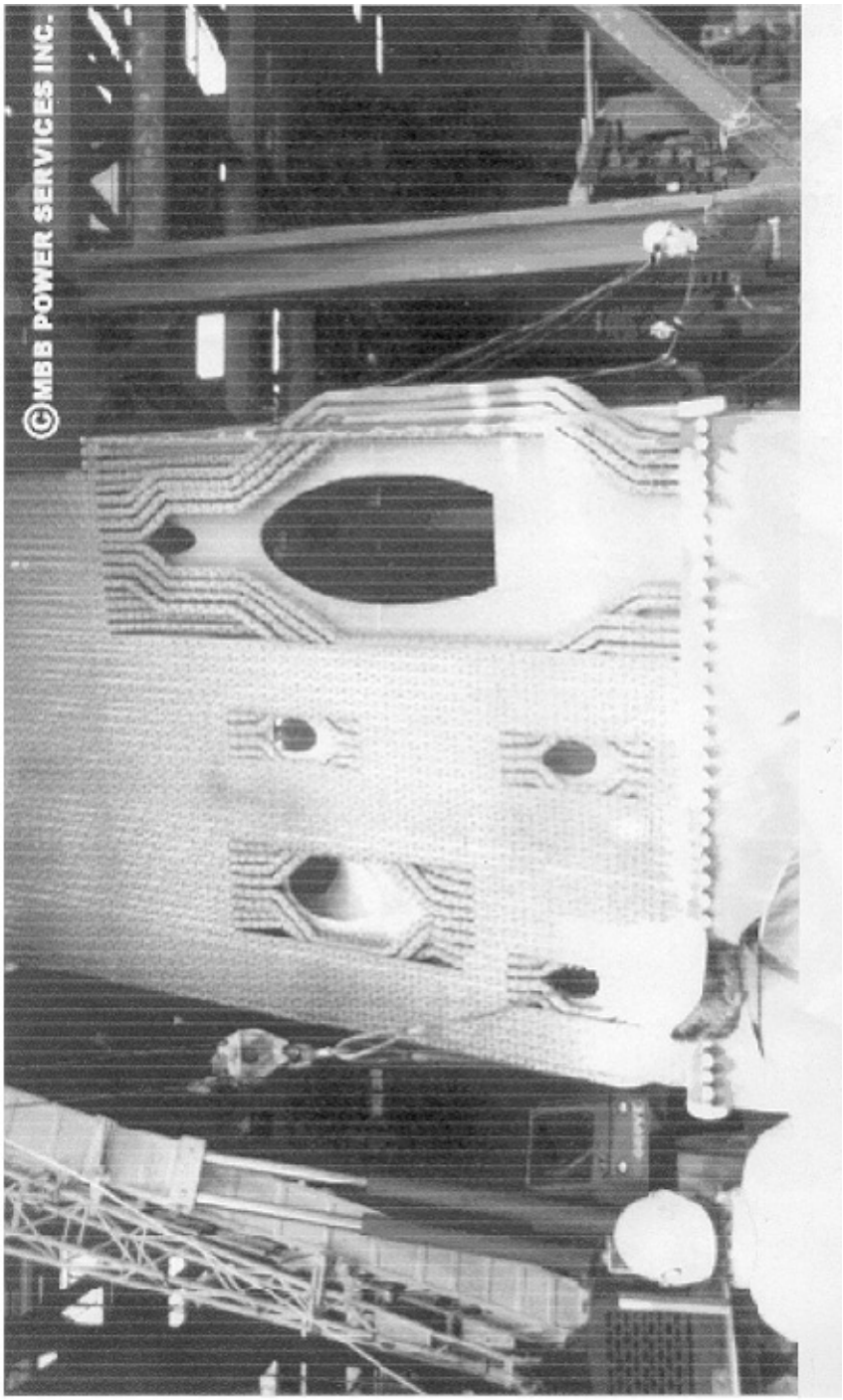
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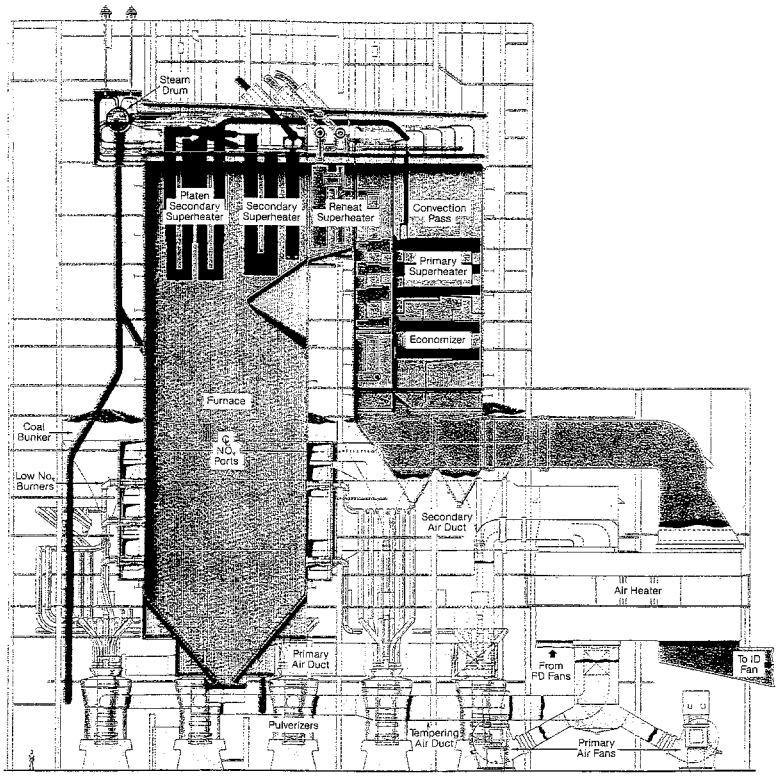

Carolina-type 455 MW Radiant boiler for pulverized coal

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF INDIANA

UNITED STATES OF AMERICA,	)	
Plaintiff,	)	Civil Action No. IP99-1692 C-M/S
v.	)	JUDGE MCKINNEY
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY,	)	MAGISTRATE JUDGE SHIELDS
Defendant.	)	

UNITED STATES' STATEMENT OF UNDISPUTED MATERIAL FACTS IN SUPPORT OF THE UNITED STATES' MOTION FOR SUMMARY JUDGMENT THAT DEFENDANT'S 1997 MODIFICATION OF CULLEY STATION UNIT NO. 3 DOES NOT QUALIFY FOR THE REGULATORY EXEMPTION FOR "ROUTINE MAINTENANCE, REPAIR AND REPLACEMENT"

In support of its Motion for Partial Summary Judgment on the Issue That Defendant's 1997 Refurbishment at Culley Unit 3 Do Not Qualify for the Routine Maintenance Exclusion, the United States submits the following Statement of Undisputed Facts:

1. The F.B. Culley Station Unit 3 boiler ("Unit 3") began its initial operation in 1973. SIGECO Petition to Modify Operating Permit, Sept. 23, 1997 (Exh 13) at 1.

2. In 1995 SIGECO removed four pieces of tubing from the reheater and superheater and sent them to Babcock & Wilcox metallurgical laboratory for analysis and determination of remaining life. Three of the four samples were found to have severe wall loss with little or no remaining life, where failure can be expected to occur. Babcock & Wilcox Metallurgical Condition Assessment of Reheat Outlet and Secondary Outlet Tube Samples (December 1995) (Exh. 14) at 2, 6-8.

3. On or about February 17, 1997, Babcock & Wilcox provided SIGECO with a summary

of the prior assessments of Unit 3's condition. (Exh. 11). In the report, Babcock and Wilcox recommended that SIGECO replace the outlet sections of the secondary superheater and reheater. Babcock and Wilcox concluded that areas of each component had sustained severe tube loss and were at or near the end of their useful lives, with increased probability of tube failure. Exh. 11 at 2-3 through 2-4 and 5-2 through 5-3).

4. Culley Unit 3 was scheduled to have a major turbine outage in 1997. SIGECO generally undertakes such outages approximately every 7 years. Deposition of Billy Joe Reynolds (Exh. 8) at 189-91.

5. SIGECO began the planning for the 1997 major turbine outage as early as 1993 or 1994. Mr. Jochum, SIGECO's Vice President for Power Production worked to determine whether additional large capital expenditures to maintain boiler reliability should be scheduled during this outage. Deposition of Ronald G. Jochum (Exh. 10) at 66.

6. As early as 1994, SIGECO was considering the feasibility of increasing the capacity of the Unit 3 boiler.) On November 18, 1994, Babcock & Wilcox performed an engineering study that included a feasibility analysis for a capacity increase for Unit 3. Study (Exh 15 at 1.).

7. In early 1997, Babcock & Wilcox and General Electric Company collectively developed a proposal to SIGECO to refurbish and increase the capacity of Unit 3 from approximately 261 Gross Megawatts (MW) to at least 287 Gross MW, by increasing steam flow through the boiler by 8% and increasing turbine efficiency. General Electric/Babcock & Wilcox, Equipment and Services Proposal to SIGECO for Unit Refurbishment and Outage Services, Culley Unit 3 (April, 1997) ("Scope of Work") (Exh. 6) at 1.2-1.3.

8. An earlier version of the proposal, dated March 1997, was entitled "Capacity Uprate

and Outage Services." Deposition of Billy Joe Reynolds (Exh. 8) at 200-01 and Exh. 20 thereto.

9. Ronald Jochum, SIGECO's vice president of power production instructed SIGECO's project manager to cross out "Capacity Uprate" and replace it with the word "Refurbishment." Deposition of Billy Joe Reynolds (Exh. 8) at 200-01 and Exh. 20 thereto.

10. SIGECO accepted the April 1997 revision of the proposal identified in ¶ 7, above ("Scope of Work"), and considered it the Scope of Work for the project. Deposition of Michael Sandefur (Exh. 16) at 223 (Exh 7 to the accompanying Summary Judgment Memorandum is Exh. 15 to the Sandefur Deposition).

11. In May 1997, SIGECO executed work order no. 7101211 for the project described in the Scope of Work. The Work Order described the project ("Unit 3 Refurbishment") as: (1) replacement of the superheater outlet; (2) replacement of the reheater outlet; (3) install aero-derivative high pressure-intermediate pressure turbine; (4) replace boiler feed pump element; (5) replace low pressure turbine buckets; and (6) installing retractable packing in the turbine. SIGECO budgeted $17.4 million to construct the Unit 3 Refurbishment. SIGECO Work Order No. 7101211, May 1997 (Exh. 5). Deposition of Billy Joe Reynolds (Exh. 8) at 179.

12. The engineering and planning of the Unit 3 Refurbishment was custom-designed by an integrated team of General Electric Company and Babcock & Wilcox. Ex. 7 (Scope of Work) at 2.1.

13. SIGECO retained the services of an outside architectural engineering firm, Brown and Root, to assist in the management of the Unit 3 Refurbishment. Deposition of Gordon Hurst (Exh. 6) at 200.

14. SIGECO replaced the reheater and secondary superheater outlets because Babcock and Wilcox's engineering reports concluded that the components were at or near the end of their useful

life. Based on these reports, SIGECO's Vice President of Power Production, Ronald Jochum, concluded that future reliable operations at Unit 3 were in jeopardy. Mr. Jochum concluded that the components were in danger of experiencing tube failures, which would cause forced outages, requirin Unit 3 to shut down on an emergency, unplanned basis. Babcock & Wilcox Condition Assessment Summary, Secondary Superheater and Reheater, February 17, 1997, (Exh. 9) at 2, 2-3 through 2-4 an 5-2 through 5-3; Hurst 30(b)(6) Deposition (Exh. 6) 206; Jochum Deposition (Exh. 10) at 69-74.

15. SIGECO generally addresses tube leaks in components such as the reheater and secondary superheaters by padwelding (laying of welded metal over top of tube to seal leak), cutting tube at either side of a leak and replacing the cut portion with a new piece of tubing, or replacing a single tube or a subassembly of tubes. Sometimes a tube that experiences failures is plugged and tak out of service without being removed from the component. Responding to tube leaks is a type of maintenance activity that is repetitively done. Deposition of Gordon Hurst, pursuant to Rule 30(b)(6 January 16, 2002 (Exh. 6) at 135-37, 144-45.

16. The life of Unit 3 was dependent upon replacing the superheater and reheater outlets and the turbine blade replacements. By doing the projects, SIGECO extended the life of Unit 3. Deposition of SIGECO employee Eric Robeson, October 25, 2001, ("Robeson Deposition") (Exh. 12 at 172.

17. Babcock and Wilcox redesigned the new secondary superheater outlet to allow an 8% increase of steam flow through the boiler from 1,850,000 lbs/hr. To 2,000,000 lbs/hr. Scope of Worl Exh 7. at 1.2 through 1.3.

18. Babcock & Wilcox also designed the new secondary superheater outlet with a thinner wall and higher alloy tubing to reduce the pressure drop, thus enabling the 8% increase of steam flow

through the boiler. Scope of Work (Exh 7) at 4.2.

19. Babcock & Wilcox changed the dimensions of the new secondary superheater outlet by eliminating wrap-around tubes located that were part of the original secondary superheater outlet. Scope of Work (Exh. 7) at 4.2.

20. The 1997 Refurbishment was the first time that the secondary superheater outlet had been replaced in its entirety since the Unit began operating in 1973. Reynolds Deposition (Exh 8) at 158.

21. Babcock and Wilcox redesigned the new reheater outlet to reduce the total surface area of the component. Babcock & Wilcox made the change to reduce the attemporator (spray nozzle used to act as a coolant to control reheater steam temperature) flow to more reasonable levels. The attemporator sprays feedwater from a nozzle inside the reheater steam line and is designed to control the reheater steam temperature, like a coolant. The attemporator had previously been excessive. Scope of Work (Exh. 7) at 4.2.

22. The 1997 Refurbishment was the first time the reheater outlet had been replaced in its entirety since the Unit began operating in 1973. Deposition of Dirk Ensley (Exh. 17 at 132).

23. At the time of the Unit 3 refurbishment, SIGECO did not plan to replace the secondary superheater and reheater at Unit 3 until the year 2025 or later. Scope of Work (Exh. 7) at 1.3.

24. There were sixty sections of tubes in the superheater outlet and ninety-five sections in the reheater outlet. Scope of Work (Exh 7) at 4.2 - 4.3.

25. The process of disassembling the old superheater and reheater outlets and assembling the new outlets took approximately eight weeks with about 20-25 craftsmen working per shift, with two ten-hour shifts, six days per week. The size of each shift was limited by the amount of available

space for the craftsmen to work. Deposition of Billy Joe Reynolds, November 30, 2001, (Exh. 8) at 225-26; Scope of Work (Exh. 7) at 4.27.

26. As part of the Unit 3 Refurbishment, General Electric Company employed a new desi in the replaced turbine blades and buckets, known as the Advanced Design Steam Path ("ADSP"). The ADSP allowed the turbine-generator to increase electrical generation by 3% aside from additiona capacity increases resulting from the increase steam flow. Scope of Work (Exh. 7) at 1.2.

27. All of the blades (also known as buckets) and nozzles (also known as diaphrams) in th high pressure and intermediate pressure turbines were replaced during the Unit 3 Refurbishment. Deposition of Billy Joe Reynolds (Exh. 8) at 184; Deposition of Billy Joe Reynolds, November 30, 2001, (Exh. 8) at 225-26; Deposition of Dirk Ensley (Exh. 17) at 72-74. Scope of Work (Exh. 7) at 4.1, 4.27.

28. The replaced blades (nozzles and buckets) incorporated a new, state of the art proprietary design, called the "Advanced Design Steam Path ("ADSP"). The new technology essentially focused upon changing the shape of the blades to an advanced aerodynamic design to pas higher steam flow from the boiler and to more efficiently direct steam flow. Scope of Work (Exh. 7 2.2, 2.3, and 3.1. General Electric and Babcock & Wilcox characterized these changes as the "replacement of the high pressure and intermediate pressure steam path." Scope of Work (Exh. 7) at 2.2.

29. SIGECO also replaced the last stage buckets for its low pressure turbine with buckets a new aerodynamic and mechanical design to increase the efficiency and availability of Unit 3 and tc accommodate the greater steam flow anticipated from the boiler changes. Scope of Work (Exh. 7) at 2.3, 3.40-3.41.

30. SIGECO performs regular maintenance on the blades in its turbines. This includes inspecting the blades for signs of wear and trying to catch blades that needed restoration or other work. This type of maintenance was generally done on a blade-to-blade basis, and was designed to prevent losses in availability of the unit that would be caused by failing blades. Reynolds Deposition (Exh. 8) at 183.

31. When SIGECO performs its major turbine outages, approximately every seven years, it may replace 1, 2, or 3 entire rows of blades in need of replacement. Blade replacement projects encompassing as many as five or six entire rows of blades would not occur unless "something catastrophic happens. Reynolds Deposition (Exh. 8) at 189-91.

32. In the Unit 3 Refurbishment all eight high rows of blades in the high pressure turbine were replaced and all five rows of blades in the intermediate pressure turbine were replaced. Scope of Work (Exh. 7) at 4.1, 4.25.

33. In the Work Order for the Unit 3 Refurbishment, SIGECO allocated $5.9 million of the budgeted cost of the project to Capital Account 312 (Boiler Plant Equipment). This included the cost of replacing the superheater and reheater outlets and the boiler feed pump element. Work Order. Ex. 5

34. In the Work Order for the Unit 3 Refurbishment, SIGECO allocated $11.5 million of the budgeted cost of the project to Capital Account 314 (Turbo-Generator Units). This included the cost of replacing the blades and buckets and installing packing in the high pressure, intermediate pressure, and low pressure turbines. Work Order (Exh. 5).

35. The $17.4 million budgeted cost for the Unit 3 Refurbishment exceeds the maintenance costs at Unit 3 for the years 1997 and 1998 combined. Expense Summary for Culley Plant. Exh 18.

36. SIGECO had not previously undertaken a replacement of all of the blades in the high

pressure or intermediate pressure turbine at any one time. Ensley Deposition (Exh. 17) at 74.

37. SIGECO increased the capacity of Unit 3 above the original design capacity for the Unit. Babcock & Wilcox, Engineering Study Report, June 10, 1997, (Exh. 9) at 2; Reynolds Deposition (Exh. 7) at 197-98, 233; Compare "Original GE Heat Balances" for Expected Steam Flov in Table 1 (Existing Plant) at Bates SIG 341286 to Exhibit 3 to "ADSP After Outage W/New Design 26"LSB," at Table 3 Bates SIG 341288, Exhibit 3 to Deposition of Ronald G. Jochum, Oct. 26, 2001 (Exh. 10).

38. SIGECO's parent, SIGCORP, referred to the project in its 1997 Annual Report to shareholders as a "major refurbishment." SIGCORP, Inc. 1997 Annual Report (Exh. 1) at 2.

DATED: May 16, 2002

Respectfully submitted,

FOR PLAINTIFF THE UNITED STATES

/s/

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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF INDIANA

UNITED STATES OF AMERICA,	)	
Plaintiff,	)	
v.	)	Civil Action No. IP99-1692 C-M/S
	)	JUDGE MCKINNEY
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY,	)	
	)	MAGISTRATE JUDGE SHIELDS
Defendant.	)	

MEMORANDUM IN SUPPORT OF THE UNITED STATES' MOTION FOR SUMMARY JUDGMENT THAT DEFENDANT'S 1997 MODIFICATION OF CULLEY STATION UNIT NO. 3 DOES NOT QUALIFY FOR THE REGULATORY EXEMPTION FOR "ROUTINE MAINTENANCE, REPAIR AND REPLACEMENT"

The United States submits this Memorandum in Support of its Motion for Summary Judgment that Defendant's 1997 Modification of its Culley Station Unit No. 3, a coal-fired electric generating unit, does not qualify for a regulatory exemption for "routine maintenance, repair and replacement" activities (Defendant's Answer, paras.65, 72, and 78). The general background, scope and proper interpretation of this exemption are explained in the United States' separate Memorandum in Support of its Motion for Summary Judgment on the Applicable Legal Test for Routine Maintenance and on Thirteen Affirmative Defenses (hereinafter referred to as "U.S. Motion for Summary Judgment on the Routine Maintenance Test"). This Memorandum analyzes the application of the "routine maintenance" exemption to the particular facts of Defendant's 1997

Modification of its Culley Station Unit 3. Defendant has moved for summary judgment that its 1997 Unit 3 modification is entitled to this exemption (SIGEGO's Motion for Summary Judgment Regarding the 1997 Unit 3 Project). The United States intends to respond to the arguments raised in that Motion in accordance with the schedule established by the Court in this case.

SUMMARY OF THE ARGUMENT

The Seventh Circuit has already decided the major legal issue in dispute in this case - whether replacement of major components of coal-fired utility boilers qualifies for the regulatory exemption of "routine maintenance, repair and replacement" activities from the Clean Air Act requirement that utilities obtain a permit and install state-of-the-art pollution controls when making modifications to such boilers. The answer was a resounding "no." *Wisconsin Electric Power Co. v. Reilly,* 893 F.2d 901 (7th Cir. 1990). In that case, decided more than 10 years ago and 7 years prior to Defendant's modifications of Unit 3, the Seventh Circuit fully endorsed EPA's interpretation of its own "routine maintenance" exemption as a narrow one intended to exempt only such minor activities as repair of "leaky pipes," and upheld EPA's determination that replacements of major boiler parts do not qualify for this exemption.

Despite this clear rule, SIGECO did exactly what the Seventh Circuit prohibited - it replaced major components of the Culley Unit 3 boiler without obtaining a permit or installing pollution controls. Defendant's own documents and the testimony of Defendant's own employees prove this. There is no genuine dispute as to any material fact that is necessary for this Court to make this determination. Therefore, the United States respectfully requests that this Court grant summary judgment that the 1997 modifications of Culley Unit 3 do not qualify for the regulatory exemption for "routine maintenance."

STATUTORY BACKGROUND

The statutory background of the Clean Air Act New Source Performance Standards and New Source Review provisions at issue in this case are fully explained in the United States' Memorandum in Support of its Motion for Summary Judgment on the Routine Maintenance Test. An abbreviated summary is set forth herein for the Court's convenience.

In 1970 Congress required EPA to establish New Source Performance Standards ("NSPS") for new and modified "stationary sources" in industries identified by EPA as significant contributors to air pollution. These sources were required to use the latest technology to control their emissions of air pollutants. 42 U.S.C. §7411. The New Source Review ("NSR") program was added to the Clean Air Act in 1977. The NSR program has two parts: 1) the "Prevention of Significant Deterioration" ("PSD") program, intended to prevent further deterioration of air quality in those areas of the country that are meeting the national air quality standards, 42 U.S.C. §§7470-7479; and (2) the "Non-Attainment NSR" program, intended to improve air quality in those areas that are failing to meet the national standards, 42 U.S.C. §§7501-7515). The NSR provisions require new and modified sources to obtain permits *before* they undertake construction projects if those projects will result in an increase in air emissions, and to install the required pollution control technology.[1]

When the NSPS and NSR requirements were enacted in the 1970's, Congress decided to ease the economic burden of compliance on existing sources of pollution by not requiring immediate

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[1] The PSD and Non-Attainment NSR programs are referred to collectively as the "New Source Review" or "NSR" program. In practice, the terms "NSR" and "PSD" are often used interchangeably. The key difference between the two programs is the level of pollution control required. The Non-Attainment NSR technology and other requirements are more stringent than the PSD requirements.

retrofitting of all existing sources with state-of-the-art pollution controls. (The sources that existed at the time of enactment of the new requirements are commonly referred to as "grandfathered" sources.) However, Congress required these sources to install pollution controls and to comply with the NSPS and NSR requirements when they undergo "modification," which Congress defined as:

> any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source....

42 U.S.C. § 7411(a).

In the seminal case of *Alabama Power Co. v. Costle*, 636 F.2d 323, 400 (D.C. Cir. 1979), the D.C. Circuit emphasized that the term "modification," as used in the Clean Air Act, "is nowhere limited to physical changes exceeding a certain magnitude." Congress fully expected that the "grandfathered" sources would either incorporate the required controls as they underwent "modifications" or would be phased out and replaced with new facilities that incorporate state-of-the-art pollution controls. *Alabama Power,* 636 F.2d at 400 ("the provisions concerning modifications indicate that this is not to constitute a perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit."). *Wisconsin Electric Power Co. v. Reilly,* 893 F.2d 901 (7th Cir. 1990) (the modification rule was designed to insure that pollution control measures would be taken at the time they are most effective-- at the time of new construction or modification).

REGULATORY BACKGROUND

The NSPS regulations are set forth at 40 C.F.R. Part 60. The NSR regulations are set forth at 40 C.F.R. Parts 51 and 52. EPA included in the regulations certain exemptions from the definition of "physical change," including an exemption for "routine maintenance, repair and replacement" activities. 40 C.F.R. §§51.166(b)(2)(iii), 52.21(b)(2)(iii), 52.24(f)(5)(iii), 60.14(e)(1).

The D.C. Circuit defined the limits of EPA's power to grant exemptions from the reach of the Clean Air Act's NSPS and NSR provisions in its 1979 *Alabama Power* decision. In that case, petitioners challenged EPA's regulation that would have provided an exemption from New Source Review requirements for facilities that emitted less than 50 tons of pollutants per year and for physical changes that do not qualify as "major." *Alabama Power*, 636 F.2d at 355-56, 399-400. The D.C. Circuit ruled that EPA did not have the power to grant this exemption from the reach of the New Source Review provisions. The Court further explained that EPA's power to grant exemptions was limited to *de minimis* exemptions and exemptions that are required by administrative necessity.

The only judicial decision addressing the meaning and application of the "routine maintenance" exemption under either the NSPS or the NSR regulations is the 7th Circuit's 1990 *WEPCo* decision. That decision ruled that the replacement of major components of a coal-fired boiler do not qualify for this exemption, as explained further below.

SUMMARY OF MATERIAL, UNDISPUTED FACTS

The United States' full Statement of Undisputed Facts in Support of this Motion for Summary Judgment is submitted herewith as a separate document. The key facts related to SIGECO's 1997 modifications of Culley Unit 3 are highlighted and summarized below. SIGECO argues that these modifications were not required to comply with the NSPS and NSR provisions because they fit within the regulatory exemption for "routine maintenance." Answer (paras.65, 72, and 78); SIGECO'S Motion for Summary Judgment Regarding the 1997 Unit 3 Project. The United States believes that this defense is without merit as a matter of law, based on the undisputed facts.

In 1997 SIGECO replaced a number of major components of Unit No. 3 at Culley Station, including the secondary superheater outlet, the reheater outlet, and extensive parts of the turbine-

generator. The boiler components, the secondary superheater outlet and the reheater outlet, were at or near the end of their useful lives, according to SIGECO, and their replacement extended the life of the Unit 3 boiler. The Unit was originally constructed in 1973. The boiler components had not been previously replaced and are now expected to last until 2025.

The project was also intended to increase the Unit's steam-generating capacity by over 8% and combined with newly designed turbine components was designed to raise Unit 3's electrical output by 25.8 million megawatts (MW) of electricity (from 261 MW per hour to 287 MW per hour), by using new design for some of the replacement components. The project was budgeted at $17.4 million and was paid from two capital accounts, not the facility's maintenance budget. The budgeted cost of the project exceeded the total maintenance costs at Unit 3 for the years 1997 and 1998 combined. The project took 11 weeks to complete (from October to December 1997), and required the services of three outside engineering firms. The work was performed by outside contractors using craftsmen who worked in two 10-hour shifts per day, with 20-25 craftsmen assigned to each shift.

SIGECO's parent, SIGCORP, referred to the project in its 1997 Annual Report to shareholders as a "major refurbishment."[2] Since 1997, SIGECO has regularly operated the unit at the higher capacity level that was made possible by this major renovation.

STANDARD OF REVIEW

Under Fed. R. Civ. P. 56, summary judgment is proper where "'there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.'" *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). Although evidence must be viewed in the light most

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[2] SIGCORP, Inc. 1997 Annual Report (Exh. 1) at 2.

favorable to the non-moving party, *Adickes v. S. H. Kress & Co.*, 398 U.S. 144, 158-59 (1970), the non-moving party must go beyond the pleadings and "present affirmative evidence in order to defeat a properly supported motion for summary judgment." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 257 (1986); *see also Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986).

ARGUMENT

I. THE 7TH CIRCUIT HAS ALREADY RULED THAT REPLACEMENT OF MAJOR COMPONENTS OF COAL-FIRED UTILITY BOILERS DOES NOT QUALIFY FOR THE "ROUTINE MAINTENANCE" EXEMPTION

The Seventh Circuit ruled in *Wisconsin Electric Power Co. v. Reilly,* 893 F.2d 901 (7th Cir. 1990) ("the *WEPCo* decision") that replacement of major components of coal-fired electric generating units does not qualify for the NSPS and NSR regulatory exemption for "routine maintenance." As explained in the United States' Memorandum in Support of its Motion for Summary Judgment on the Routine Maintenance Test, this rule has *stare decisis* effect in this case.

The Seventh Circuit's analysis in the *WEPCo* case began with a review of the Congressional intent of the NSPS and NSR statutory provisions. The Seventh Circuit found that "[e]ven at first blush, the potential reach of these modification provisions is apparent: the most trivial activities--the replacement of leaky pipes, for example--may trigger the modification provisions if the change results in an increase in the emissions of a facility." 893 F.2d at 905. The Court noted that Congress did not intend to provide "indefinite immunity [to grandfathered facilities] from the provisions of NSPS and PSD," *id.* at 909; and that "courts considering the modification provisions of NSPS and PSD have assumed that '*any* physical change' means precisely that." *Id.* at 908 (emphasis added) (citations omitted). *Alabama Power Co. v. Costle*, 636 F.2d 323, 400 (D.C. Cir. 1979) ("the term

'modification' is nowhere limited to physical changes exceeding a certain magnitude" (emphasis added).

In construing EPA's regulatory exemption for "routine maintenance" in *WEPCo*, the Seventh Circuit noted that EPA's interpretation of its own regulation was entitled to "substantial deference."

> Courts have generally accorded substantial deference to the EPA's interpretation of the Clean Air Act Amendments, reasoning that "considerable weight should be accorded to an executive department's construction of a statutory scheme it is entrusted to administer. . . ." [citations omitted] This deference with regard to the Clear Air Act follows logically from the highly technical provisions of the Amendments.

893 F.2d at 906, quoting *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 844.[3]

The *WEPCo* case involved a challenge by the Wisconsin Electric Power Co. ("WEPCo") to an EPA administrative determination, set forth in a Memorandum from Don R. Clay, Acting Assistant Administrator for Air and Radiation, to David Kee in 1988[4] ("Clay Memorandum"). That determination explained EPA's analysis of whether WEPCo's modifications qualified for the "routine maintenance" exemption, focusing primarily on the following four factors:

(1) the nature and extent of the work;

(2) the purpose of the work;

(3) the frequency with which this type of work is conducted; and

(4) the cost of the work.

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[3] The "routine maintenance" exemption must also be interpreted under the legal principle that regulatory exclusions from generally applicable statutes and regulations must be given a narrow construction. *Auer v. Robbins*, 519 U.S. 452, 462-63 (1997).

[4] Memorandum from Don Clay, Acting Assistant Administrator of EPA, to David Kee, Director of the Air and Radiation Division, EPA Region 5 (Sept. 9, 1988) (Exh. 2).

Clay Memorandum (Exh. 2) at 3-6.

Considering first the *nature and extent* of WEPCo's proposed project, EPA noted that the project involved replacing major boiler components of considerable size and of critical functional importance to the operation of the units. Further, the project could not be performed during normal operations of the facility, but required a several-month shutdown or "outage" of the units.

Second, EPA considered the *purpose* of the WEPCo project, focusing on whether it varied from the ordinary reason a source undertakes routine maintenance -- *i.e.*, keeping the unit operating in its present condition. WEPCo told EPA that "age-related deterioration" had resulted in a decrease of total plant capability and that the proposed project was necessary to allow the plant to continue operation beyond its expected life. Clay Memorandum (Exhibit 2), at pp. 3-4. EPA viewed this "life extension" purpose as a strong indicator that the project was non-routine. Moreover, a project is more likely to be non-routine if it will "enhance the present efficiency and capacity of the plant and substantially extend its useful economic life." *Id.* at 4. EPA concluded that WEPCo's "wide-ranging life extension program to perform a broad array of tasks . . .[that] correct other age-related deterioration" was not "routine maintenance, repair and replacement" because it had the purpose of increasing the capability of the unit as it existed prior to the physical change. *Id.*

Third, EPA considered the *frequency* with which projects such as WEPCo's proposed project were performed. EPA noted that WEPCo's steam drum replacement was a project that would be undertaken once or twice, if ever, in the life of a boiler. Citing forty other utility sources who had replaced air heaters, EPA rejected WEPCo's claim (in WEPCo's request for reconsideration) that this evidence demonstrated that its replacement of its air heaters was "routine maintenance:"

> Further, even the list of air heater replacement work submitted by WEPCo did not establish this as routine repair work. Those 40 units comprise only a small fraction of

> total operating utility units, and even at the 40 units, air heater repair or replacement *appears to have been a one-time occurrence, not routine repair.*[5]

Finally, EPA considered the *cost* of the proposed construction -- both whether the absolute cost of the project was significant and whether the relative cost of the project was a significant percentage of the replacement cost of the unit. *See* Clay Memorandum (Exh. 2) at 6 & n.3. WEPCo's capital costs for work at four units were estimated to be $70.5 million and represented 15 percent of the replacement cost of the facility. *Id.* Further, EPA noted, the project required a significant expenditure of capital, rather than maintenance funds. *Id.*

In sum, the 1988 Clay Memorandum and 1989 Clay Letter made clear EPA's view that a costly capital project at a utility boiler that occurs rarely, after many years of service, requires significant time and outage of the unit to perform, increases the operating capability of a unit (and therefore its emissions), and extends the useful life of the unit does not qualify for the "routine maintenance" exemption from NSPS and NSR regulation.

The Seventh Circuit upheld EPA's analysis and conclusion that the WEPCo modifications did not qualify for the "routine maintenance" exemption. 893 F.2d at 909-912. First, the Court noted that WEPCo's projects involved replacement of very large parts (60-foot drums and air heaters at four units) during successive nine-month outages. *Id.* at 911. Second, the Court focused on the fact that WEPCo's own documents indicate that WEPCo did not regard this repair and replacement project to be ordinary or routine. *Id.* The Court held that where replacing components with a long useful life will extend the life expectancy of the unit, EPA was justified in concluding that the work

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[5] Letter from Don R. Clay to John W. Boston, Vice President, WEPCo, Feb. 15, 1989 ("1989 Clay Letter") (Exh. 32) at 7, n. 6

was not routine. *Id.* at 912. The Seventh Circuit flatly rejected WEPCo's argument that any "replacement" project should be considered "routine maintenance":

> WEPCO reasons that . . . *any* replacement project will presumably extend the life of a facility. . . . WEPCO's analysis is ultimately wide of the mark. While it is certainly true that the repair of deteriorated equipment will contribute to the useful life of any facility, it does not necessarily follow that the repairs in question would extend the *life expectancy* of the facility.

WEPCo, 893 F.2d at 912. The Court noted that adopting WEPCo's interpretation would "open vistas of indefinite immunity from the provisions of NSPS and PSD." *Id.* at 909.

Since the Seventh Circuit's *WEPCo* decision was issued in 1990, there have been no further judicial cases arising from a regulated industry's request for an applicability determination from EPA with respect to whether a physical change at a stationary source qualifies for the routine maintenance exemption. Indeed, very few utilities have asked EPA for a formal administrative determination on the applicability of this exemption to their projects since the *WEPCo* decision was issued in 1990.

In 2000, EPA's highest administrative appellate body, the Environmental Appeals Board (the "EAB"),[6] considered another case involving replacement of major components of a coal-fired boiler, and ruled again that this activity does not qualify for the "routine maintenance" regulatory exemption. *In the Matter of the Tennessee Valley Authority*, 9 E.A.D., 2000 WL 1358648, CAA Docket No. 00-6 (U.S. Envtl. Prot. Agency Sept. 15, 2000), *EAB Final Order* (Exh. 3).[7] *See also*

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[6] The EAB is a panel of administrative judges appointed by the Administrator of EPA, which operates independently of EPA Enforcement and other agency components.

[7] TVA is currently challenging the EAB's ruling in the Eleventh Circuit Court of Appeals. *Tenn. Valley Auth., et al. v. U.S. EPA, et al.*, Consolidated under lead Docket No. 00-12310-E (11th Cir. 2000). Oral argument on the merits is scheduled for May 21, 2002.

EPA "applicability determination" that Detroit Edison's proposed replacement of the entire high pressure sections of the steam turbines for two units at its Monroe Power Plant did not qualify for the "routine maintenance" exemption (Letter from Francis X. Lyons, EPA Regional Administrator, to Henry Nickel, May 23, 2000) (Exh. 4). In all of these administrative determinations, EPA consistently has reached the same result: construction projects involving replacement of major components of utility boilers do not qualify for the "routine maintenance" exemption.

II. SIGECO'S 1997 MODIFICATION OF CULLEY UNIT 3 DOES NOT QUALIFY FOR THE "ROUTINE MAINTENANCE" EXEMPTION

A. SIGECO Has the Burden of Proving that the Exemption Applies

SIGECO, as the party seeking to utilize the "routine maintenance" exemption, bears the burden of proof that the exemption is applicable. *United States v. An Article of Device... "Toftness Radiation Detector"*, 731 F. 2d 1253, 1260-61 (7th Cir. 1984) (a party claiming the benefit of a regulatory exemption has the burden of proof unless contrary to the statute underlying the regulation); *See also United States v. First City Nat'l Bank of Houston*, 386 U.S. 361, 366 (1967) (a party claiming the benefits of a statutory exception has the burden of establishing that it falls within the exception); *Federal Trade Commission v. Morton*, 334 U.S. 37, 44-45 (1948) (the general rule of statutory construction that the burden of proving justification or exemption under a special exception to the prohibitions of a statute generally rests on one who claims its benefits...."). *See also EAB Final Order* (Exh. 3) at 42-43 (TVA had burden of proving applicability of routine maintenance exemption).

Placing the burden of proving the applicability of the "routine maintenance" exemption on SIGECO is especially appropriate because the evidence concerning the applicability of the exemption lies particularly within its knowledge. *United States v. An Article of Device... "Toftness*

Radiation Detector", 731 F. 2d at 1262 ("Because the appellants are claiming the application of an exemption to the general labeling requirements, and because they appear to be in the better position to come forward with evidence that the [medical device] works safely and effectively, we conclude that the district court properly instructed the jury that the claimants had the burden of proving that the prescription device exemption applied to the [medical device in question].") *Nader v. Allegheny Airlines, Inc.*, 512 F.2d 527, 538 (D.C. Cir. 1975), *rev'd on other grounds*, 426 U.S. 290 (1976). ("Although a plaintiff generally carries the burden of persuasion on each element of his cause of action, special circumstances may lead a court to shift the burden of persuasion to the defendant on some part of the claim. One special circumstance commonly accepted is that the burden will be shifted where the material necessary to prove or disprove an element 'lies particularly within the knowledge' of the defendant"). The evidence relevant to determining whether SIGECO's construction projects at the Culley Station were "routine maintenance" – namely the information concerning the nature and extent, purpose, frequency and cost of this project - was "particularly within the knowledge" of SIGECO. This information was not available to EPA until it undertook the investigation of the Culley Station projects that led to the filing of the Complaint in this action.

B. SIGECO's Own Documents and the Testimony of its Employees Show <u>That its 1997 Refurbishment of Unit 3 Was Not "Routine Maintenance"</u>

SIGECO's 1997 Unit 3 Refurbishment project plainly does not qualify for EPA's "routine maintenance" regulatory exemption . The project was not routine at all for Unit 3, as shown by an analysis of the project using the four-factor test developed by EPA and upheld by the 7th Circuit in *WEPCo.* 893 F.2d at 910-912.

1. ***<u>Nature and Extent of the Project</u>***. Like the project in *WEPCo*, SIGECO's 1997 Refurbishment project was "substantial." 893 F.2d at 910. This project involved the replacement of

several major components of Unit 3, including (1) replacement of the secondary superheater outlet, (2) replacement of the reheater outlet, (3) installation of aero-derivative high pressure-intermediate pressure turbine, (4) replacement of the boiler feed pump element, (5) replacement of low pressure turbine buckets, and (6) installation of retractable packing in the turbine. SIGECO Work Order No. 7101211, May 1997 (Exh. 5). SIGECO itself designated this project as a "major refurbishment." 1997 SIGCORP Annual Report (Exh. 1) at 16.

Superheater and Reheater Outlet Replacements. SIGECO usually addresses tube leaks and failures by padwelding the tube over the leak, plugging the tube if the location is inaccessible for repair work, or replacing a small section of tube, an entire tube, or even a small group of tubes.[8] Instead, in this case, SIGECO replaced the outlet sections of the secondary superheater and reheater in their entirety. SIGECO replaced 60 sections of the superheater outlet and 95 sections of the reheater outlet.[9] The process of disassembling the old superheater and reheater outlets and installing the new outlets took approximately 8 weeks, with about 20-25 craftsmen working double shifts (two ten-hour shifts per day), 6 days a week.[10] The new secondary superheater outlet was redesigned to increase steam flow through the boiler by 8%. Scope of Work (Exh. 7) at 4.2. This increased Unit

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[8] Deposition of Gordon Hurst, pursuant to Rule 30(b)(6), January 16, 2002 (Exh. 6) at 135-37, 144-45.

[9] General Electric/Babcock & Wilcox Equipment and Services Proposal to SIGECO for Unit Refurbishment and Outage Services, Culley Unit 3 (April, 1997) ("Scope of Work") (Exh. 7) at 4.2 - 4.3. SIGECO considered this proposal to be the scope of work for the Unit 3 Refurbishment. Deposition of Michael Sandefur (Exh. 16) at 223 (Exh 7 to this Memorandum is Exh. 15 to the Sandefur Deposition).

[10] Deposition of Billy Joe Reynolds, November 30, 2001, (Exh. 8) at 225-26; Scope of Work (Exh. 7) at 4.27.

3's generating capacity beyond its original design capacity.[11] The new reheater outlet also included a design change, reducing surface area. Scope of Work (Exh. 7) at 4.2.

Turbine Refurbishment and Upgrade. A new design, known as the Advanced Design Steam Path, was also used in the replaced turbine blades and buckets. SIGECO's contractors, General Electric and Babcock & Wilcox, characterized these changes as the "replacement of the high pressure and intermediate pressure steam path." Scope of Work (Exh. 7) at 2.2. This design change allowed the turbine-generator to increase electrical generation by an additional 3%. All of the blades and nozzles in the high pressure and intermediate pressure turbines were replaced. Scope of Work (Exh. 7) at 4.1; Reynolds Deposition (Exh. 8) at 184. SIGECO has a usual maintenance practice for its turbine blades that involves inspecting individual blades for signs of wear and performing restoration or other work on a blade-to-blade basis. Reynolds Deposition (Exh. 8) at 183. Approximately every seven years, SIGECO performs major turbine outages, in which 1, 2 or 3 rows of blades may be replaced. Blade replacement projects involving as many as 5 or 6 entire rows of blades would not occur unless "something catastrophic happens." Reynolds Deposition (Exh. 8) at 189-91. In stark contrast to this usual maintenance practice, the 1997 project involved replacement of all eight rows of blades in the high pressure turbine and all five rows of blades in the intermediate pressure turbine at once. Scope of Work (Exh. 7) at 4.1, 4.25. This plainly was not the "routine maintenance" SIGECO normally performs on turbine blades. In a strikingly similar situation, EPA ruled that a project involving the redesign and replacement of blades in just the high pressure part of

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[11] Babcock & Wilcox, Engineering Study Report, June 10, 1997, (Exh. 9) at 2; Reynolds Deposition (Exh. 7) at 197-98, 233; Compare "Original GE Heat Balances" for Expected Steam Flow" in Table 1 (Existing Plant) at Bates SIG 341286 to Exhibit 3 to "ADSP After Outage W/New Design, 26"LSB," at Table 3 Bates SIG 341288, Exhibit 3 to Deposition of Ronald G. Jochum, Oct. 26, 2001, (Exh. 10).

the turbines for two units at an electric utility plant failed to qualify for the routine maintenance exemption because the purpose of the replacement was to enhance the efficiency of the high pressure turbine rather than the company's usual practice of replacing deteriorated blades incrementally. Letter from Francis Lyons, EPA Region V Administrator to Henry Nickel, Counsel for Detroit Edison Co., May 23, 2000 (Exh. 4) at 2.

Capacity Increase. Together, the new designs of the replaced superheater outlet section and the turbine generator enabled Unit 3 to increase its generating capacity (and therefore its capacity to emit pollutants) by 10%. An officer of SIGECO apparently tried to mask the capacity increase aspect of the project in the project documentation by directing the SIGECO's project manager to change the March 1997 version of the work proposal from "Capacity Uprate and Outage Services" to "Refurbishment." Reynolds Deposition (Exh. 8) at 200-01.

2. ***Purpose of the Project***. The reports of SIGECO's contractors and the testimony of its employees show that the purpose of the Unit 3 Refurbishment was to replace major components that were reaching the end of their useful lives.[12] The replacement of parts in the 1997 Refurbishment extended the lifetime of Unit 3.[13] After the project was done, SIGECO did not expect to have to replace the secondary superheater and reheater until 2025 or later. Scope of Work (Exh. 7) at 1.3. This "life extension" purpose was cited by EPA and the 7th Circuit in the *WEPCo* case as a clear indication that a project is not "routine maintenance." See *WEPCo* decision 893 F.2d at 910, 912 and Clay Memorandum (Exh. 2) at 4. As shown above SIGECO's 1997 Unit 3 Refurbishment

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[12] Babcock & Wilcox Condition Assessment Summary, Secondary Superheater and Reheater, February 17, 1997, (Exh. 9) at 2, 2-3 through 2-4 and 5-2 through 5-3; Hurst 30(b)(6) Deposition (Exh. 6) 206; Jochum Deposition (Exh. 10) at 69-74.

[13] Deposition of SIGECO employee Eric Robeson, October 25, 2001, ("Robeson Deposition") (Exh. 12) at 172.

project was also intended to change the design of the unit and to upgrade the unit's generating capacity.

3. ***Frequency***. The 1997 Refurbishment of Unit 3 was a rare, one-time occurrence in the history of this unit. The Unit was originally constructed and began operation in 1973. *See* SIGECO Petition to Modify Operating Permit, Sept. 23, 1997 (Exh 13) at 1. The 1997 Refurbishment was the first complete replacement of the secondary superheater outlet section and the reheater outlet section, and the first complete replacement of all the blades in the high pressure and intermediate pressure turbines, in this unit. Reynolds Deposition (Exh.8) at 158. Deposition of Dirk Ensley (Ex. 17) at 72-74, 131-32. Thus, there is no difference in the "frequency" factor between SIGECO's 1997 Refurbishment of Unit 3 and WEPCo's once-or-twice-in-a-lifetime project at its Port Washington plant. As EPA and the 7th Circuit ruled in *WEPCo*, the rarity of this type of project is an additional indication that it is not "routine maintenance." 893 F.2d at 912.

4. ***Cost***. The 1997 Refurbishment of Unit 3 was originally budgeted for a cost of $17.4 million. Work Order (Exh. 5). The entire amount was allocated to SIGECO's capital account, not to the Culley maintenance account. *Id.* Indeed, the cost of the project was exceeded the entire Culley maintenance account for the years 1997-98. SIGECO 1998 Expense Summary for the Culley Plant (Ex. 18). The high cost of the project is another significant factor indicating that it was not "routine maintenance." While the cost of this project was not as high as the projected $70 million cost of the WEPCo project, it is substantial. Moreover, a direct comparison of the costs of the two projects is misleading, because the WEPCo project involved the renovation of 5 units at the Port Washington plant, 893 F.2d at 905, whereas the 1997 Culley project involved only one unit. If the $17.4 million cost of the 1997 Culley project were extrapolated five-fold, it would be $87 million - more than the Port Washington project . In any event, the fact that SIGECO's 1997 project far exceeded the Culley

maintenance budget and was charged to capital accounts is a clear indication that it did not fit within SIGECO's normal understanding and practice of "routine maintenance."[14]

On balance, analysis of the four-factor test used by EPA and the 7th Circuit in *WEPCo* demonstrates plainly that the 1997 Refurbishment project for Culley Unit 3 was not "routine

---

[14] In their depositions in this case, a SIGECO officer and manager attempted to argue that not only the 1997 modification, but virtually any type of project at the utility's boilers, would be "routine maintenance":

> Q. What type of project ... at one of the Culley boilers .. [would] not be routine maintenance? Can you envision such a thing?
>
> A. Yes, I would suppose that ... a total change in fuel source would probably not be routine.
>
> Q. Are you saying such as from coal to natural gas?
>
> A. Yes.
>
> Q. Okay. Can you give me any other indications of any other types of projects that would not be routine maintenance?
>
> A. No.

Deposition of Ronald G. Jochum, SIGECO Vice President of Power Production, October 26, 2001 (Exh. 10), at 184.

> Q. [W]hat would be a non-routine change [in a unit] like Unit 3?
>
> A. From an industry's perspective?
>
> Q. From your perspective.
>
> A. Changing it to a nuclear plant.
>
> Q. Okay. Anything else?
>
> A. Something on that magnitude.

Deposition of Billy Joe Reynolds, former Culley Plant Manager, November 3, 2001 ("Reynolds Deposition") (Exh. 8) , at 234.

The fallacy of SIGECO's argument that everything but a change to gas or nuclear power is "routine maintenance" is betrayed both by its nonsensical end result (the exception would "swallow the rule"), and by the absurdity of some of the statements that it led SIGECO's employees to make: "I would expect abnormal repairs and replacements to be routine." Reynolds Deposition at 237.

maintenance." This was a major capital project designed to increase the capacity and extend the life of this generating unit for many years in the future.

III. THE STATE OF INDIANA'S DECISION THAT THE 1997 MODIFICATION OF CULLEY UNIT 3 WAS "ROUTINE MAINTENANCE" WAS ERRONEOUS AND DOES NOT BIND EPA OR THIS COURT

SIGECO makes much of the fact that it succeeded in obtaining the State of Indiana's concurrence in its analysis of the 1997 modification of Unit 3 as "routine maintenance." See SIGECO Motion for Summary Judgment Regarding the 1997 Unit 3 Project. As demonstrated in the U.S. Motion for Summary Judgment on the Routine Maintenance Test at 26-31, the State's conclusion was clearly erroneous as a matter of law, resulted from SIGECO's own misrepresentations of the Seventh Circuit's holding in the *WEPCo* decision, and does not bind EPA or this Court. In addition, Indiana's concurrence was issued after the fact, on January 27, 1998; construction of the 1997 Unit 3 modification was completed on December 20, 1997. Id. at ___. In fact, EPA disavowed its conclusion both before and after it was written. Id. at ___; Portanova Declaration, Ex. 27 at ¶¶ 12-13, 15. The mistake of a State agency provides no excuse for ignoring the clear mandates of Congress and the Seventh Circuit that "grandfathered" sources must install pollution controls when they are modified.

CONCLUSION

The Court should grant Plaintiff United States' Motion for Summary Judgment that the 1997 modification of Unit 3 at the Culley Station does not qualify for the regulatory exemption for "routine maintenance, repair and replacement" activities from the Clean Air Act's New Source Performance Standards and New Source Review requirements.

DATED: May 16, 2002

Respectfully submitted,

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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF INDIANA

UNITED STATES OF AMERICA, Plaintiff, v. SOUTHERN INDIANA GAS AND ELECTRIC COMPANY, Defendant.	:	Civil Action No. IP99-1692-C-M/S

UNITED STATES' MEMORANDUM IN SUPPORT OF THE MOTION FOR SUMMARY JUDGMENT ON THE APPLICABLE LEGAL TEST FOR ROUTINE MAINTENANCE AND ON THIRTEEN AFFIRMATIVE DEFENSES

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Statement of Issues

1. Whether this Court is bound by the doctrine of stare decisis to follow EPA's interpretation of the exemption for routine maintenance, repair, and replacement, which was upheld by the Seventh Circuit in *Wisconsin Electric Power Co. v. Reilly*, 893 F.2d 901 (7th Cir. 1990) ("*WEPCO*").

2. Whether this Court is bound to follow EPA's interpretation of the exemption for routine maintenance, repair, and replacement because EPA has reasonably interpreted its own regulations.

3. Whether the United States is barred from enforcing the Clean Air Act against SIGECO because of an erroneous legal opinion from the State of Indiana.

4. Whether the defendant had constitutionally adequate notice of how EPA interprets the exemption for routine maintenance, repair, and replacement after *WEPCO*.

5. Whether the equitable defenses of estoppel, waiver, and laches should be stricken because they are not a defense to liability under the Clean Air Act and because the defendant cannot satisfy each element of the defenses.

I. Introduction and Summary of Argument

The United States alleges that SIGECO violated the Clean Air Act by failing to obtain an appropriate permit, and by failing to comply with other requirements to control air pollutants, when the company modified its Culley plant in 1991, 1992, and 1997. SIGECO contends in part that these requirements did not apply because its construction projects qualified for an exemption applying to "routine maintenance, repair, and replacement." The meaning and application of the exemption is one of the key issues in this case. In this memorandum, the United States seeks partial summary judgment on a number of legal issues relating to EPA's interpretation of the exemption.

First, the United States seeks a ruling that EPA's interpretation of the exemption applies in this case. EPA is applying the same interpretation here that was upheld by the Seventh Circuit in *Wisconsin Electric Power Co. v. Reilly*, 893 F.2d 901 (7th Cir. 1990) ("*WEPCO*"). This interpretation has three distinguishing hallmarks. First, the exemption is narrowly construed, in keeping with EPA's limited authority to exempt activities from coverage under the Clean Air Act. Second, the exemption only applies to activities that are routine for a typical generating unit. An activity is not routine simply because it is prevalent within the utility industry as a whole. Third, the exemption does not apply categorically to any activity in the utility industry. Each activity must be reviewed case-by-case, taking into account the nature, extent, purpose, frequency and cost of the activity. EPA continues to follow this interpretation, most notably in a recent decision by EPA's highest administrative court. *See In re: Tennessee Valley Authority* (CAA Docket No. 00-6) (Sept. 15, 2000) (appeal pending).

The Seventh Circuit's decision is not only important because it upheld EPA's interpretation. The Seventh Circuit also rejected the same arguments that SIGECO is expected to make in this case.

We expect SIGECO to argue that an activity is "routine," and thus exempt, when the activity is prevalent within the utility industry. The same argument was presented by another utility to EPA and the Seventh Circuit in *WEPCO*. Neither the agency nor the court found the argument persuasive. Under the doctrine of stare decisis, this Court is bound to apply EPA's interpretation of the exemption for routine maintenance, repair, and replacement in this case.

The United States also seeks partial summary judgment on eight affirmative defenses that relate to EPA's interpretation of the routine maintenance exemption. While these defenses have somewhat different elements, at the heart of each defense is the contention that EPA's interpretation was unforeseeable when SIGECO modified its plant in 1991, 1992, and 1997. Applying EPA's interpretation, the defendant contends, deprives SIGECO of a constitutional or statutory right. These defenses are: (a) fair notice (fifth affirmative defense); (b) substantive due process (ninth affirmative defense); (c) retroactive rulemaking (thirteen affirmative defense); (d) arbitrary and capricious administrative action (fourteenth affirmative defense); (e) ultra vires administrative action (fifteenth affirmative defense); (f) violation of the Federal Register Act (twenty-first affirmative defense); (g) Congressional review of agency rule making (twenty-second defense); and (h) violation of the Administrative Procedure Act (twenty-third defense).

We show in this memorandum that SIGECO cannot establish any of these defenses because EPA's interpretation -- the one upheld in *WEPCO* -- was known before each modification and has never changed. The Court also lacks jurisdiction to consider certain defenses that pertain to review of final agency action. Under the Clean Air Act, jurisdiction for such challenges is reserved exclusively to the United States Circuit Courts of Appeal. 42 U.S.C. § 7607(b). In sum, the defendant may not like

EPA's interpretation of the exemption, but the interpretation is lawful, consistent with the purposes of the Clean Air Act, and applies in this case.

Finally, the United States seeks partial summary judgment on the equitable defenses of laches (third defense), estoppel (fourth defense), and waiver (seventeenth defense), as well as two other defenses that are based on an erroneous legal opinion given by the State of Indiana in 1998. These additional defenses are privity (twelfth defense) and non-applicability determination (eleventh defense). By these defenses, SIGECO asserts that EPA cannot enforce the Clean Air Act in this case because of actions taken by state employees. These defenses fail as a matter of law, because state employees have no authority to excuse a utility from complying with its obligations under the Clean Air Act. The equitable defenses also fail because the defendant does not have evidence to satisfy each required element.

II. Standard of Review

Under Fed. R. Civ. P. 56, partial summary judgment is proper where the court finds that "'there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.'"[1] *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). The mere existence of a factual dispute is not enough to defeat a summary judgment motion. Rather, the opposing party must present "definite, competent evidence to rebut the motion." *EEOC v. Sears, Roebuck Co.*, 233 F.3d

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[1] Fed. R. Civ. P. 56(c) provides that summary judgment

> shall be rendered forthwith if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.

432, 437 (7th Cir. 2000) (quotation omitted). "If the nonmoving party fails to make a sufficient showing on an essential element of her case, the moving party is entitled to judgment as a matter of law because a complete failure of proof concerning an essential element of the [nonmovant's] case necessarily renders all other facts immaterial." *Quantum Management Group, Ltd. v. University of Chicago Hospitals*, 283 F.3d 901, 905 (7th Cir. 2002) (quotation omitted).

III. Statutory and Regulatory Background

A. Summary

The Clean Air Act requires any "major emitting facility" to obtain a federally authorized permit before beginning a "modification." The term "modification" generally means "any physical change" that increases the rate or kind of air pollutants. A "physical change" under the Act includes a wide range of activities, from major construction projects to the repair of leaky pipes. There is no exemption in the Act for "routine maintenance, repair, and replacement," but there is one in EPA regulations that implement the Act. The exemption has a narrow scope, because EPA only has authority to create de minimis exemptions from the statutory scheme and exemptions required by administrative necessity.

B. Overview and New Source Requirements

The Clean Air Act of 1970[2] established a comprehensive Federal program to protect the public health and welfare from the harmful effects of air pollution. 42 U.S.C. § 7401(b)(1). The 1970 Act reflected Congress' finding that earlier attempts to control air pollution, primarily by the states, had

[2] The Air Pollution Control Act was enacted in 1955, and the Clean Air Act was originally enacted in 1963, Pub. L. 88-206, 77 Stat. 392. As a result of the 1977 Amendments, Pub. L. 95-95, 91 State. 685 (1977), its provisions were recodified at 42 U.S.C. § 7401 *et seq.*

failed. Congress reacted to this failure, as Justice Rehnquist observed, "by taking a stick to the states." *Train v. Natural Resources Defense Council*, 421 U.S. 60, 64 (1975). "These Amendments sharply increased federal authority and responsibility in the continuing effort to combat air pollution." *Id.*

Section 109 of the Act required EPA to establish national ambient air quality standards ("NAAQS") that specify the maximum permissible concentration of air pollutants in different areas of the country. *WEPCO*, 893 F.2d at 904. The Act requires states to meet these NAAQS by developing plans, called State Implementation Plans ("SIPs"), which impose regulatory requirements on individual sources. 42 U.S.C. §§ 7410(a)(1), (a)(2). Although states have primary responsibility for administering and enforcing SIPs, EPA may directly enforce an approved SIP as federal law, either in federal district court or through an EPA administrative action. 42 U.S.C. §§ 7413. EPA's independent enforcement authority is a critical part of the Clean Air Act. "As Congress recognized, the tension between a state's concern for its environment and its desire to maintain and build an industrial base is ever present. Independent federal enforcement authority is critical to ensure that states do not relax their enforcement efforts in an attempt to attract industry." *United States v. Ford Motor Co.*, 736 F. Supp. 1539, 1550 (W.D. Mo. 1990).

The Clean Air Act uses two general approaches for controlling air pollution from new or modified sources. One approach, called New Source Review, uses technology-based permit limits to control the total amount of pollution emitted from a particular source. A second approach, called New Source Performance Standards ("NSPS"), imposes regulatory limits on the rate at which pollutants are emitted from particular kinds of sources, such as electric utility steam generating units. These approaches are discussed in more detail below.

1. **New Source Review.** The Clean Air Act generally requires owners and operators of certain sources to obtain permits before beginning "construction," including "modification," of existing pollution sources. These provisions are in Title I, Parts C and D of the Act, and are called new source review. One of the new source review programs is designed to prevent significant deterioration of air quality in areas that are in "attainment" of the NAAQS, or are "unclassifiable." 42 U.S.C. §§ 7470-79, 7491-92. Indiana's Warrick County, the location of SIGECO's Culley plant, has been designated as an attainment or unclassified area for nitrogen dioxide, sulfur dioxide, and particulate matter at all times relevant to modifications in this case. 40 C.F.R. § 81.315.

The regulatory program for protecting air quality in attainment areas is commonly called "PSD," which stands for "prevention of significant deterioration." Regulations in this program generally prohibit a person from beginning construction of a major stationary source or a major modification without a PSD permit. 40 C.F.R. § 52.21(i). During the permitting process, the reviewing authority will identify emission limitations for the facility and require other measures relating to emission control. 42 U.S.C. § 7475(a). The most significant requirement is to install the best available control technology, commonly called "BACT," for controlling emissions.[3] The federal regulations implementing PSD provisions of the Clean Air Act have been incorporated by reference into the Indiana SIP. *See* 40 C.F.R. § 52.793.

2. **New Source Performance Standards.** Enacted in 1970, the NSPS program requires EPA to issue federal performance standards (codified at 40 C.F.R. Part 60) based on "best

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[3] "Best available control technology" is an emissions limitation based on the maximum degree of reduction of each pollutant that a permitting authority determines is achievable for a particular facility. 42 U.S.C. § 7479(3). BACT may involve the installation of equipment, the use of different fuel, or restrictions on operating methods.

demonstrated technology." These standards apply to categories of new sources that cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. 42 U.S.C. § 7411(b)(1)(B). A "new source" is "any stationary source, the construction *or modification* of which is commenced after the publication of" an applicable performance standard. 42 U.S.C. § 7411(a)(2) (emphasis added). Over twenty years ago, EPA promulgated new source performance standards for electric utility steam generating units, applicable to construction or modification commenced after September 18, 1978. 40 C.F.R. §§ 60.40a-49a.

C. Clean Air Act's Definition of "Modification"

Congress did not impose the NSPS or PSD programs immediately on existing sources. To strike a balance between cleaner air and economic growth, Congress required instead that pollution control measures be undertaken at the time of new construction or a modification. *WEPCO*, 893 F.2d at 909. The term "modification" is broadly defined in the Clean Air Act to mean "***any physical change*** in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." 42 U.S.C. § 7411(a)(4) (emphasis added). Both parts of this definition -- a physical change and an emissions increase -- must be satisfied before an activity will be considered a "modification." *WEPCO*, 893 F.2d at 907.

The term "any physical change" means exactly that. *Id.* at 908; *Alabama Power Company v. Costle*, 636 F.2d 323, 400 (D.C. Cir. 1980) ("the term 'modification' is nowhere limited to physical changes exceeding a certain magnitude"). The Seventh Circuit has found that the term applies broadly, such that even "the most trivial activities – the replacement of leaky pipes, for example -- may trigger

the modification provisions if the change results in an increase in the emissions of a facility." *WEPCO*, 893 F.2d. at 905.

D. The Regulatory Exemption for "Routine Maintenance, Repair and Replacement"

Although there is no exemption in the Clean Air Act for trivial or routine activities, EPA regulations do exempt "[r]outine maintenance, repair, and replacement" from the definition of "physical change." The exemption appears in both new source review regulations and NSPS regulations. *See* 40 C.F.R. §§ 52.01(d)(1), 52.21(b)(2)(iii), 52.24(f)(5) (NSR regulations); 40 C.F.R. § 60.14(e) (NSPS regulations). EPA regulations do not define the term "routine." When interpreting this term, its dictionary meaning (habitual, regular, ordinary) and the objectives of the Clean Air Act are important guides. *See WEPCO*, 893 F.2d at 908 (interpreting the term "modification" in harmony with Clean Air Act's objectives). In particular, the term's scope is constrained by EPA's limited authority to create exemptions from Clean Air Act requirements, a central holding in *Alabama Power Company v. Costle*, 636 F.2d 323 (D.C. Cir. 1980).

In *Alabama Power*, the D.C. Circuit reviewed PSD regulations that EPA prepared in response to the 1977 Clean Air Act amendments. EPA proposed to create exemptions from the statute's broad definition of "modification" for sources that emit less than 50 tons of pollutants per year, and for physical changes that do not qualify as "major." *Id.* at 355-56 (50 ton exemption); 399-400 (physical change exemption). The D.C. Circuit struck down these exemptions as beyond EPA's authority.

The court's discussion of an agency's authority to promulgate exemptions is instructive here. "Categorical exemptions from the clear commands of a regulatory statute, though sometimes permitted,

are not favored." *Id.* at 358. Exemptions may be appropriate in cases of administrative necessity, such as when the literal terms of the statute "would, as a practical matter, prevent the agency from carrying out the mission assigned to it by Congress." *Id.* at 358. But the agency's burden of proving these conditions is "especially heavy," and requires some evidence at least that the agency has attempted to implement the statute in good faith, and been unable to perform. *Id.* at 359.

Categorical exemptions may also be appropriate in de minimis circumstances. "Courts should be reluctant to apply the literal terms of a statute to mandate pointless expenditures of effort." *Id.* at 360. The ability to exempt de minimis circumstances, however, "is not an ability to depart from the statute, but rather a tool to be used in implementing the legislative design." *Id.* "Unless Congress has been extraordinarily rigid, there is likely a basis for an implication of de minimis authority to provide exemption when the burdens of regulation yield a gain of trivial or no value. That implied authority is not available for a situation where the regulatory function does provide benefits, in the sense of furthering regulatory objectives, but the agency concludes that the acknowledged benefits are exceeded by the costs." *Id.* at 360-61.

Using these principles, the D.C. Circuit rejected EPA's attempt to categorically exclude plants that emit less than 50 tons annually. The court also rejected EPA's attempt to exempt certain physical changes from the definition of "modification." The court noted that "the term 'modification' is nowhere limited to physical changes exceeding a certain magnitude," and that EPA was constrained to follow the clear language. *Id.* at 400. In light of the statute's broad reach, the court found that EPA's authority to promulgate exemptions was very limited:

> Implementation of the statute's definition of "modification" will undoubtedly prove inconvenient and costly to affected industries; but the clear language of the statute unavoidably imposes these costs except for de minimis increases. The statutory scheme intends to "grandfather" existing industries; but the provisions concerning modifications indicate that this is not to constitute a perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit.

Id. at 400. EPA's limited authority to grant exemptions is an important guide for evaluating EPA's interpretation of the routine maintenance exemption in this case.

IV. Argument Concerning EPA's Interpretation

A. Summary of Argument

EPA's interpretation of the routine maintenance exemption has three hallmarks. First, the exemption is narrowly construed, in keeping with its status as a de minimis exemption. Second, the exemption applies to activities that are routine for a typical generating unit. The prevalence of an activity within the utility industry does not determine whether the activity is routine. Third, no activitie in the utility industry are categorically exempt as routine maintenance, repair, or replacement. Each activity is reviewed case-by-case, taking into account the activity's nature, extent, purpose, frequency, and cost. The Seventh Circuit upheld EPA's interpretation in 1990, and EPA has not deviated from it. This Court is bound to follow the Seventh Circuit's decision in *WEPCO* by the doctrine of stare decisis, and because EPA's interpretation of its own regulation is reasonable.

B. The Seventh Circuit Upheld EPA's Interpretation in *WEPCO*

In *WEPCO*, the Seventh Circuit reviewed EPA's final determination that renovations planned by the Wisconsin Electric Power Company were not exempt as routine maintenance, repair, or

replacement.[4] Wisconsin Electric planned to repair or replace both large and small components at its Port Washington plant, including turbine-generators, boilers, mechanical and electrical auxiliaries, and the common plant support facilities. *WEPCO*, 893 F.2d at 906. The company sought guidance from EPA on whether these projects qualified for the routine maintenance exemption under PSD and NSPS regulations. When EPA determined that the planned renovations were not routine, Wisconsin Electric sought review by the Seventh Circuit. To understand EPA's interpretation and the Seventh Circuit's ruling in context, we discuss below the arguments that Wisconsin Electric presented to EPA and the Seventh Circuit. This discussion demonstrates that EPA and the Seventh Circuit have already considered and rejected the interpretation that SIGECO is expected to make in this case.

1. Wisconsin Electric argued that "routine" means commonly undertaken in the industry.

Wisconsin Electric presented its interpretation of the routine maintenance exemption to EPA in a July 1988 memo prepared by the law firm of Hunton & Williams.[5] In this memo, Wisconsin Electric argued that the exemption allowed utilities "to undertake activities that are customary and in accordance with established business procedure." Hunton & Williams Memo at 11 (Exh.19). If a company's business procedure is "to repair and replace components that are needed to retain or restore the original design capacity of a facility or to allow the facility to operate in a safe and reliable manner at

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[4] The Seventh Circuit also reviewed EPA's determination that the renovations would result in emission increases. This part of the court's ruling, which was adverse to EPA, is not germane to the routine maintenance exemption.

[5] Letter from John Boston, Wisconsin Electric Power Company, to Donald Clay, EPA (July 29, 1988) and accompany memorandum ("Hunton & Williams Memo") (Exh.19).

that actual design capacity, repair and replacements pursuant to this procedure are routine." Hunton & Williams Memo at 31 (Exh. 19). In other words, "routine replacement is synonymous with replacement 'in kind' -- replacing a worn-out component or failed plant component with a substantially equivalent component."[9] Hunton & Williams Memo at 31 (Exh.19).

Wisconsin Electric argued that the exemption did not turn on how frequently a component was replaced during a generating unit's lifetime. In the company's view, the exemption applied not only to components that need periodic repair and replacement during their lifetime, but also to components that need replacement only "once or twice in the life of a facility, . . . if normal business procedure would be to undertake that activity when needed." Hunton & Williams Memo at 31 (Exh. 19). Wisconsin Electric contrasted its interpretation with the interpretation of EPA staff:

> The EPA staff seem to consider the replacement work to be non-routine because replacement of a rear steam drum at a power plant is not frequently done and steam drums are not a component that is expected to need replacement during the life of a plant. However, as discussed below, the fact that a component has never before been replaced at a plant, or is not a component replacement that plants of that type often need or are expected to need, does not render that replacement "non–routine." The relevant question is whether undertaking the replacement is customary and within the realm of established business procedure.

Hunton & Williams Memo at 12-13 (footnotes omitted); see also pp. 30-32 (Exh. 19).

Wisconsin Electric recognized that its interpretation of the exemption would apply broadly. The

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[9] In August 1997, SIGECO also argued that like-kind replacements are routine when claiming the routine maintenance exemption for a project. *See* Letter from Anthony Sullivan, Barnes & Thornburg, to Commissioner, Indiana Dept. of Environmental Management (Aug. 22, 1997), at 2 (Exh. 20).

company stressed that facilities in every industry customarily repair and replace equipment, even major equipment, to maintain their investments and their design capacity. According to Wisconsin Electric, the exemption was intended to apply broadly in order to cover these common activities. Hunton & Williams Memo at 1-2, 5, 11, 31 (Exh. 19).

2. EPA rejected Wisconsin Electric's argument and focused instead on whether an activity is routine within the life of a generating unit.

EPA responded to Wisconsin Electric's argument in a memo from Don Clay, EPA's Acting Assistant Administrator for Air and Radiation.[7] EPA intended this memorandum to be used not only by Wisconsin Electric, but also by other utilities who might seek to claim the routine maintenance exemption.[8] The Clay Memo rejects Wisconsin Electric's interpretation and identifies each hallmark of EPA's interpretation.[9]

First, the Clay Memo stated that PSD regulations apply broadly and exemptions apply narrowly. "The clear intent of the PSD regulations is to construe the term 'physical change' very broadly, to cover virtually any significant alteration to an existing plant. This wide reach is demonstrated by the very narrow exclusion provided in the regulations: other than certain uses of alternative fuels not

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[7] Memorandum from Don Clay, Acting Assistant Administrator of EPA, to David Kee, Director of the Air and Radiation Division, EPA Region 5 (Sept. 9, 1988) ("Clay Memo") (Exh.2).

[8] EPA stated, "This memorandum provides a framework for analyzing the proposed changes at Port Washington and gives EPA's views on relevant issues of legal interpretation. It should also be useful in assessing other so-called 'life extension' projects in the future." Clay Memo at 2 (Exh.2).

[9] EPA's analysis of the exemption applied equally to PSD and NSPS regulations. Clay Memo at 10 (Exh.2).

relevant here, only 'routine maintenance, repair and replacement' is excluded from the definition of physical change [see 52.21(b)(2)(iii)(a)]." Clay Memo at 3 (Exh.2).

Second, the Clay Memo stressed that the exemption is applied on a case-by-case basis by looking at several factors. "In determining whether proposed work at an existing facility is 'routine,' EPA makes a case-by-case determination by weighing the nature, extent, purpose, frequency, and cost of the work, as well as other relevant factors, to arrive at a common-sense finding." Clay Memo at 3 (Exh.2).

Third, the Clay Memo evaluated whether the work proposed by Wisconsin Electric was routine for a generating unit. EPA noted that the project would involve the replacement of major components in several units, and that this work would involve prolonged outages at each unit. Clay Memo at 4 (Exh. 2). EPA noted the length of outages at each unit, and that the work differed in kind from "repetitive maintenance" normally performed during these outages. *Id.* EPA noted that the purpose of the project was to significantly extend the life of five units at the plant, and discussed problems at each of the units. EPA noted that the work was rarely, if ever, performed during a unit's expected life cycle. *Id.* EPA also that the work was costly, and that a substantial portion of the work at the units was designated as a capital cost. In sum, EPA found that the "available information indicates that the work proposed at Port Washington is far from being a regular, customary, or standard undertaking for the purpose of maintaining the plant in its present condition." Clay Memo at 3-4 (Exh. 2).

The Clay Memo notably did ***not*** endorse the arguments urged by Wisconsin Electric, that "routine" is measured by "established business procedure" and not by the frequency of an activity within

the life of a unit. As the Seventh Circuit found in *WEPCO*, "the Clay Memorandum dismissed [Wisconsin Electric's] contention that the program was routine and was therefore exempt from the requirements of the NSPS and PSD." *WEPCO*, 893 F.2d at 906. After the EPA Administrator adopted this determination *in toto*, Wisconsin Electric appealed the determination to the Seventh Circuit. *Id.* at 906.

3. EPA's view that an activity must be routine within the life of a generating unit was widely recognized.

The electric utility industry recognized that EPA interpreted the exemption narrowly to cover only activities that are routine within the life of a generating unit. In January 1990, sixty-four utilities and three utility associations asked the EPA Administrator to reconsider the agency's interpretation.[19] The utilities expressed their strong disagreement with EPA's interpretation, which they characterized this way: "Under the WEPCo interpretations, any 'non-routine' (defined by these decisions as 'infrequent') repair or replacement at a plant will require a source either to accept a 'cap' on its current operations or to undergo new source review and face costly additional controls. According to your staff, the proscribed activities may include 'minor component replacements and design changes as well as general rehabilitation of existing equipment.'" January 1990 Industry Letter at 3 (Exh. 21).

Wisconsin Electric made similar arguments in its brief to the Seventh Circuit. The company argued that, under EPA's interpretation, routine activities did not include activities that were infrequently

[19] Letter from Henry Nickel, Hunton & Williams, to William Reilly, EPA Administrator (Jan. 19, 1990) ("January 1990 Industry Letter") (Exh.21).

done, extended the facility's normal life, or involved the replacement of "major" equipment.[11] Wisconsin Electric Brief at 41-45 (Exh.22). The company again made its "customary business procedure" argument, and its argument that "like-kind replacement of deteriorated equipment" is routine. Wisconsin Electric Brief at 42 (Exh.22). The company also argued that the word "routine" does not turn on whether equipment has been replaced frequently at a particular generating unit. "In accordance with the plain meaning of this term," the company argued, "replacement of a piece of equipment only once or twice in the life of a unit may be routine if accepted industry procedure is to replace that equipment when it deteriorates . . . ." Wisconsin Electric Brief at 47 (Exh.22). The company asked the Seventh Circuit to find that EPA's interpretation was arbitrary and capricious, retroactively applied, and made without prior notice and comment rulemaking. *See, e.g.*, Wisconsin Electric Brief at 21-25 (Exh.22). The Seventh Circuit, however, rejected these arguments.

4. The Seventh Circuit upholds EPA's interpretation.

The Seventh Circuit was not persuaded by Wisconsin Electric's arguments and upheld EPA's interpretation of the routine maintenance exemption. *WEPCO*, 893 F.2d 901 (7th Cir. 1990). The court began its analysis with the principle that courts defer to an agency's construction of its own regulations, particularly when the subject being regulated is technical and complex. *WEPCO*, 893 F.2d at 910. "We accord substantial deference to an agency's interpretation of its own regulations,

[11] Petitioner's Initial Brief, *Wisconsin Electric Power Company v. Reilly*, (7th Cir.) (May 24, 1989) ("Wisconsin Electric Brief") (excerpts at Exh. 22).

especially with respect to technical and complex matters."[12] *Id.*

The court then reviewed EPA's interpretation of the exemption in the Clay Memo and found that EPA's interpretation was reasonable. The court agreed that the magnitude of the project, which involved replacement of large components in several units, suggested that it was "more than routine." *Id.* at 911. The court noted that the project differed from the repetitive maintenance that was normally performed at the plant, and cited the Clay Memo's conclusion that the project was unprecedented at the Port Washington plant. *Id.* The Seventh Circuit was particularly persuaded that the work was not routine because the proposed renovations would normally occur only once or twice during a unit's expected life cycle. *Id.* at 912. In sum, the court found that EPA's focus on the "routineness" of an activity for a generating unit was reasonable.[13]

The import of the Seventh Circuit's decision was clear to industry. In February 1990 memorandum, the utility industry again presented its concerns to the EPA Administrator.[14] While strongly disagreeing with the *WEPCO* decision and with EPA's interpretation, the utility industry clearly

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[12] This principle is an independent basis for upholding EPA's interpretation in this case. *See Auer v. Robbins*, 519 U.S. 452, 461 (1997) (authoritative agency interpretation of its own regulations is entitled to substantial deference); *Stinson v. United States*, 508 U.S. 36, 45 (1993) (agency's interpretation of its regulations must be given controlling weight unless it is plainly erroneous); *Arkansas v. Oklahoma*, 503 U.S. 91, 112 (1992) (EPA's interpretation of Oklahoma's water quality standards is entitled to substantial deference).

[13] Notably, the court rejected Wisconsin Electric's position that like-kind replacements are necessarily routine. Although the court characterized the work as a like-kind replacement, *WEPCO*, 893 F.2d at 917, it still found that the work was not routine.

[14] Letter from Henry Nickel, Hunton & Williams, to William Reilly, EPA Administrator (Feb. 7, 1990) and accompanying memo ("February 1990 Industry Memo") (Exh. 23).

recognized that its interpretation had been rejected. With respect to the Seventh Circuit's decision on routine maintenance, the utilities stated: "While the court may have reached a different result if the cost of the project were less, the down time shorter, and the components replaced different, the court suggested that the Agency could enforce the rule even where 'the most trivial' of repair activities (i.e., replacement of a 'leaky pipe') was found by EPA not to be 'routine.'" February 1990 Industry Memo at 3 (internal footnotes omitted).

C. This Court Is Bound To Follow EPA's Interpretation Under The Doctrine Of Stare Decisis.

The Seventh Circuit considered and upheld EPA's interpretation of the routine maintenance exemption in *WEPCO*. The Seventh Circuit's decision binds this Court. "Ordinarily a lower court has no authority to reject a doctrine developed by a higher one." *Olson v. Paine, Webber, Jackson & Curtis*, 806 F.2d 731, 734 (7th Cir. 1986). This rule of stare decisis "is of fundamental importance to the rule of law" because it "promotes stability, predictability, and respect for judicial authority." *United States v. Aman*, 31 F.3d 550, 554 (7th Cir. 1994) (internal quotations and citations omitted). To reject the course set by a higher court, a lower court must find that "events subsequent to the last decision by the higher court approving the doctrine – especially later decisions by that court, or statutory changes – make it ***almost certain*** that the higher court would repudiate the doctrine if given a chance to do so . . . ." *Olson*, 806 F.2d at 734 (emphasis added). As in this case, a lower court must be wary of departing from circuit court precedent when presented with the same arguments that were previously rejected by the higher court. *See Bethesda Lutheran Homes and Services, Inc. v. Born*, 238 F.3d 853, 858 (7th Cir. 2001).

There are no events that warrant a departure from the interpretation upheld in *WEPCO*. As discussed below, EPA continues to hold the interpretation set forth in *WEPCO*. The defendant's interpretation is nothing more than a rehash of the same arguments that were presented and rejected by EPA and the Seventh Circuit over a decade ago.

1. EPA continues to follow the interpretation in *WEPCO*, as demonstrated by its recent decision against the Tennessee Valley Authority.

EPA continues to follow the interpretation upheld in *WEPCO*, most notably in a final order of the agency's Environmental Appeals Board ("EAB") against the Tennessee Valley Authority ("TVA").[19] This administrative case arose when an EPA regional office cited TVA for modifying its power plants without obtaining a PSD permit. After discovery and a hearing conducted before an administrative law judge, the matter was submitted to the EAB on the merits for findings of fact and conclusions of law.

The EAB rejected TVA's primary defense that the projects were undertaken as routine maintenance, repair, and replacement. In doing so, the EAB applied the same interpretation upheld by

[19] *In re: Tennessee Valley Authority*, CAA Docket No. 00-06 (Sept. 15, 2000) ("EAB Final Order") (Exh.3). The EAB has received the EPA Administrator's delegated authority to render final decisions with regard to many administrative appeals arising under EPA-administered statutes. The EAB is an impartial, four-member body, independent of all Agency components outside the immediate Office of the Administrator. 57 Fed. Reg. 5320, 5322 (Feb. 13, 1992). The final order issued in the TVA matter constitutes an authoritative statement of EPA's official and final position on the interpretation of the routine maintenance exemption. The final order is now on appeal to the Eleventh Circuit, with oral argument scheduled for May 21, 2002.

the Seventh Circuit in *WEPCO*.[16] The EAB recognized that the exemption was narrow, in keeping with EPA's limited authority to exempt modifications that have only a de minimis impact on air quality. EAB Final Order at 46-47 (Exh.3). The EAB used EPA's four factor test to evaluate whether an activity is routine, and that this test should be applied on a case-by-case basis. EAB Final Order at 49-52 (Exh.3). The EAB also firmly rejected TVA's interpretation that an activity is routine when it is prevalent in the industry. In upholding the interpretation urged by EPA's enforcement office, the EAB held that "it is the frequency of the activity at other *individual* units within the industry that seems to us most relevant in this context. The mere fact that a number of different facilities within an industry may have undertaken these projects strikes us as less instructive with respect to whether a project under review should be considered 'routine,' than the observation that this kind of replacement is, for an individual unit, an unusual or once or twice-in-a-lifetime occurrence." EAB Final Order at 52 (emphasis in original) (Exh.3).

2. SIGECO bears a heavy burden to show that EPA changed its interpretation after *WEPCO*.

We expect SIGECO to argue that EPA somehow changed its interpretation between the *WEPCO* decision and the decision against TVA, and adopted the position that an activity is "routine" when the activity is prevalent within the utility industry. SIGECO bears a heavy burden in proving this argument, for it must show first that EPA *could* lawfully adopt the defendant's interpretation after *WEPCO*, second that EPA *actually did* adopt that interpretation, and third that this Court should

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[16] The EAB stated that "EPA Enforcement's articulation of the test is essentially the same as that articulated in internal Agency guidance from over a decade ago" in the WEPCO case. EAB Decision at 48 n.34 (Exh.3).

follow that interpretation.

EPA's authority to adopt the defendant's interpretation is highly doubtful. As discussed earlier, EPA has extremely limited authority to promulgate exemptions from the Clean Air Act. The agency's authority is limited to circumstances of administrative necessity (which EPA has never claimed) and circumstances having a "de minimis" or "trivial" impact on emissions. *Alabama Power*, 636 F.2d at 358-61.

The defendant's interpretation does not fit the description of a "de minimis" exemption. The defendant urges that "routine" activities are activities that are prevalent within the utility industry. For the defendant, an activity can be routine even if it is rare within the life of a typical generating unit. If economizer replacements are prevalent in the industry but rare for an individual unit, the defendant would consider this practice routine. On its face, the defendant's interpretation is considerably broader than EPA's. It also results in a categorical exemption (e.g., all economizer replacements are routine), rather than the case-by-case approach upheld in *WEPCO*.

A closer look reveals that the defendant's interpretation would exempt almost every maintenance, repair, or replacement performed by a utility. Since the number of times an activity has been performed increases as time goes on, virtually *every* maintenance, repair, or replacement eventually becomes prevalent, and thus routine, under the defendant's interpretation. Rather than defining a de minimis exemption, the defendant's interpretation would leave few modifications subject to regulation. The defendant's interpretation of the exemption would swallow the rule.

If SIGECO could show that EPA had the authority to adopt the defendant's interpretation, it would still have to show that EPA *did* adopt it and that the Court should follow the interpretation. The

defendant's burden is also heavy here. In general, the defendant would have to show that the "new" interpretation actually reflects the views of the agency, and not the views of staff or others without authority to speak for EPA. *Homemakers North Shore, Inc. v. Bowen*, 832 F.2d 408, 412-13 (7th Cir. 1987). The defendant would also have to produce convincing evidence that EPA renounced its earlier interpretation. EPA clearly rejected the defendant's interpretation in the 1988 Clay Memo, and successfully defended its decision in the Seventh Circuit. To adopt the defendant's interpretation after *WEPCO* would have been an abrupt about-face in EPA policy. Such an abrupt change would require at least a well-reasoned explanation from the agency, if not notice and comment rulemaking.[17]

3. Statements in a July 1992 Federal Register do not establish that EPA had adopted SIGECO's interpretation.

To show a change in EPA's interpretation, we expect SIGECO to rely mainly upon one sentence in the preamble to a July 1992 rule on NSR and NSPS issues.[18] The preamble is published at

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[17] *See Dehainaut v. Pena*, 32 F.3d 1066, 1074 (7th Cir. 1994) ("'[a]n agency changing its course must apply a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored'") (internal citation omitted). The Seventh Circuit has considered but not decided whether an agency can change a previously established interpretation of a regulation without following notice and comment procedures. *See Paragon Health Network, Inc. v. Thompson*, 251 F.3d 1141, 1147 n.4 (7th Cir. 2001). It is clear, however, that the Seventh Circuit carefully scrutinizes dramatic changes in interpretation before accepting them. This is especially true if the Agency announces the interpretation through informal means. *See U.S. Freightways Corp. v. Commissioner of Internal Revenue*, 270 F.3d 1137, 1141 (7th Cir. 2001) (noting that informal agency statements warrant less deference).

[18] Other documents include a report prepared by the General Accounting Office, a federal body not associated with EPA, and various letters from EPA officials to members of Congress. None of these documents expressly interpret the routine maintenance exemption, and none possess the formal status, clarity, and persuasiveness necessary to accomplish an "about face" in EPA's regulatory interpretation. The United States will address these documents individually in the event the defendant argues them to the Court.

57 Fed. Reg. 32,314 (July 21, 1992) (excerpts at Exh.24). The rule discussed in this preamble does not address the routine maintenance exemption. Rather, the rule adopts an exclusion for pollution control projects and a new methodology for calculating emission increases at utilities. The rule only applies to the utility industry. EPA considered a rule that would apply to all industrial source categories, but found that "the complexity of that task meant that a rule could not be developed in a short time frame, a fact that posed unique and serious difficulties for one source category, utilities." 57 Fed. Reg. at 32,333 (Exh.24).

SIGECO relies upon one sentence in the preamble where EPA spoke briefly to the meaning of the routine maintenance exemption. This sentence reads, "EPA is today ***clarifying*** that the determination of whether the repair or replacement of a particular item of equipment is 'routine' under the NSR regulations, while made on a case-by-case basis, must be based on the evaluation of whether that type of equipment has been repaired or replaced by sources within the relevant industrial category." 57 Fed. Reg. at 32,326 (emphasis added) (Exh. 24). EPA's decision to evaluate "routineness" in the context of particular industries is consistent with the scope of the 1992 rule. EPA limited the 1992 rule to the utility industry because it was too difficult to find one regulatory approach that worked across all industries. SIGECO, however, reads much more into EPA's statement. SIGECO interprets the language to endorse the interpretation rejected in *WEPCO*, namely that repair or replacement of equipment is routine if that activity is prevalent within the utility industry. The preamble simply does not support SIGECO's interpretation.

In the TVA decision, EPA itself rejected an interpretation of the 1992 preamble now urged by SIGECO. EPA found the interpretation unsupported by the Clean Air Act, a narrow reading of the

exemption, and the preamble itself. EAB Decision at 49-52 (Exh.3). The EAB found that "the language in the 1992 preamble merely explains that in determining whether an activity is 'routine,' the applicability of the exclusion must be assessed in the context of the particular industry in which the activity is planned. Indeed, the frequency with which certain kinds of activities have been undertaken at another comparable plant can be instructive in determining whether, for example, an activity never before undertaken, or seldom undertaken, at a unit under review should be regarded as routine." EAB Decision at 52 (Exh.3).

SIGECO's reading of the 1992 preamble is also unsupported by an independent review of the preamble. SIGECO reads the preamble to support an interpretation that EPA and the Seventh Circuit had rejected only two years earlier. There is no evidence in the preamble that EPA intended such an "about face" in its interpretation. Nowhere does EPA express an intention to make such a change, or discuss why such a change would be appropriate and lawful under the Clean Air Act. To the contrary, the preamble shows that EPA did not intend an abrupt change in its interpretation. Although some people submitted comments asking EPA to define or provide guidance on the exemption, EPA said that the rule would not address these requests. 57 Fed. Reg. at 32,326 (Exh.24). Instead, EPA made a brief statement in the preamble "clarifying" its interpretation, a choice of language that signaled EPA's intent not to substantively change its interpretation. The Seventh Circuit gives great weight to this intent: "[W]e give great weight to an agency's expressed intent as to whether a rule clarifies existing law or substantively changes the law. If the agency expressly communicates that its intention in issuing the regulation was to clarify rather than change existing law, courts should defer to such announcements unless the revisions are in plain conflict with earlier interpretations." *First National Bank of Chicago*

v. Standard Bank & Trust, 172 F.3d 472, 478 (7th Cir. 1999).

V. Argument Concerning Affirmative Defenses

A. Summary of Argument

Most of SIGECO's affirmative defenses are based on two factual arguments concerning the routine maintenance exemption. SIGECO claims that it is excused from violating the law because the State of Indiana assured the company that its 1997 modification was routine, and thus exempt. SIGECO also claims that EPA adopted the defendant's interpretation of the routine maintenance exemption after *WEPCO,* and that the government is barred from using a different interpretation in this case under various constitutional, statutory, and equitable theories. These defenses fail as a matter of law. This Court is bound to follow EPA's interpretation of the routine maintenance exemption, which was upheld by the Seventh Circuit in *WEPCO* before any of the modifications in this case. The defendant is also bound by this interpretation. None of the defendant's legal theories excuse the defendant from complying with the law as interpreted by EPA. We begin this section by discussing Indiana's erroneous opinion on the 1997 modification, and then turn to specific affirmative defenses.

B. The State of Indiana erroneously informed SIGECO that the 1997 project was routine *after* the project was complete, and this opinion was based on a material misrepresentation from SIGECO.

SIGECO's primary defense on its 1997 modification is an assertion that it relied on a letter from the State of Indiana, which agreed that the upgrade work performed on Unit 3 qualified as routine maintenance, repair, and replacement. As shown below, SIGECO obtained this letter from Indiana by making a material misrepresentation about the Seventh Circuit's holding in *WEPCO*. Moreover, SIGECO could not have relied on the letter for PSD purposes because the letter was not written until

after SIGECO had completed the Unit 3 boiler modifications.

A full discussion of the Unit 3 modification is contained in the United States' accompanying motion for partial summary judgement. For purposes of this brief, the Court should know that SIGECO approved a major capital expenditure for the project in May 1997,[19] and completed work on the project during an extended outage that lasted more than ten weeks, from October 2, 1997 to December 20, 1997.[20] Unit 3 returned to operation when the outage ended.[21]

After the company decided to go ahead with the Unit 3 work, SIGECO's attorneys wrote to state officials contending that the work on Unit 3 qualified for the routine maintenance exemption. SIGECO's analysis was brief. SIGECO argued that the Unit 3 work was exempt because it was a like-kind replacement, "the kind of work normally conducted by electric utilities." Barnes & Thornburg Letter at 2 (Exh.20). This is the same argument that EPA and the Seventh Circuit rejected in *WEPCO*. But SIGECO does not disclose this fact to state officials. Instead, SIGECO tells Indiana the exact opposite: "The WEPCO court determined that 'like-kind replacements' constitute 'routine maintenance, repair, and replacement' and clearly SIGECO's proposed changes constitute 'like-kind replacements.'" *Id.* This statement was a material misrepresentation of the holding in *WEPCO*. Not only did SIGECO's attorneys misrepresent the *WEPCO* holding to state officials, but SIGECO knew at the time that its characterization of *WEPCO* was wrong. In a company deposition, SIGECO

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[19] Work Order 7101211 (Exh. 5).

[20] Outage/Refurbishment Report (SIG 109921) (Exh. 25).

[21] Deposition of Gordon Hurst pursuant to Rule 30(b)(6), at 169 (Exh.26) ("SIGECO Depo").

admitted that its managers knew at the time of the 1997 modification that like-kind replacements were not necessarily routine. SIGECO Depo at 186-88 (Exh. 26).

In October 1997, the State sought guidance from EPA on whether the work SIGECO planned to undertake was subject to PSD or NSPS regulations. The State provided a cursory description of the work and a discussion of its effect on emissions, but did not mention the routine maintenance exemption.[22] EPA spotted the issue, however, and told the State that the project did not appear to be routine. In an e-mail, EPA told Indiana that "the proposed modifications are not like-kind replacements and are clearly intended to increase unit capacity and improve efficiency, not just replace components as part of routine maintenance." Portanova Decl. at ¶ 13 with attachment.

In January 1998, after SIGECO completed the Unit 3 modification, a state official inexplicably wrote SIGECO that the Unit 3 work was exempt because the project involved a like-kind replacement. Portanova Decl. at ¶ 14 with attachment. The State official wrote, "we have determined that the replacement of the existing steam tubes and turbine blades can be considered a 'like-kind replacement' under 326 IAC 2-2-1 for purposes of PSD. Additionally, this activity by SIGECO falls under the 'maintenance, repair, and replacement' exemption for 326 IAC 12-1 for NSPS." *Id.*

The State's letter is irregular in several respects. On its face, the letter relies on a legal interpretation that is plainly wrong, namely that like-kind replacements are routine. This incorrect legal interpretation is the reason why Indiana found the project to be exempt. The State official who signed the letter testified in her deposition that she never would have authorized the letter if she knew that

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[22] Declaration of Sam Portanova ("Portanova Decl.") at ¶ 12 with attachment. (Exh.27).

"routine" did not mean "like-kind replacement."[23] The letter is also irregular because its author is unknown,[24] and because it does not reflect the views of the permit engineer assigned to the application. The permit engineer assigned to the matter thought that the Unit 3 project was neither routine nor like-kind, and was expecting to send a formal request to EPA for guidance when she learned about the exemption letter. Sizemore Depo at 39-40, 48, 54-55, 144 (Exh. 30).

When EPA learned of the letter many months later, EPA informed SIGECO that Indiana's letter was in error and that the Culley Unit 3 project did not qualify for the routine maintenance exemption. Portanova Decl. at ¶ 15. In sum, the State's letter was based on a material misrepresentation made by SIGECO and was written after the fact of the modification under questionable circumstances. EPA disavowed its conclusion both before and after it was written. The letter proves nothing except that SIGECO knew that it was at risk in refurbishing the Unit 3 boiler without complying with the Clean Air Act.

C. The Clean Air Act does not excuse SIGECO from complying with the law based on erroneous information from the State.

In several affirmative defenses, SIGECO contends argues that the State of Indiana's opinion excuses the company from complying with the law. These defenses include equitable estoppel (fourth defense) non-applicability determination (eleventh defense), and privity (twelfth defense). Nothing in the Clean Air Act, however, excuses a company from complying with the law because of erroneous

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[23] Deposition of Felicia Robinson (March 19, 2002) at 29-31 (Exh.28)

[24] Deposition of Nisha Sizemore (Nov. 8, 2001) at 182 (Exh.30) ("Sizemore Depo); Deposition of Paul Dubenetsky (March 18, 2002) at 64-66 (Exh. 29).

information from a state. The United States asks for a ruling that SIGECO's entitlement to the routine maintenance exemption hinges on the law itself, and not on an incorrect opinion issued by the State of Indiana.

Section 113 of the Clean Air Act expressly authorizes EPA to sue for violations of a state implementation plan. EPA may sue the owner or operator of a major stationary source "[w]henever such person has violated, or is in violation of, any requirement or prohibition of an applicable implementation plan or permit." 42 U.S.C. § 7413(b)(1). EPA need only give 30 days' notice to the State before bringing suit to enforce a state implementation plan. *Id.* Nothing in the statute requires Indiana to agree with EPA's allegations. Indeed, such a requirement would be entirely contrary to the legislative scheme, which was designed to prevent states from excusing violations as a way of attracting industry. *See, e.g., United States v. Ford Motor Co.*, 736 F. Supp. at 1550.

EPA explicitly retained its enforcement powers in the documents that explain the terms of its delegation to Indiana. For example, the document delegating authority for PSD states, "If the State enforces the delegated provisions in a manner inconsistent with the terms and conditions of this delegation or the Clean Air Act, USEPA may exercise its enforcement authority contained in the Clean Air Act with respect to sources within the State of Indiana subject to PSD provisions." Portanova Decl. at ¶ 5 and EPA5PW1007164 (Exh.27). The delegation for NSPS authority similarly claims EPA's right to enforce the Indiana SIP: "This delegation in no way limits the Administrator's concurrent enforcement authority as provided in Sections 111(c)(2) and 112(d)(2) of the Clean Air Act." *Id.* at ¶ 10 and EPA5PIN002269. EPA also prohibited Indiana from deviating from federal interpretations of Clean Air Act requirements. *Id.*

Indiana's 1998 opinion letter to SIGECO illustrates the wisdom of retaining independent enforcement authority. SIGECO proposed an interpretation of the routine maintenance exemption to the State that was wrong on its face, and inconsistent with the company's own view of the law. The State mistakenly accepted this interpretation, even though EPA advised the State at the time that the Unit 3 project was not exempt. Without federal enforcement authority, errors like this one would go uncorrected to the detriment of public health.

D. SIGECO's fair notice defense does not excuse SIGECO from complying with the law.

The United States also seeks partial summary judgment on SIGECO's affirmative defense of fair notice. The affirmative defense of "fair notice" arises from the Due Process Clause, which requires that a person receive fair notice of what the law requires or prohibits before being deprived of property. *Mullane v. Cent. Hanover Bank & Trust Co.*, 339 U.S. 306, 314 (1950). SIGECO claims that it lacked notice of how EPA interpreted the exemption for routine maintenance, repair, and replacement when the company modified its plant in 1991, 1992, and 1997. The defendant bears the burden of proving this defense. *United States v. Krumrei*, 258 F.3d 535, 538 (6th Cir. 2001) ; *United States v. Avant*, 907 F.2d 623, 625 (6th Cir. 1990); *cf. United States v. Dierckman*, 201 F.3d 915, 927 (7th Cir. 2000) ("'the burden is on one complaining of a due process violation to establish that the legislature has acted in an arbitrary and irrational way'").

Fair notice does not mean that laws must be unambiguous. The Supreme Court has long recognized that most laws "must deal with untold and unforeseen variations in factual situations, and the practical necessities of discharging the business of government inevitably limit the specificity with which

legislators can spell out prohibitions." *Boyce Motor Lines, Inc. v. United States*, 342 U.S. 337, 340 (1952). Given the limitations of our language, a person has fair notice of what the law requires or prohibits when "reasonable persons would know that their conduct is at risk." *Maynard v. Cartwright*, 486 U.S. 356, 361 (1988). Thus, when a defendant "'deliberately goes perilously close to an area of proscribed conduct [it] shall take the risk' of crossing the line, as '[o]nly a reasonable degree of certainty is necessary." *United States v. Midwest Fireworks Mfg. Co.*, 248 F.3d 563, 568 (6th Cir. 2001) (internal citations omitted).

SIGECO indisputably had notice of EPA's interpretation before the first modification at issue in this case. SIGECO had constructive notice of EPA's limited authority to promulgate exemptions from Clean Air Act requirements, as outlined in *Alabama Power*. SIGECO had constructive and actual notice of the *WEPCO* decision and the 1988 Clay Memo. SIGECO has admitted that it was aware of and applied EPA's four factor test, as outlined in *WEPCO*, to projects before and after 1991. SIGECO Depo at 91, 156-57 (Exh.26). SIGEGO has also admitted that it considered the 1988 Clay Memo when evaluating environmental requirements for its 1991 project. SIGECO Depo at 71-72 (Exh.26). These sources gave SIGECO, and the entire utility industry, constitutionally adequate notice of EPA's interpretation. In particular, these sources gave SIGECO notice that (a) the exemption was narrow; (b) the exemption applied only to activities that are routine for a typical unit, and not to activities that are merely prevalent in the industry; and (c) the exemption is applied case-by-case, taking into account the nature, extent, frequency, and purpose of the work.

E. The defenses based on alleged retroactive application of law must fail because EPA is following the interpretation set forth in *WEPCO*.

SIGECO asserts several affirmative defenses that depend on the same erroneous claim, namely that EPA's interpretation of the routine maintenance exemption is a rule that EPA is seeking to apply retroactively. These defenses are substantive due process (ninth affirmative defense), retroactive rulemaking (thirteen affirmative defense), arbitrary and capricious administrative action (fourteenth affirmative defense), ultra vires administrative action (fifteenth affirmative defense), violation of the Federal Register Act (twenty-first affirmative defense), Congressional review of agency rule making (twenty-second defense), and violation of the Administrative Procedure Act (twenty-third defense). The United States seeks partial summary judgment on each of these defenses.[25]

The defenses fail for several reasons. First, EPA is not seeking to apply a new interpretation to the defendant's conduct. As described above, EPA's interpretation is the same one upheld in *WEPCO* more than a decade ago, before the defendant modified its plant. This Court is bound to follow that interpretation under the doctrine of stare decisis and because EPA has reasonably interpreted its own regulations.

Second, this Court lacks jurisdiction to consider challenges to rules. The Clean Air Act provides that challenges to final agency action can be brought only in the United States Courts of Appeal. 42 U.S.C. § 7607(b). Challenges to final agency action of national scope must be brought in the D.C Circuit. Challenges to action that is locally or regionally applicable must be brought in the

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[25] SIGECO describes the basis for these defenses in its Supplemental Responses to Interrogatory 13 of the United States First Set of Interrogatories, at 9-14 (Exh.31).

appropriate circuit. Final agency actions that could have been reviewed by the United States Courts of Appeal "shall not be subject to judicial review in civil or criminal proceedings for enforcement." 42 U.S.C. § 7607(b)(2). Thus, even if the defendant could establish that EPA's interpretation was somehow a new rule, this Court would lack jurisdiction to consider challenges to that rule.

Third, this Court similarly lacks jurisdiction to consider alleged violations of provisions covering Congressional review of agency rulemaking, 5 U.S.C. § 801, *et seq.* These provisions establish a mechanism to keep Congress informed about the rulemaking activities of federal agencies and provide for tighter congressional oversight of agency rulemaking.[29] These provisions generally require that any rule promulgated by a federal agency must first be submitted to the Comptroller General and Congress for review, along with other summary information about the rule, before the rule can take effect. *See* 5 U.S.C. § 801(a)(1). However, any alleged failure to abide by these provisions is precluded from judicial review. Section 805, entitled "Judicial Review," provides that "[n]o determination, finding, action, or omission under this chapter shall be subject to judicial review." 5 U.S.C. § 805. Thus, even if SIGECO could establish that EPA's interpretation is a new rule, judicial review would not be available under this statute.

F. SIGECO cannot prove the elements of estoppel.

The United States also seeks partial summary judgment on SIGECO's defense of equitable estoppel (fourth affirmative defense). "[E]quitable estoppel against the government is disfavored and is

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[29] Congressional Review of Agency Rulemaking, 5 U.S.C. §§ 801-08, falls under a relatively new chapter 8 that was added to Title 5 of the United States Code on March 29, 1996, pursuant to the Contract with America Advancement Act of 1996 ("CWAAA").

rarely successful." *Gibson v. West*, 201 F.3d 990, 994 (7th Cir. 2000). Were estoppel available against the government, the doctrine would effectively empower government employees to waive or revise laws enacted by Congress. *Office of Personnel Management v. Richmond*, 496 U.S. 414, 429 (1990) (the "[j]udicial adoption of estoppel based on agency misinformation" would "vest authority in these agents that Congress would be powerless to constrain").

To have any chance of proving estoppel against the United States, the defendant must prove each of the following elements:

(a) the United States committed affirmative misconduct

(b) the United States misrepresented an issue of fact or law

(c) SIGECO reasonably relied on that misrepresentation

(d) SIGECO suffered a detriment as a result of the misrepresentation.

See Kennedy v. United States, 965 F.2d 413, 417 (7th Cir. 1992) (listing elements). These elements require "factual precision," including "proof of what statements were made to a particular person, how the person interpreted those statements, and whether the person justifiably relied on the statements to his detriment." *Sprague v. General Motors Corp.*, 133 F.3d 388, 398 (6th Cir. 1998). If summary judgment in favor of the government is appropriate on any of these elements, the whole defense fails. *Kennedy*, 965 F.2d at 417. SIGECO's defense fails because the defendant has no evidence to support several elements of estoppel.

The element of affirmative misconduct is extremely difficult to prove, and "requires more than mere negligence." *Gibson*, 201 F.3d at 994. A defendant cannot show affirmative misconduct by proving that the government failed to inform a defendant of his legal rights or obligations. *Id.*

Affirmative misconduct also does not occur when the government fails to enforce the law, or fails to inform a defendant that his conduct violates the law. *United States v. City of Toledo*, 867 F. Supp. 603, 607-08 (N.D. Ohio 1994); *United States v. Eastern of New Jersey, Inc.*, 770 F. Supp. 964, 984-985 (D. N.J. 1991). Affirmative misconduct does not even occur when the government erroneously informs a party that its conduct is legal. *FDIC v. Hulsey*, 22 F.3d 1472, 1489 (10th Cir. 1994); *Eastern of New Jersey*, 770 F. Supp. at 985. In short, "neither carelessness . . . nor a reluctance to be of assistance . . . are tantamount to affirmative misbehavior." *United States v. Ven-Fuel, Inc.*, 758 F.2d 741, 761 (1st Cir. 1985).

As a matter of law, SIGECO cannot satisfy the first two elements of estoppel. SIGECO cannot identify any affirmative misconduct or misrepresentation by the United States. SIGECO Depo at 284-87 (Exh. 26). SIGECO does not even have specific information that EPA knew of the 1991 or 1992 modifications at the time they were occurring. SIGECO Depo at 94, 136-37 (Exh.26). Although the State of Indiana did agree that the 1997 modification was routine, SIGECO does not contend that the State intentionally misled the company or committed misconduct. SIGECO Depo at 282-84 (Exh.26) At most, SIGECO is alleging a negligent misrepresentation by the State. Negligence does not rise to the level of misconduct. *Gibson*, 201 F.3d at 994.

Moreover, there is no authority for equitably estopping the United States from enforcing the law because of the actions of a state employee. Such a result would be particularly inappropriate in an action to enforce the Clean Air Act. As discussed earlier, Congress made EPA the "'the ultimate supervisor' for implementation of the Act." *Illinois EPA v. U.S. EPA*, 947 F.2d 283, 290 (7th Cir. 1991). To that end, Congress gave EPA independent authority to enforce PSD and NSPS regulations.

This authority ensures "that states do not relax their enforcement efforts in an attempt to attract industry." *Ford Motor Co.*, 736 F. Supp. at 1550. If the actions of state officials could estop the United States, this equitable doctrine would effectively nullify the independent authority that Congress gave to EPA.

G. Laches is not a defense to an action brought by the United States to enforce the Clean Air Act.

In SIGECO's third affirmative defense, the defendant asserts that it is not liable because the government delayed in enforcing the Clean Air Act. As a general rule, the United States is not subject to the equitable defense of laches when enforcing its rights. *United States v. Torres*, 142 F.3d 962, 966 (7th Cir. 1998) ("It is well settled that the United States is not . . . subject to the defense of laches in enforcing its rights") (internal quotation omitted); *Martin v. Consultants & Administrators, Inc.*, 966 F.2d 1078, 1090 (7th Cir. 1992). While the Seventh Circuit has not completely closed the door to the use of laches against the government, the Seventh Circuit has suggested that laches does not apply where the United States is seeking the enforce sovereign powers. *United States v. Administrative Enterprises, Inc.*, 46 F.3d 670, 672 (7th Cir. 1995). This suggestion comports with the rule, recognized in this District and elsewhere, that governmental officials have no authority to excuse conduct that the law prohibits or requires, whether by delay or outright negligence. *United States Postal Service v. University Publishing Corp.*, 835 F. Supp. 489, 492 (S.D. Ind. 1993). This rule particularly applies when the government is acting "to enforce a public right or protect a public interest." *Utah Power and Light Co. v. United States*, 243 U.S. 389, 409 (1917).

Courts have specifically rejected laches as a defense to enforcement actions brought by EPA.

defendant must also show that it "reasonably relied on the plaintiff's failure to file suit, and that, based on the assumption that the plaintiff would not sue, the defendant altered his or her position in a detrimental manner." *Bennett v. Tucker*, 827 F.2d 63, 69 (7th Cir. 1987).

SIGECO is unable to satisfy any of the elements of laches. First, SIGECO cannot identify any detrimental reliance on a delay in bringing suit. The Seventh Circuit has said that neither "inconvenience" nor the "mounting of penalties during periods of noncompliance" satisfy the requirement for a detriment. *Martin v. Consultants & Administrators, Inc.*, 966 F.2d 1078, 1091 (7th Cir. 1992) (inconvenience); *Reich v. Sea Sprite Boat Co.*, 50 F.3d 413, 418 (7th Cir. 1995) (penalties). Here, the defendants have failed to identify *any* detriment resulting from the alleged delay. When asked to supply the factual basis for its laches defense, SIGECO failed to identify a single example of detrimental reliance.[29] The defendants have also failed to show how their alleged "reliance" on EPA was reasonable, since EPA never informed SIGECO that any of its modifications were routine.

In addition, SIGECO cannot show that the United States' decision to file suit in 1999 was an inexcusable delay. SIGECO has testified that it has no specific information that EPA even knew about the 1991 or 1992 modifications, much less that EPA knew enough about the modifications to determine that they were subject to Clean Air Act requirements. SIGECO Depo at 94, 136-37 (Exh. 26).

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[29] SIGECO's Supplemental Response to Interrogatory 13 at 4 (Exh.31). Similarly, when asked to identify the detriment that supported its estoppel defense, SIGECO was only able to identify the cost and inconvenience of litigating this lawsuit. SIGECO Depo at 293-96 (Exh. 31) This so called "detriment" is due to SIGECO's decision to fight this lawsuit, not to any alleged delay in bringing suit. *See Estate of Bennett v. Comm'n of Internal Revenue*, 1991 WL 107735 (4th Cir.) (finding that litigation costs were the result on contesting a notice of violation, rather than a delay in bringing suit). Moreover, the cost of fighting the lawsuit falls into the category of "inconvenience" that the Seventh Circuit has said will not justify laches.

SIGECO, therefore, cannot show knowing acquiescence in the company's conduct. EPA had limited knowledge of the 1997 modification, but determined that the modification was not routine. Portanova Decl. at ¶ 13 and attachment (Exh.27). EPA did not become aware of the State's contrary determination until many months later, and in October 1999 issued the defendant a formal Notice of Violation. *Id.* at ¶ 15.

H. The Defendant's waiver defense is unavailable as a matter of law.

Like its other equitable defenses, SIGECO's seventeen defense of waiver also fails. Waiver requires an intentional relinquishment of a known right. As shown earlier, public officials have no authority to waive the enforcement of the law on behalf of the public. *United States v. City of Menominee*, 727 F. Supp. 1110, 1121 (W.D. Mich. 1989); *FDIC v. Manatt*, 688 F. Supp. 1327, 1333 (E.D. Ark. 1988); *United States v. Amoco Oil Company*, 580 F. Supp. 1042, 1050 (W.D. Mo. 1984). In addition, SIGECO has no evidence that EPA intentionally relinquished any right against SIGECO. As a matter of law, the affirmative defense of waiver must fail.

VI. Conclusion

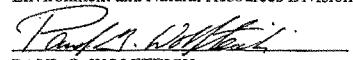
EPA is applying the same interpretation or the routine maintenance exemption in this case that the Seventh Circuit upheld more than a decade ago. The interpretation has three distinguishing hallmarks. First, the exemption is narrowly construed, in keeping with EPA's limited authority to exempt activities from coverage under the Clean Air Act. Second, the exemption only applies to activities that are routine for a typical generating unit. An activity is not routine because it is prevalent within the utility industry as a whole. Third, the exemption does not apply categorically to any activity in the utility industry. Each activity must be reviewed case-by-case, taking into account the nature, extent,

purpose, frequency and cost of the activity. This Court is bound to follow EPA's interpretation by the doctrine of stare decisis. Because EPA's interpretation was known and upheld prior to each of SIGECO's modifications in this case, all affirmative defenses based on a claim that the interpretation is new must fail. Furthermore, the affirmative defenses based on the State's erroneous legal opinion must fail because state employees, as a matter of law, cannot excuse a utility from its obligations under the federal Clean Air Act. Lastly, the defendant's equitable defenses fail because SIGECO cannot satisfy each element of these defenses.

Dated: May 16, 2002

Respectfully submitted,

THOMAS L. SANSONETTI
Assistant Attorney General
Environment and Natural Resources Division



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FILE NO

DIRECT DIAL NO 202 955-

June 5, 1989

Ms. Polly Gault
Chief of Staff to
the Secretary
United States Department
of Energy
1000 Independence Avenue, S.W.
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Washington, D.C. 20585

Dear Polly:

I appreciated the opportunity to meet with you and discuss the so-called WEPCo case and its progeny. Enclosed is a briefing paper which explains the problem and outlines how EPA could easily solve it administratively. As discussed in the enclosure, the consequences of these decisions are far reaching. Among other things,

1. WEPCo will wholly undermine any "acid rain" legislation designed to allow reductions in the most cost-effective way;

2. WEPCo is presently causing utilities to defer needed major maintenance, repair and replacement projects required for maintaining a reliable electric supply;

3. Utilities and others that want to reduce emissions by converting to natural gas are barred from doing so

> without a PSD new source permit unless they were capable of burning gas in 1975; and

4. If the WEPCo rationale is not qualified, utilities face substantial risks in undertaking a "clean coal" demonstration project.

As I mentioned at our meeting, we have asked Administrator Reilly to reconsider the WEPCo interpretations. We know that the EPA staff will oppose our request. This steadfast refusal to back down is best illustrated by a May 5 letter to Detroit Edison where Acting Assistant Administrator Don Clay stated:

> In your March 13 letter, you provided data that illustrated large decreases in the source's "potential to emit" sulfur dioxide, particulate matter . . . and NOx as a result of the conversion. [Nevertheless,] [o]ur review of the available information suggests that Region V's conclusion that the source appears to be subject to PSD review . . . is correct.

We hope the Department and others in the Administration will urge Administrator Reilly to overrule his staff on this important issue. I am sending Linda Stuntz, under separate cover, more detailed information on the WEPCo case, including an amici brief supporting Wisconsin Electric in the Seventh Circuit litigation. That brief, joined in by the aluminum, steel, utility, petroleum, and coal industries, underscores the broad and adverse impact WEPCo will have on energy policy and on our economy.

HUNTON & WILLIAMS

Ms. Polly Gault
Department of Energy
June 5, 1989
Page 3

If I can provide any additional information, please let me know. We would appreciate the opportunity to meet with you and others in the Department within the next few weeks to discuss analyses we are preparing on the impact of WEPCo on the utility industry.

Sincerely yours,

Henry V. Nickel

Enclosure

cc: Linda Stuntz, Esquire (w/enclosure)
Mr. Walker Nolan (w/enclosure)
Ms. Lynn LeMaster (w/enclosure)

June 5, 1989

THE WEPCO, DETROIT EDISON,
AND OHIO EDISON DECISIONS

In October 1988, Administrator Thomas affirmed a determination of then Acting Assistant Administrator Don Clay finding that new source performance standards (NSPS) (i.e., SO2 scrubbers) and prevention of significant deterioration (PSD) new source permitting requirements would apply if a maintenance, repair, and replacement project (called a "life extension" project) planned at a five unit coal-fired electric generating plant owned by Wisconsin Electric Power Company (WEPCo) went forward. WEPCo was seeking to replace equipment that posed safety concerns at four of the units and required shutdown of one of those units. In addition, replacement of defective equipment was required at two units to allow those units to operate again at design capacity. The remainder of the repairs and replacements in the project were needed to improve efficiency and reliability without having any impact on emission rates.

On February 15, 1989, Acting Assistant Administrator Clay resolved additional issues posed by WEPCo. Among other things, he determined that WEPCo could not avoid NSPS by switching to a lower sulfur coal, but rather would need to install scrubbers or similar controls. He also found that PSD review would be required even though the units were not increasing their emission rate.

In the Detroit Edison case, EPA Region V determined that a project to allow natural gas-firing at an oil-fired plant could not be undertaken without a PSD permit. In a May 5 letter, Don Clay observed that the project would substantially reduce emissions, but he nevertheless tentatively concluded that Region V's PSD determination appears to be "correct."

In the Ohio Edison case, EPA determined that removing a clean coal technology demonstration project after the demonstration concluded would trigger PSD and NSPS requirements. Although EPA Acting Assistant Administrator Clay promised "no action" in terms of EPA civil enforcement, "clean coal" participants would still potentially face criminal penalties for "knowing" violations of the Clean Air Act and would be subject to citizen suits under the Act. In other words, EPA has made clear that removing a clean coal demonstration project is unlawful (in EPA's view) and has informed those undertaking these demonstration projects that, at most, EPA will not initiate a civil action. Citizens and a local U.S. Attorney can do what they want.

The Utility Air Regulatory Group[1/] has requested that Administrator Reilly reconsider these decisions. Detroit Edison is separately seeking review of the Region V decision concerning its natural gas project.

EPA's New Interpretation of
the NSPS and PSD Requirements

New Source Performance Standards (NSPS) require new sources to meet a 70-90% scrubbing requirement and other stringent emission limitations. The Prevention of Significant Deterioration (PSD) permit program imposes numerous monitoring

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1/ The Utility Air Regulatory Group (UARG) is a voluntary, nonprofit, unincorporated, ad hoc group of 65 electric utilities, the Edison Electric Institute, the National Rural Electric Cooperative Association, and the American Public Power Association. UARG's purpose is to participate on behalf of its members collectively in federal air pollution control regulatory activities and in related litigation. Since 1977, UARG has been involved in all major Environmental Protection Agency Clean Air Act rulemaking and in numerous judicial proceedings related to these rulemakings.

and modeling requirements on new sources, as well as technology-based emission limits that are potentially more stringent than NSPS. Existing sources are subject to NSPS and PSD if they are "modified," that is, if they undergo physical or operational changes that increase emissions.

The WEPCo, Detroit Edison, and Ohio Edison decisions substantially expand the previous understanding of what is a "modified" source for NSPS purposes. Under these decisions, if emissions immediately before a "non-routine" (as determined by EPA staff) change are greater than emissions after the change, NSPS is triggered. This is the case notwithstanding the fact that the emissions immediately before the change are not representative of normal source operations.

EPA similarly expanded the "modification" requirements that apply to the PSD program. Under these decisions, if EPA finds a change to be "non-routine," EPA will always conclude that the change causes an emissions increase since EPA compares actual annual emissions before the change with the emissions projected from operating 100 percent of the time, at 100 percent capacity, for 365 days. This approach, which allows projects an emission increase, conflicts with the plain language of EPA's rules.

EPA's decisions acknowledge that "routine" repairs and replacements are not subject to the NSPS and PSD modification rules. However, the Agency has arbitrarily redefined what repair and replacement activities are "routine," such that "routine" activities include only those that (1) are frequently done at that plant, (2) involve no major equipment, (3) are inexpensive, and (4) do not extend the life of a plant. This new interpretation is vastly different from past implementation of the "routine" rule, which included any repair and replacement activity that is normal business practice. It gives EPA staff

virtually unlimited discretion to find that any major repair or replacement project is "non-routine."

Direct Impacts of the WEPCo, Detroit Edison, and Ohio Edison Decisions

Under these decisions:

1. A unit that discovers safety problems due to an unanticipated defect in equipment and shuts down pending repairs cannot resume operations without meeting stringent new source standards and receiving a new source prevention of significant deterioration ("PSD") permit. This occurs whenever EPA determines the repair or replacement is not "routine." WEPCo, Port Washington Unit 5, October 14 letter.

2. A unit, under the WEPCo decision, cannot repair or replace deteriorated or defective equipment needed to return to past maximum operating levels, unless the repairs or replacements are "routine." WEPCo.

3. A unit cannot avoid an emissions increase that would trigger new source standards by switching to a lower sulfur coal or oil, or to natural gas. It must install control technology (e.g., scrubbers). WEPCo, February 15 letter.

4. A utility experiencing increased forced outages at its units due to equipment problems cannot undertake repairs needed to avoid serious electric reliability problems without applying for and receiving a PSD permit, even though these repairs will only improve reliability and efficiency and will not increase the emission rate of the

units. This occurs whenever EPA determines these "emissions neutral" or even "emissions beneficial" repairs or replacements are not "routine." WEPCo, Detroit Edison.

5. A unit that was not able to burn a lower polluting fuel (e.g., natural gas) in the past cannot be converted to burn that fuel without first applying for and receiving a PSD permit. Detroit Edison.

6. A unit that has undertaken a "clean coal" demonstration project must meet new source standards and obtain a PSD permit if it wishes to remove the experimental technology at the end of the demonstration period. EPA may issue a "no action" assurance to such a project. Ohio Edison. A "no action" assurance is a promise by the EPA signatory (in the case of Ohio Edison, an Acting Assistant Administrator) that EPA will not bring a civil enforcement action. This does not insulate the company from a "citizen suit" under the Clean Air Act. Also, as the attachment to the EPA Ohio Edison letter makes clear, a U.S. Attorney can still bring a criminal prosecution.

Broader Consequences of the WEPCo, Detroit Edison, and Ohio Edison Decisions

1. WEPCo will wholly undermine any "acid rain" legislation designed to allow reductions in the most cost-effective way. For example, it subjects many older, smaller units to scrubbers when these units are the logical candidates for fuel switching.

2. WEPCo is presently causing utilities to defer needed major maintenance, repair and replacement projects

required for electric system reliability. The consequence of such deferrals is that utilities must risk interruption of service in the very near future or costly expenditures on short-term solutions (e.g., unplanned installation of combustion turbines). Given the time required to obtain a PSD permit to undertake a repair program at an existing unit or to install a new combustion turbine, a substantial deterioration in electric reliability in the near future -- with serious health and environmental consquences -- is likely unless WEPCo is revisited.

3. For other industries, WEPCo says: you may not undertake major repairs or replacements that restore a plant to its past levels of production unless someone in an EPA region or EPA headquarters finds that the project is "routine." Given EPA's restrictive interpretation of "routine," the WEPCo decision means that such projects cannot be undertaken without assuming substantial risks or seeking a determination from EPA that could take 6 to 12 months.

4. Even more troublesome is the WEPCo determination that major repairs and replacements that improve "reliability" and "efficiency" but do not increase (and may even reduce) emission rates can require a PSD permit unless EPA determines that the project is "routine." This aspect of the WEPCo decision is hostile to improving the productivity of our basic industries.

5. Utilities and others that want to reduce emissions by converting to natural gas are barred from doing so without a PSD permit unless they were capable of burning gas in 1975. This will cause companies to abandon such conversions in many cases and delay them (due to PSD

permitting requirements) whenever a company decides to proceed.

6. If the WEPCo rationale is not qualified, utilities face substantial risks undertaking a "clean coal" demonstration project. If new source requirements apply upon removal of the experimental controls, a unit will have to be shut down or face very costly retrofit controls. The price may be too great for many companies, thereby discouraging participation in the program.

Adminsitrative Solution to the WEPCo, Detroit Edison, and Ohio Edison Cases

In the WEPCo, Detroit Edison, and Ohio Edison decisions, EPA interpreted its new source performance standards (NSPS) and prevention of significant deterioration (PSD) requirements in an unprecedented manner. While the rules governing these EPA programs are complex, the EPA determinations in these cases could be easily overcome with the following interpretations:

1. For NSPS purposes, EPA can, and should, recognize that, in determining an emissions increase, representative operations of the unit should be used in comparing past emissions to future emissions after a change. Nothing on the face of EPA's regulations or their regulatory history precludes such a declaration by the new EPA Administrator. Such a "clarification" would mean that "clean coal" technologies could be removed at the end of the demonstration period without triggering NSPS. It would also allow utilities and other industries to make necessary repairs to return plants to past maximum production levels.

2. For PSD purposes, EPA can, and should, recognize that any emission increase predicted to occur as a result of an increase in hours of operation or production rate up to original design capacity (unless limited by a federally enforceable restriction on production or hours) is an exempt emission increase, as § 52.21(b)(2)(iii)(f) of EPA's rules explicitly and unambigiously provides. This reconsideration of the WEPCo, Detroit Edison, and Ohio Edison decisions would allow "clean coal" projects to proceed without having to receive a PSD permit. It would also allow industry to convert to lower-emitting natural gas without a PSD permit.

RESPONSES OF ERIC SCHAEFFER TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. Did you support the NSR reforms that the Clinton Administration proposed?

Response. I was not directly involved in the development of the Clinton Administration's proposed reforms to the New Source Review program. I was, however, encouraged by the Administration's interest in conditioning increased flexibility for industry upon serious and long-term reductions in emissions from old "grandfathered" power plants and other facilities that continue to claim an exemption from the pollution control requirements that have long been in place for new facilities. The Bush Administration's June announcement seems instead to widen the loophole while sacrificing the emission reductions the Clinton proposals sought to obtain.

Under the Clean Air Act, electric utilities, refineries, and other industries must apply for a permit and install state-of-the-art controls when their plants are modified in a way that increases emissions above a *de minimus* amount. The Clinton Administration asked for comment on a number of proposals in 1996 and 1998 Federal Register Notices designed to simplify the program and encourage innovative approaches to emission reductions. The Bush Administration announced in June this year that it would shortly publish final regulations to "reform" New Source Review, and has claimed that it is merely implementing proposals made by the Clinton Administration. A closer review of the proposals reveals striking differences between the Clinton proposals and the final actions the Bush Administration has announced. Here are three of the most important:

Elimination of Enforceable Permit Limits.—Companies can avoid New Source review so long as physical improvements to their plants do not increase emissions, so the method used to calculate emissions is important. Electric generators may estimate future emissions based on the projected actual use of the specific unit where a modification has occurred. For example, it may determine that a boiler will only be used a limited number of hours to meet peak demand for electricity, and adjust emissions downward to the point where NSR no longer applies. Refineries and other industries may also adjust emissions downward based on similar operational restrictions (e.g., by assuming that a unit will only operate at 75 percent of capacity).

Unlike utilities, refineries and other industries can lower emission estimates based on operational restrictions only if those estimates are reflected in enforceable emission limits. In other words, you are not allowed to exceed the emission levels that you calculate assuming unused capacity or reduced hours of operation. This requirement for enforceable limits does not apply to utilities under today's rules. When a utility's emissions rise above its original estimates, EPA and State agencies must look back in time to determine if those estimates were in good faith and based on sound engineering judgment.

Because this is confusing for both industry and the government, the Clinton Administration's 1998 Federal Register Notice proposed requiring utilities to accept the same enforceable permit limit to reflect expected capacity or operational restrictions. The Bush Administration reverses this by eliminating the requirement that refineries and other factories accept enforceable emission limits based on operating restrictions that such companies claim will keep emissions below the NSR radar. Allowing companies to avoid permit review by operating without enforceable emissions limitations, then forcing government and citizens to undertake an after-the-fact analysis to determine whether original estimates were reasonable, hardly provides the kind of "bright line" the Administration claims to be seeking. It also encourages companies to continue to lowball emissions in the hope that they won't get caught (or see below) or if they are, to fall back on arguments that their earlier estimates were reasonable.

Out of Sight, Out of Mind.—Under today's law, a company can "net out of" (or avoid) NSR permit and control requirements if emissions increases associated with one project are offset by reductions elsewhere in the plant. Companies are supposed to submit their calculations to the permitting authority for review. EPA investigations and a recent court decisions (Murphy Oil) found that some companies did not make these submissions and deliberately underestimated emission increases.

The Bush Administration proposal eliminates the requirement that companies that "net out" of NSR submit their emission estimates to the appropriate Federal or State agency. While records would have to be kept on the plant site, they would not be accessible to the public. This restriction, which does not appear at all in the Clinton proposal, would make it much harder for a community group to find the information needed to review the impact of a proposed plant expansion on the environment. It would also block access to evidence needed to file citizen suits, and

make it harder for States like New York and Connecticut to file Federal lawsuits against out-of-State polluters, since such cases rely on citizen suit authority.

Pollution as a property right.—Properly designed, a plant-wide emission limit (PAL) can give industry the room it needs to make operational changes by providing one overall emission target. The Clinton Administration's 1998 proposal made clear that EPA was considering making such flexibility depend on a company's commitment to reduce its emissions over the lifetime of the permit. The Bush announcement, in contrast, would allow a company to avoid NSR pollution control restrictions for 10 years (or longer) so long as it did not exceed its worst levels of pollution in the previous decade. As with so many other of the Bush Administration "reforms," the industry gets to keep its flexibility, but public health benefits from lower emissions get sacrificed. The 25-year loophole from state-of-the-art pollution controls for old, "grandfathered" plants would be automatically extended for at least another decade, and even beyond based upon other provisions allowing extension of these inflated PALS, without requiring any reductions in air pollution.

Question 2.—Under the Clean Air Act and apart from NSR, what permit and pollution control requirements must all existing coal-fired plants, refineries and other facilities meet?

Response. Absent NSR, plants built before 1977 are exempt from one of the most fundamental requirements of the Clean Air Act: to install the best available control technology to control pollution. That is why 25 years after the Clean Air Act became law, a plant built before 1977 can still emit over 100,000 tons of sulfur dioxide a year, while a new plant of comparable size and burning the same type of coal, is limited to less than 5,000 tons, or under 5 percent of that amount. The other permit requirements that do exist have been relatively ineffective in limiting this gross disparity, or curbing the kind of pollution that the American Cancer Society, the Harvard School of Public Health, and the Health Effects Institute estimate leads to tens of thousands of premature deaths every year.

There are three basic requirements that grandfathered power plants may be subject to, in addition to the New Source Review requirements the Administration has proposed eliminating. Some facilities are subject to emission rates, e.g., allowing a certain level of pollution per unit of energy created. While useful, these allow utilities, refineries and other old plants to increase total emissions proportionately when demand grows or capacity is increased. In short, they do not set a ceiling (as NSR does) on the amount by which grandfathered plants can increase their production as a result of plant modifications.

Title IV of the Clean Air Act does require modest annual reductions in the amount of sulfur dioxide that can be released nationwide by power plants, on average about 2 percent a year. But it does not apply at all to refineries or other industries that would benefit from the Bush Administration rollback of New Source Review. Nor does it compel the kind of reductions (85 percent for NOx and 95 percent for SOx) required of the biggest emitters subject to NSR. Finally, it allows power plants to continue to run at high levels of pollution if they have been able to by credits from cleaner facilities that may operate a thousand miles a way. That is small comfort to the citizens living near the dirty plant.

EPA or the States can force changes based on tighter air quality rules, but these changes are fought by industry at the Federal, State and local level. It seems particularly unfair to take away one of the most important tools for requiring the dirtiest, oldest plants to upgrade pollution controls right at the moment that States and counties must begin preparing to meet tough new, health-based standards for fine particle pollution. And the Administration's Clear Skies proposals compounds the problem by erecting extreme and unnecessary hurdles to prevent a State from petitioning EPA to take action against polluters outside its boundaries when those polluters are jeopardizing that State's air quality.

STATEMENT OF BOB SLAUGHTER, PRESIDENT, ON BEHALF OF THE NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION

Chairman Jeffords, Chairman Leahy, Senators Smith and Hatch and other members of the committees, I am Bob Slaughter, president of the National Petrochemical & Refiners Association (NPRA). NPRA thanks you for asking us to appear before you today on the subject of reform of the New Source Review (NSR) program. NPRA is a national trade association which represents nearly all owners or operators of U.S. refining capacity, as well as petrochemical manufacturers with processes similar to refiners. The petroleum and chemical products made by our members are vital to continued U.S. economic health and national security, and we welcome the oppor-

tunity to underscore the importance of NSR reform to maintaining a secure and adequate supply of those products.

NSR REVIEW HAS BEEN A PUBLIC PROCESS

This is our third appearance before the Senate Environment and Public Works Committee on this subject. On February 28, 2000, I appeared before a hearing of the Subcommittee on Clean Air, Wetlands, Private Property and Nuclear Safety to explain many of the problems that our members were experiencing under the NSR program. On April 5, 2001, I appeared before the same subcommittee to stress our members' continued need for NSR reform and our hope that this matter would be reviewed as part of the Administration's forthcoming recommendations for changes in national energy policy. The problems with and concerns about the NSR program we expressed at those times are already on the record, but we have included them as an appendix to this statement for ease of access by committee members and staff.

In May 2001, the National Energy Policy Development Group, in its National Energy Policy report, recommended that "the Administrator of the Environmental Protection Agency, in consultation with the Secretary of Energy and other relevant agencies, review New Source Review (NSR) regulations, including administrative interpretation and implementation, and report to the President on the impact of the regulations on investment in new utility and refinery generation capacity, energy efficiency and environmental protection." That review was to be concluded by August 15, 2001.

On July 10, 2001, NPRA appeared at one of the four public hearings held by EPA across the country. The hearings were held to accept comments on industry experience with the NSR program in general, and specifically on the EPA paper (published June 22, 2001) providing background and a preliminary overview of NSR performance and related issues. Some of our member companies also appeared during these EPA public hearings. We have attached the statement delivered on behalf of NPRA in Cincinnati as part of the appendix to this testimony.

On June 27, 2001, NPRA and representatives of 12-member companies met with the Environmental Protection Agency Office of Policy, Economics and Innovation. This meeting was held to discuss specific problems with the NSR program and our suggestions for ways in which the program could be improved in order to maintain environmental progress while promoting energy efficiency, the production of cleaner fuels and the installation of improved technology. On July 23, 2001 NPRA sent EPA a written summary of the points brought forward at that meeting. This material is a part of EPA's docket of the review process, but we are attaching a copy as part of the appendix to today's testimony.

On June 13, 2002, EPA Administrator Whitman sent a letter to the President transmitting EPA's report to the President and a separate New Source Review Recommendations document summarizing actions to improve the NSR program. It should be noted that the Administration took 10 months beyond the originally anticipated August 15, 2001 date to receive and review input and to formulate its recommendations. NPRA issued a press release supporting the Administration's decision to move forward with NSR reform; a copy is attached as part of the appendix.

NSR REFORM IS NECESSARY

NPRA continues its strong support for reform of the New Source Review program. Our members need both increased certainty as to the application of that program and greater flexibility in meeting its requirements. Considerable uncertainty still exists about the NSR program, and our members tell us that State regulators who actually administer most of the program's requirements have expressed their concern about its many complexities and shifting interpretations.

REFINERS HAVE A HEAVY REGULATORY AGENDA

Refiners in particular are in urgent need of NSR reform. The industry is facing a blizzard of new regulatory requirements in this decade, all of which are environmental in nature. The number and compressed timing of these requirements are compellingly demonstrated on the attached chart which we call the Regulatory Blizzard.

To mention only the most significant of these programs: refiners must implement a greater than 90 percent reduction in gasoline sulfur content outside of California in the 2004–2006 timeframe, at an estimated cost of $8 billion. By mid–2006 the industry must achieve a 97 percent reduction in the sulfur content of 80 percent of highway diesel fuel, at an additional cost approaching that of the gasoline sulfur reduction. EPA is currently considering severe sulfur reductions in the off-road die-

sel pools, which will also be quite expensive and, which will be partially implemented in this decade as well.

Additional and expensive gasoline specification changes involving the use of MTBE in reformulated gasoline must be implemented in the same timeframe. At the same time, stationary source programs such as the MACT hammer and compliance with the new 8-hour ozone standard will require additional environmentally related investments at refineries and petrochemical facilities.

Many industry experts have told us that they believe that the refining industry faces a total of $20–25 billion in additional investments before 2010. The vast majority of these requirements are related to mandatory environmental programs. Other experts think that the $20–25 billion price tag may be underestimated.

The unfortunate fact is that most, if not all of these regulatory requirements were imposed in relative isolation and with little attention paid to their cumulative effect on the domestic refining industry. In 1999 a study done by the National Petroleum Council (NPC), a joint government-industry body co-chaired by the then Secretary of Energy, warned about the impact of these uncoordinated investment requirements on the refining industry. In its Report, the NPC recommended more reasonable timing and better sequencing of these requirements to avoid domestic refinery closures and reduced supply of petroleum products. The NPC's recommendation has been largely ignored to date.

NSR REFORM IS NEEDED TO MEET THIS REGULATORY AGENDA

Confusion and controversy over NSR requirements and applicability contribute to the problems facing our industry. Assuming their ability to secure sufficient investment capital to meet these regulatory requirements, refiners still face many logistic challenges in meeting the ambitious goals and deadlines of these new regulations. Refiners must make infrastructure and process changes to comply with these regulations. The current NSR program makes it extremely difficult for refiners to determine just what the legal requirements are as they do so. This situation illustrates why the unreformed NSR program hinders our industry's efforts to produce the cleaner fuels that consumers want and which are needed for continual environmental progress.

Current disarray in the NSR program has had an even more direct, negative effect on refiners. Enforcement actions against the refining industry based upon unanticipated and shifting NSR interpretations have sought to add significant and uncoordinated new investment requirements to those already mandated in this decade. Given the magnitude of the tasks facing the refining industry, and the cost of contesting these claims, some of our members have decided to settle these enforcement actions rather than to contest them. Other members are still discussing these matters with agency personnel.

It is NPRA's position that the enforcement activity against refiners is inappropriate and should cease. We believe that the NSR program's application and requirements must be clarified and the industry allowed to proceed with the many challenges it faces in complying with its vast suite of new regulatory requirements with the help of a reformed NSR. Regulatory improvements resulting from NSR reform should be made available to those companies which have already settled at their option. Given the immense job ahead of the industry it is inconceivable that this would have anything but a positive effect on the environment.

THE U.S. REFINING INDUSTRY IS ESSENTIAL, BUT FACES CHALLENGES

Domestic refining is an essential industry. It is also a tough business. Refining is a heavily regulated, capital-intensive industry that requires huge amounts of capital to continue its significant environmental progress and to maintain and expand production capacity. Thus, it is very important to provide clear and efficient means to comply with environmental regulation. Unnecessary costs mean reduced domestic production of crucial energy supplies and further reductions in the number of U.S. refineries.

No new refinery has been built in the United States since 1976. It is unlikely that any new grassroots refinery will be built in the United States in the foreseeable future. This is due to the industry's relatively low return on capital invested (which is in part attributable to the costs of environmental compliance) and to the NIMBY factor, which makes it difficult to site new heavy industry facilities.

PETROLEUM PRODUCT DEMAND IS INCREASING

No new U.S. refineries have been built, but our demand for petroleum products continues to increase. The Energy Information Administration (EIA) projects continued growth in demand for petroleum products at roughly 1.5 percent per year

through 2020. As the number of U.S. refineries declines, overall U.S. capacity has increased at existing sites just enough to offset the reduction in capacity. But this is not enough to keep pace with the growing demand for petroleum products, which must be met through more product imports. In order to maintain—and hopefully increase—domestic production of basic fuels, NSR reform is needed to continue capacity additions and other efficiencies at existing sites. Otherwise, we will gradually but inexorably become more dependent on imports of key petroleum products like gasoline, diesel fuel, home heating oil, and jet fuel, with a significant impact on national security. Currently, the United States imports large quantities of crude oil, but the useful petroleum products are largely made in the United States at domestic refineries.

NSR reform will not remove all the challenges facing domestic refiners, but it will eliminate unnecessary and counterproductive costs of unnecessary regulation and uncertainty that can make the difference between life and death for many facilities.

This is not an idle concern. The Oil Price Information Service (OPIS) recently reported that at least 15 U.S. refineries that represent more than 10 percent of U.S. production may change hands or be closed down by January 2003. The facilities identified by OPIS are in every region of the country other than the West Coast, which already suffers from a sharply reduced refinery population. OPIS adds "It's the rare unit these days that is sought after by qualified buyers."

EIA is projecting that U.S. refineries capacity will continue under pressure, even with capacity utilization at levels of 94–95 percent which is far more than in other industries, where maximum utilization is considered to be 75–85 percent of capacity. EIA forecasts: "Imports of light products are expected to nearly triple by 2020, to 4.5 million barrels per day. Most of the projected increase is from refiners in the Caribbean basin and in the Middle East, where refining capacity is expected to expand significantly."

Given such warnings, and the impact on U.S. national security, it is hard to argue that NSR reform should not proceed expeditiously. And U.S. petrochemical production, also directly linked to U.S. economic progress and national security, confronts challenges equal in magnitude to those of the refining industry and could also operate more efficiently and economically with NSR Reform.

MANY OTHER REGULATORY PROGRAMS CONTROL PLANT EMISSIONS

Opponents of NSR reform attempt to leave the impression that the current NSR program is the source of all industry environmental regulation; this is not the case. The refining industry, for example, is heavily regulated through many other programs. (A compilation of those programs is included in the appendix. It was prepared by the American Petroleum Institute.) NSR, on the other hand, was intended to require the use of up-to-date emission control technology on new or substantially rebuilt facilities; and routine maintenance, repair and replacement activities were specifically exempted from NSR requirements.

NSR reform will also help enable the refining industry continue its strong record of environmental progress. The industry has dramatically reduced its direct and indirect emissions since Clean Air Act regulation began. According to EPA's figures, between 1980 and 1996 the refining industry reduced its criteria pollutant air emissions by 74 percent. Congress and the EPA have required the industry to attain additional dramatic emission reductions in the next few years, largely through rulemaking activities taken under the authority of the 1990 Clean Air Act amendments.

The refining industry's contributions to improved air quality reflect the progress made by the Nation as a whole. On June 26, 2001 the EPA announced that between 1970 and 1999 total emissions of the Clean Air Act's six criteria pollutants decreased 31 percent at a time of considerable growth in both the economy and population. The Agency attributed the improved air quality to effective implementation of clean air laws and regulations and improved efficiency of industrial technologies. Updating and improving the NSR program should be viewed in the context of improving air quality and considered as a way to maintain its environmental progress.

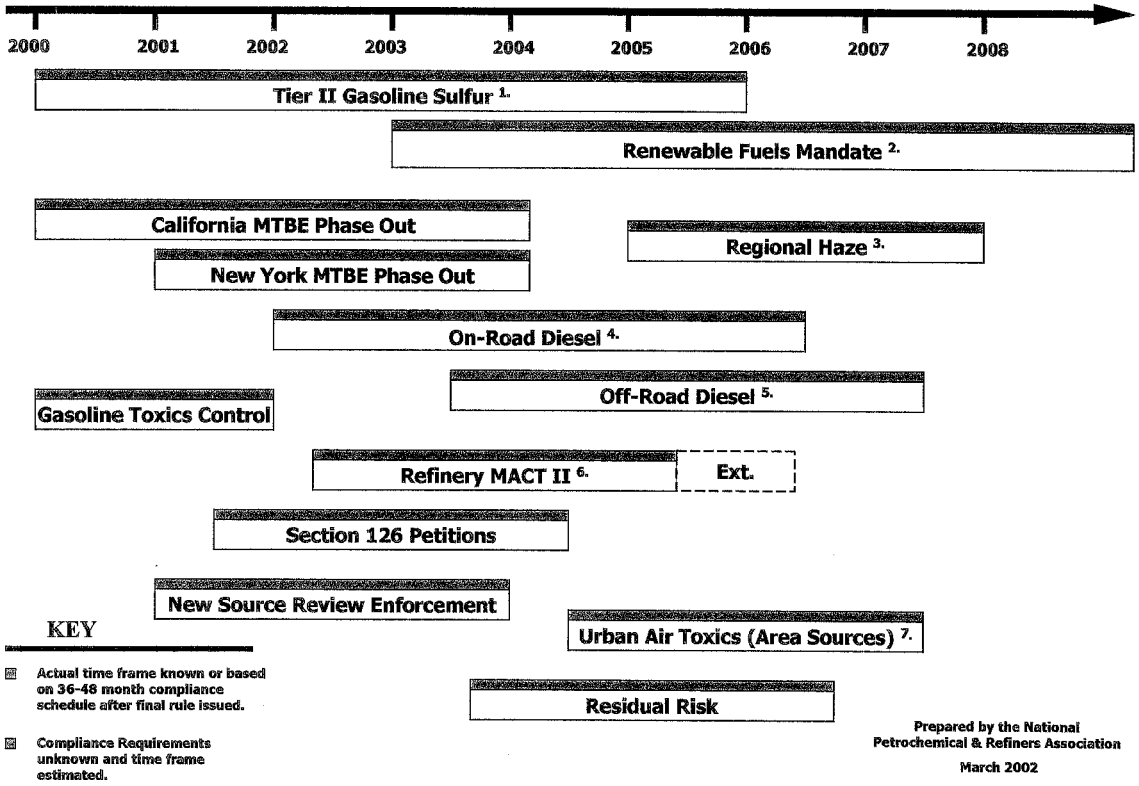
NSR REFORM HAS BEEN A BIPARTISAN EFFORT

Finally, NSR reform has been urged by a bipartisan group of executive branch and congressional policymakers over the past several years. In 1996 during the previous Administration, EPA initiated a rulemaking to revise NSR, proposing what appear to be the same changes that are the core of the present Administration's recommendations. Former EPA Air Administrator Bob Perciasepe, who served until the end of the previous Administration, publicly stated his support for NSR changes which are similar to those recommended by this Administration. A memo expressing Mr. Perciasepe's opinions is attached in the appendix. Also, in May 2002 a bipar-

tisan group of U.S. Senators wrote to the Administration strongly urging NSR reform.

In closing, NPRA urges Congress to continue its support for this bipartisan effort to modernize and reform the NSR program. Additional regulatory flexibility in the form of plant wide applicability limits (PALS), clean-unit treatment, and clarification of the definition of routine maintenance will help our members improve energy efficiency, produce cleaner fuels, and install the latest technology. NSR in its current form impedes, rather than advances, achievement of these goals. We hope that we can count on continued congressional support for reforming NSR, so that our members can meet the growing need for environmentally sensitive products and procedures in ways that are both effective and efficient. I look forward to responding to your questions.

Cumulative Regulatory Impacts on Refineries, 2000 - 2008



Prepared by the National Petrochemical & Refiners Association

March 2002

FOOTNOTES:

1. Longer compliance time for refineries in Alaska and Rocky Mountain states and small refineries covered by Small Business Regulatory Enforcement and Flexibility Act (SBREFA). Additional compliance time is available for these refineries if they produce ultra low sulfur highway diesel beginning in 2006.
2. Senate Energy bill (S. 517) proposes an ethanol mandate of 2.3 billion gallons in 2004 which increases to 5 billion gallons in 2012.
3. Regional Haze State Implementation Plans (SIPs) due 2005-2007. Earliest compliance date. Schedule may be impacted by National Ambient Air Quality Standard (NAAQS) litigation.
4. Longer compliance time for small refiners covered by SBREFA.
5. Estimated effective date based on proposed heavy duty vehicle standards.
6. Compliance date may be harmonized with Tier II schedule.
7. Urban Air Toxics Strategy includes potential controls of gasoline loading facilities at refineries. Estimated compliance schedule.

WRITTEN STATEMENT OF

BOB SLAUGHTER
GENERAL COUNSEL AND DIRECTOR OF PUBLIC POLICY

ON BEHALF OF

THE NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION
AND
THE AMERICAN PETROLEUM INSTITUTE

BEFORE THE

SENATE ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON
CLEAN AIR, WETLANDS, PRIVATE PROPERTY AND NUCLEAR SAFETY

CONCERNING

THE NEW SOURCE REVIEW REGULATORY PROGRAM

FEBRUARY 28, 2000
CINCINNATI, OHIO

I. INTRODUCTION

Good morning. My name is Bob Slaughter. I am General Counsel and Director of Public Policy for the National Petrochemical & Refiners Association (NPRA). I am very pleased to be here this morning to address the need for reform of the "New Source Review/Prevention of Significant Deterioration" ("NSR") program under the Clean Air Act on behalf of both NPRA and the American Petroleum Institute ("API").

NPRA's membership includes virtually all U.S. refiners, as well as petrochemical manufacturers using processes similar to refineries. Our members own and/or operate almost 98 percent of U.S. refining capacity. NPRA includes not only the larger companies, but also many small and independent companies. API is a trade association that represents more than 400 member companies involved in all aspects of the petroleum industry including refining, exploration and production, transportation, and marketing industries. The NSR program significantly affects NPRA and API member companies.

II. OVERVIEW

The refining industry has dramatically reduced its direct and indirect emissions since Clean Air Act regulation began in the 1970s. Between 1980 and 1996, according to EPA's own figures, the refining industry decreased its criteria pollutant air emissions by 74%. Congress and EPA have required us to attain additional dramatic emissions reductions in the next few years.

We will meet these obligations. However, both our ability to meet them and our ability to efficiently make and deliver the products we refine to consumers is currently threatened by the likely prospect that EPA will claim that almost any operational change we make triggers "new source review" ("NSR") under the Clean Air Act.

Congress enacted the NSR program in the 1970s to ensure that sources that significantly **increase** their emissions must install technology to control that increase. You may well ask how an industry with the continuing record of dramatic emissions **reductions** which I have mentioned could be so affected by a program intended to control emissions **increases.**

The answer lies in the manner in which EPA now administers this program. EPA applies NSR to many changes that will never cause emissions increases, even to changes that will reduce emissions. Moreover, EPA's practice of defining critical elements of the program by guidance rather than through rulemaking – or not defining them at all – has created a situation where it is effectively impossible for even the most diligent refiner to determine when NSR applies and when it does not.

This state of affairs has created an urgent need for NSR reform. The policy consideration is this: EPA's reinterpretation of NSR threatens our ability to make the plant changes necessary to comply with important environmental requirements for stationary sources and fuel reformulation.

I would now like to address these points in more detail.

III. HOW THE NEW SOURCE REVIEW PROGRAM THREATENS FUTURE ENVIRONMENTAL PROGRESS

The refining industry now faces extensive new Clean Air Act regulations that will take effect in the near future. These include requirements both for control of refinery emissions, and for the reformulation of gasoline to remove sulfur and selected "air toxics". It seems certain in addition that EPA will require the reformulation of diesel fuel, and likely that Congress or EPA will consider requiring the phase-down or elimination of MTBE from gasoline.

Attached is a chart titled, "Cumulative Regulatory Impacts on Refineries: 2000–2010", reflecting these requirements in more detail.

Implementing these upcoming programs is very important to EPA's environmental agenda. The refining industry's environmental progress to date is very impressive. Between 1980 and 1996, according to EPA's own figures, the refining industry decreased its criteria pollutant air emissions by 74%, while refining capacity decreased by only 16% (see attached chart titled "U.S. Refinery Emissions Reductions"). These figures **underestimate** our current emissions reductions, since they do not include the impact of many regulations issued under the 1990 amendments to the Clear Air Act. Nor do they reflect the significant emissions reductions that have been obtained through the use of reformulated gasoline produced by our industry. EPA expects emission reductions achieved by future fuel reformulation and stationary source emission requirements to be even greater. EPA estimates that just one of the upcoming product reformulation regulations, the Tier II/gasoline sulfur reduction requirements, will produce emission benefits equivalent to removing 164 million cars from the road.

EPA has recognized that refiners face tremendous logistical challenges in meeting the ambitious goals and deadlines of these important new regulations. To implement the regulations, refiners must make many infrastructure and process changes. For each change, refiners must determine whether NSR permitting and controls are required, and then obtain required permits **before** commencing any construction. Because it is now effectively impossible to determine when an NSR permit is required, and extremely time-consuming to obtain a permit, the current state of the NSR program directly threatens the industry's ability to meet Congress' deadlines for this suite of new regulations.

In order to meet Congress' ambitious goals and deadlines for upcoming Clean Air Act regulations, it is essential that refiners have a flexible and efficient permitting process. The current NSR program prohibits this and must be substantially reformed. Moreover, as discussed below, EPA's new interpretation of NSR applicability threatens continued environmental progress, as it penalizes refiners for making changes that decrease emissions.

IV. THE PROBLEM WITH EPA'S CURRENT APPROACH TO NSR APPLICABILITY

NSR is one of the most complicated regulatory programs ever created. EPA has recognized this and initiated the reform process to simplify and rectify the program. In this hearing, however, I want to focus on certain aspects of the program. EPA's current approach to NSR applicability makes it extremely difficult for refiners to determine when NSR permitting and controls are required and leaves refineries in enforcement jeopardy unless they consider NSR for any and all operational changes. As a result, the program is an untenable burden on state permitting authorities and refineries and threatens their ability to implement Congress' future environmental goals in a timely manner.

A. Background

Under the Clean Air Act and EPA's regulations, NSR is triggered by any "physical change or change in the method of operation" of a source that **increases** its emissions by a significant amount. [1] If a physical/operational change does not itself significantly increase source emissions, or if the source "nets out" the change by offsetting emissions reductions in other places, then, under the law, NSR does not apply.

[1] Clean Air Act §111(a)(4); 40 CFR 52.21(b)(2).

If a change does cause a significant emissions increase, NSR requires the source to get a permit **before** beginning construction of the change, install emissions control technology on the change, and perhaps meet other requirements as well. It takes eighteen months to two years on average to get an NSR permit.

EPA officials have recently made public statements that many changes at refineries over the past twenty years required NSR permits but that none were obtained. Since NSR is only triggered by an emissions **increase**, and given that the refining industry since 1980 has experienced dramatic emissions **reductions**, any such EPA claim of widespread NSR noncompliance would appear inconsistent with the basic intent of the Clean Air Act.

EPA has not disclosed information to support its claims of widespread refinery NSR noncompliance, and so we cannot comment on them specifically. However, EPA has reinterpreted its NSR rules in recent years so as to enable the Agency to allege that virtually any change a source might make requires NSR permitting and controls, even if emissions have not increased. In creating NSR, Congress intended that facilities that significantly increase emissions, by adding new equipment or making major changes, must install the latest pollution control equipment. NSR was never intended to impose new controls on older facilities simply because of their age and need for routine maintenance.

B. The Elements of EPA's Current Approach to NSR Applicability

1. The "Actual-to-Potential" Test

EPA uses the "actual-to-potential" test to determine whether a source has significantly increased its emissions. As explained below, the "actual-to-potential" test is bad public policy because it provides an incentive for sources to maximize their emissions, and punishes them for

minimizing their emissions. The "actual-to-potential" test is also inconsistent with Congress' intent for the NSR program, because it requires a source to add controls when its emissions do not increase significantly or even when they decrease. Congress intended NSR to apply only when a source **significantly** **<u>increases</u>** its emissions. The "actual-to-potential" test is a result of EPA interpretation and should be altered or abandoned through the reform process.

In determining whether a "physical/operational change" at a source caused a significant emissions increase, EPA does not compare actual emissions before the change with actual emissions after the change. Instead, EPA compares actual emissions before the change with **potential** emissions – that is, the maximum amount the source could emit – after the change. According to EPA, NSR is triggered whenever the difference between "past actual" emissions and "future potential" emissions is "significant".

This "actual-to-potential" approach always overstates the emissions increase caused by a physical/operational change. There will **always** be a difference between "past actual" emissions and "future potential" emissions at any source that complies with its emissions limits. Sources must maintain a buffer between actual emissions and potential (permitted) emissions to avoid inadvertently exceeding the permitted limit. A source that cares about its environmental performance will go further and try to minimize its emissions at all times, and EPA should encourage this. However, EPA's "actual-to-potential" test punishes sources for doing so.

The "actual-to-potential" test penalizes efforts to maintain a compliance margin or minimize emissions and uses them to trigger NSR for changes that do not really increase emissions, or even decrease emissions. As a source lowers its actual emissions, the difference between those actual emissions and potential emissions gets greater. EPA counts that difference

as an emissions increase that triggers NSR whenever that source makes a physical/operational change. Thus a source is rewarded for maximizing emissions and deterred from minimizing emissions. Additionally, under this approach, a process unit at a source can trigger NSR repeatedly even when its emissions do not increase at all or even decrease.[2]

Although the "actual-to-potential" test is inconsistent with the intent of the statute, EPA requires that sources use this method and only this method to determine whether an emissions "increase" has occurred. EPA has found it to be a convenient way to require controls on more sources, whether or not their emissions have increased significantly.

2. What is a "Physical Change or Change in the Method of Operation"?

As we have shown, the "actual-to-potential" test creates phantom emission increases. As a result, almost any change labeled a "physical change or change in the method of operation" of a source will trigger NSR even if in reality it will not increase emissions at all, or even decreases emissions.

The question then become, what is a "physical change or change in the method of operation". EPA's application of the term is a moving target. Small repairs and improvements are needed constantly at complex sources like refineries. Under EPA's current approach, it is impossible to determine when such a repair or improvement will be counted as an NSR-triggering "physical/operational change", and when it will not. We know that EPA is increasingly aggressive in its claims that such repairs and improvements trigger NSR. However,

[2] EPA policy forbids sources that engage in "emissions trading" from counting their compliance margin as an "emissions credit" when it would be advantageous to the source to do so. See Draft Economic Incentive Program Guidance (September 1999) at 81, 106-107. But EPA NSR policy

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that change in position has never been subject to public notice and comment, as the Administrative Procedure Act requires. Some of its elements have not even been issued as guidance. In some cases, we do not even know what they are.

Let me offer two illustrations of these points, picked from many possible candidates.

- EPA's rules provide that "routine maintenance repair and replacement" does **not** trigger NSR. EPA has never defined these terms, either in rulemaking or guidance. However, recently, EPA has begun to claim in enforcement actions and informal conversations that this exclusion **never** applies to changes that increase the efficiency of a unit, improve its reliability, or reduce its costs. Under that approach, repairing or maintaining a 1990 unit with year 2000 components that improve its performance could trigger NSR. Such an approach is both economically and environmentally counterproductive. It destroys the "total quality improvement" programs that businesses must adopt in today's competitive markets – and that the Administration has endorsed because of their environmental benefits.

- EPA has always recognized that NSR is triggered when a **single** "physical change or change in the method of operation" causes an emissions increase. EPA has also always cautioned that if a source artificially splits a single project into two projects in order to avoid NSR, it will still treat that project as one. We agree. But EPA now claims that **all changes** at a plant should be aggregated together whenever they serve the "basic

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counts that same compliance margin toward non-compliance with NSR and uses it to trigger permit requirements.

purpose" of the facility. Since changes that did not serve that "basic purpose" would not be made, this is a formula for aggregating all changes that a plant makes into one change. Once those changes have been aggregated, the "actual-to-potential" test makes it virtually certain NSR requirements will be triggered.

V. THE CONSEQUENCES OF EPA'S CURRENT APPROACH TO NSR

EPA's current approach to NSR applicability results in significant compliance uncertainty, overburdens state and refinery resources, and hinders future environmental progress.

1. Compliance Uncertainty

Under EPA's current approach, it has become nearly impossible for any refinery to determine which of its activities might trigger NSR and which will not; EPA's requirements are extremely unclear and a constantly moving target.

Refiners cannot rely on the current written guidance to determine when NSR is required because the existing guidance is unclear and often contradictory. It consists of over 4,000 pages of guidance documents, many of which are in draft form and contradict each other, and various EPA memoranda. Many of EPA's new positions on NSR applicability contradict the older guidance, and are not even in writing. Refiners often do not know EPA's latest position until it is incorporated into an enforcement action or initiative.

Refiners should be able to rely on state permitting authority decisions to determine when NSR is applicable, but it now appears they cannot. In most states, EPA has delegated the implementation of the NSR program to state permitting authorities. The state permitting authorities make permitting decisions for refineries, and regularly inspect refineries to ensure that state decisions are properly implemented. EPA also reviews and approves the states'

programs, and periodically inspects the refineries themselves. However, compliance with state decisions does not necessarily accord with EPA's latest positions. In fact, EPA is currently conducting a widespread investigation of refineries regarding NSR permitting compliance as far back as 1980. In effect, EPA has called into question state NSR permitting decisions over the last 20 years. These decisions were not questioned during 20 years of state and EPA inspections.

2. Overburdening State Resources

Moreover, under EPA's current approach, hundreds of projects a year at a refinery might trigger NSR. No State has the resources to answer thousands of NSR permitting questions annually from all its major stationary sources, or to review its NSR permitting decisions over the past 20 years. Certainly, states have much better and more environmentally productive ways to invest their resources (e.g., expediting permitting for gasoline sulfur reduction requirements as EPA has agreed to do). State permitting may also be slowed down because states will proceed more cautiously for fear that they may be second-guessed by EPA. This may create permitting bottlenecks at the very time states need to proceed expeditiously to implement important upcoming regulations.

3. Overburdening Refineries

The end point of EPA's current position is universal NSR. However, no industrial economy could function if every change to a factory required a permit before construction could begin. This will be particularly burdensome for refineries given the operational changes necessary to comply with the blizzard of new fuel reformulation and stationary source regulations. EPA recognized that Congress did not intend universal NSR in its 1996 proposal for NSR reform, however EPA's new approach is achieving just that:

"...section 111(a)(4) of the Act could -- read literally -- encompass the most mundane activities at an industrial facility (even the repair or replacement of a single leaky pipe, or an insignificant change in the way that pipe is utilized). However, the EPA has recognized that Congress did not intend to make every activity at a source subject to major new source requirements under parts C and D. As a result, the EPA has adopted several exclusions from the 'physical or operational change' component of the definition. For instance, the EPA has specifically recognized that routine maintenance, repair and replacement...[is not by itself] considered a physical or operational change in the method of operation within the definition of major modification." 61 Fed. Reg. 38250, 38253 (July 23, 1996).

4. Hindering Future Environmental Progress

As discussed in section III, EPA's current approach to NSR threatens the Agency's future environmental agenda by posing significant logistical challenges for implementing important upcoming regulations.

Additionally, the unnecessary costs of EPA's current approach to NSR will compete with resources needed to implement these regulations. Our resources are limited and the costs of these upcoming regulatory initiatives are high. Just one of these regulations, the Tier II/gasoline sulfur reduction requirements, is expected to nearly double the refining industry's environmental expenditures to approximately $8 billion annually. Expected requirements to reformulate diesel fuel could increase these costs by half again.

We simply do not see the logic for applying EPA regulatory reinterpretation to activities that do not increase emissions, or actually reduce emissions.

VI. REFINING INDUSTRY GOALS FOR NSR REFORM

The refining industry is encouraged by our current round of discussions with EPA on NSR reform and hope that this joint effort will continue and produce real reform. The discussions so far have been candid and useful, but we still do not know clearly what to expect from them.

We believe that any real reform must address both substantive and procedural issues. Real reform should ensure that NSR applies only if emissions actually increase significantly. The current system of perpetual exposure to NSR cannot be defended.

Real reform must alter or abandon the "actual-to-potential" test so that changes that do not increase emissions do not automatically trigger NSR. Real reform must also change EPA's current approaches to "routine maintenance, repair and replacement" and "aggregation", which work together with the "actual-to-potential" test to create exposure to NSR for virtually any change a plant makes. Perpetual NSR is unworkable, contrary to Congressional intent, and bad environmental policy.

Finally, real reform will address the need to expedite rather than hinder efforts to comply with federally-mandated environmental programs.

These changes should be subject to full public review and comment.

VII. EPA'S ENFORCEMENT INITIATIVE WILL UNDERMINE NSR REFORM.

I would like to conclude with a word about enforcement.

Over the past two years, EPA has been conducting a massive investigation of the refining industry, and several other industries, for purported "widespread" noncompliance of the NSR

program. Violations of NSR do occur, and the government should pursue them whenever they do. However, the refining industry believes EPA's allegations of widespread noncompliance are based on new and controversial reinterpretations of the NSR requirements that amount to rulemaking without notice and comment. By making fundamental changes to the NSR program through enforcement actions, EPA threatens to undermine the NSR reform process and any clarification of the program that reform can provide.

The reinterpretations that EPA wants to retroactively enforce would allow EPA to claim that virtually any source is subject to NSR. As previously discussed, this approach would be impossible to comply with, overburden state and industry resources, and undermine the implementation of future environmental regulations.

By questioning state permitting decisions and policy over the past 20 years, EPA will only further slow down the permitting process and divert state resources towards reviewing past decisions. This is inappropriate at a time when it is critical that state permitting authorities and refiners work together to expedite the permitting processes for important upcoming environmental regulations, such as the Tier II/ gasoline sulfur reductions requirements.

The decision criteria for many NSR issues are so opaque, and have changed so many times, that, in our view, it is neither fair, nor just, nor sound public policy to make them the excuse for an aggressive enforcement program. The opportunity for public comment and congressional review of EPA's proposed reinterpretation of NSR is necessary to respect the due process rights of those who have to comply. If EPA wants to revise the NSR program, it should do so through the reform process.

NPRA Testimony before Senate Environment and Public Works
Subcommittee on Clean Air, Wetlands, Private Property and Nuclear Safety
April 5, 2001

Good morning, I am Bob Slaughter, General Counsel of the National Petrochemical and Refiners Association (NPRA) and I thank you for this opportunity to offer our views on national energy policy. NPRA represents almost 500 companies, including virtually all of the domestic refining capacity and most petrochemical manufacturers with processes similar to refiners.

Our members supply consumers with a wide variety of products that are used daily in homes and businesses. These products include gasoline, diesel fuel, home heating oil, jet fuel, lubricants and the chemicals that serve as the "building blocks" in making products as diverse as plastics, clothing, medicine and computers. For many of our members, energy is both an input and output. Thus, discussion of the direction for our nation's energy policy is of vital and direct interest to them. NPRA's members are eager to be part of the dialogue to identify ways to develop additional energy supplies, enhance national security and use energy more efficiently.

In this testimony, we would like to:

- provide our perspective on the current energy situation and how it developed;
- highlight several key regulatory programs that have made, or will soon make, it more difficult to meet consumers' energy needs; and
- identify fundamental policy principles that we think should be used to shape new energy policy directions.

In the past year or so, consumers have experienced supply and cost impacts from disruptions in heating oil, gasoline, natural gas and electricity markets. While weather, unforeseen equipment problems in the energy supply and distribution infrastructure, and changes in consumer demand patterns all can play a role in increasing costs, government policy also is a major determinant of whether adequate supplies of energy will be available at reasonable cost.

It has been many years since we've had a serious national debate on energy policy. For much of the last decade or two, low prices and plentiful supplies have enabled consumers to take energy for granted. As a result, policies have often been pursued in a piecemeal fashion and without the necessary attention to their impact on our overall supply of energy and on the mix of individual energy supply sources. As a nation, we have not seen the "big picture" because we often have not examined the cumulative impact of regulatory programs nor have we fully balanced other important national goals such as environmental improvement with the need to maintain reliable domestic energy supplies. Too often, we have not acknowledged the difficult tradeoffs inherent in major

policy decisions. And, we have, at times, even assumed that these tradeoffs do not exist. Although as electricity customers in California can attest, reality does eventually intrude.

Thus, our recent energy situation has been characterized by:

1) significant concerns about heating oil prices in the Northeast last winter after a prolonged cold snap;
2) shortages of gasoline in the Midwest early last summer with prices that exceeded $2 per gallon;
3) natural gas prices that hit a record high this winter resulting in consumer heating bills estimated at triple last year's levels; and
4) rolling blackouts in California and very high electricity prices throughout the West with concerns being voiced about the ability to meet electricity demand this summer in cities such as New York and Chicago.

Overall, our national energy policy, such as it has been, has resulted in the following:

- Domestic oil production is declining.
- Domestic natural gas production, while growing, still has not returned to where it was in the early 1970s.
- Imports of crude oil and refined petroleum products are increasing.
- Refining capacity is stretched to its limit and the prospects for expansion are limited by regulatory policies.
- The nation's energy delivery infrastructure is aging and increasingly overwhelmed by demand, with new construction and/or expansion made more difficult by regulatory impediments.

According to the Energy Information Administration's (EIA) Annual Energy Outlook 2001, total U.S. energy consumption in 2000, by fuel source, was:

- 39% oil
- 23% natural gas
- 22% coal
- 16% nuclear, hydropower and non-hydro renewables

While on the surface this may seem like a reasonably diverse mix of energy use, critical sectors of the economy are much more heavily reliant on a particular energy source.

For example, barring unforeseen technological advances, petroleum products will be needed to provide the vast majority of transportation fuels for at least the next decade or longer. EIA estimates that petroleum use for transportation will increase by 5.6 million barrels per day (MMB/D) between 1999 and 2020.

However, domestic refiners are increasingly challenged in just meeting existing demand. Since 1983, the number of US refineries has decreased from 231 to the 152

that are operating now. While total refining capacity has remained relatively stable throughout this period, demand has increased dramatically. Thus, for a substantial period of the last year, refineries were running at or near their operational maximum. The overall U.S. refinery utilization rate peaked at 97% last summer but was as high as 94% in December (based on EIA data). As the attached graph from the recent National Petroleum Council (NPC) study ("U.S. Petroleum Refining: Assuring the Adequacy and Affordability of Cleaner Fuels") shows, U.S. demand for petroleum products exceeds domestic refining capacity, hence the growth in refined petroleum product imports (see attachment 1).

Due to both financial and regulatory constraints, it is rather unlikely that new refineries will be constructed in the United States. Indeed, there has been no new refinery built in about 20 years. Rates of return for refineries have averaged about 5% in the last decade, roughly equivalent to the return from a passbook savings account – but with much greater risk. In the same period, refiners were required to make substantial capital investments to meet environmental requirements – investments that the NPC estimated were greater than the book value of the refineries themselves.

Since there are few currently viable substitutes for petroleum-based transportation fuels, the emphasis in the environmental arena has been on reducing emissions and making petroleum products cleaner burning. Since the Clean Air Act Amendments of 1990, refiners have had to:

- reduce the volatility of gasoline (as measured by its RVP);
- introduce oxygenated fuels in carbon monoxide nonattainment areas;
- reduce on-highway diesel fuel sulfur levels;
- introduce federal reformulated gasoline in 1995 with a second phase requiring even more stringent emission reductions in 2000.

And, refiners face even more challenges ahead. As this chart demonstrates (see attachment 2), an avalanche of new environmental requirements faces refiners – most of which fall within the same narrow time period for implementation. While I will address a couple of these programs later, the investment requirements that refiners face will be substantial and may raise questions about their continued viability. NPRA estimates that some $20 billion must be spent over the next decade to comply with newly issued or anticipated gasoline and diesel fuel requirements. The recent closure of one Midwest refinery is a reminder that we cannot assume that all existing refineries will continue to operate.

Thus, for domestic refiners to maintain or grow capacity, expansions must be made at existing sites. The alternative is to meet increased demand with increased imports of petroleum products. Unfortunately, EPA's permitting programs and the retroactive

reinterpretation of its rules has made expansion of existing capacity an even more formidable challenge. I will discuss this in more detail later.

Further, the product distribution structure is already severely challenged, even without new fuel requirements. This chart (attachment 3) was prepared by ExxonMobil and identifies current fuel requirements within different regions of the United States. A complicating factor in recent years has been the addition of area-specific and state requirements (so-called "boutique" fuels) to the federal programs already in place. As you can see from this map, more than 16 categories of gasoline are represented (14 shown in color on the map plus conventional gasoline meeting Northern and Southern volatility requirements) . Assuming three grades (regular, midgrade and premium) of each type of gasoline, there are almost 50 distinct gasolines represented on this chart. And that is before any new requirements are considered.

Pipelines and fuel terminal operators struggle to keep all these grades separate. In the future, they could be faced with the need for additional segregations and new storage tanks to maintain compliance and fuel integrity. Yet, they, too are faced with additional constraints on their operations and, like refiners, find it difficult to expand their facilities. Recent experience with the Longhorn pipeline is an example of new constraints that pipelines face since Longhorn had to commit to not carrying fuels containing MTBE in order to gain permits and the necessary approvals.

The proliferation of these many different requirements has led to increased volatility in gasoline markets and to reduced flexibility in shifting available supplies to areas that need fuel the most. As we saw in the Midwest last summer and California previously, differing fuel specifications can severely limit the ability to move supplies to areas that are short.

When demand exceeds supply, market economics operate so that price becomes the allocation mechanism for any available supplies, hence the type of price spikes seen last summer in Chicago. The former Chairman of the Federal Trade Commission (FTC), Robert Pitofsky, in reference to the Commission's report on Midwest gasoline prices, noted that "while there were many short-term causes of the increases, the underlying lack of U.S. refinery capacity threatens similar price spikes in the future in the Midwest and elsewhere."

Looking ahead, fundamental changes in energy markets have increased the potential for supply constraints and price volatility. Due to these changes, it is even more important that future government policies be fully evaluated to determine and understand the impact on energy supplies. However, first we must deal with several ongoing initiatives that we believe pose threats to future energy supplies.

The first is EPA's New Source Review enforcement program, which, for refiners, began in 1999. Let me be clear, the refining industry is not arguing against enforcement, rather we are asking for fairness in ensuring compliance by all. EPA has been engaging in retroactive reinterpretation of its permitting rules – what we see as

regulation through enforcement rather than through a public rulemaking process. In doing this, EPA has focused on two energy providers that already face increasing difficulties in meeting consumers' energy needs -- utilities and domestic refineries. In short, EPA is seeking to fine those who acted in good faith but who failed to comprehend the incomprehensible – EPA's reinterpretation of the rules after the fact.

EPA has reinterpreted its rules covering modifications to existing facilities long after those modifications have been completed. Companies have been faced with potential fines in the millions and pressed to make binding commitments for installing specific, additional emissions reduction technologies at their facilities. Three have settled with EPA simply in order to get on with their business, others are talking with EPA and others have already begun or are considering legal challenges to EPA's actions. EPA's enforcement reinterpretations center on two key elements of the NSR permitting requirements, 1) the provisions allowing exemptions for routine maintenance, repair and replacement activities, and 2) calculation of whether an action resulted in significant emissions increases using a discredited method for determining emissions based on "potential" rather than actual emissions.

Senators Inhofe and Breaux have recently sent a letter to Vice President Cheney questioning EPA's approach. We agree with their concern that unless addressed, "...EPA's implementation of NSR permitting requirements will continue to thwart the nation's ability to maintain and expand refinery capacity to meet fuel requirements." We also agree that "EPA's NSR interpretations have created great uncertainty as to whether projects long recognized to be excluded from NSR permitting can be undertaken in the coming months to assure adequate and reliable energy supplies."

Also as noted earlier, refiners face an avalanche of new regulatory requirements that will require many facility modifications. The effect of the uncertainties surrounding EPA's NSR interpretations will be to slow down future modifications necessary to produce complying fuels and to discourage expansions of refinery capacity. Remember, that the industry's ability to meet consumers' demands for fuels today in part depends on these modifications now questioned retroactively by EPA. If refiners had not acted – and they acted in compliance with interpretations of the law and regulations at the time – we would be worse off today and quite likely be facing reduced fuel supplies and higher costs. And, unless capacity can be further expanded to meet increasing demand, domestic fuel supplies will grow tighter and markets more volatile.

NPRA hopes that this committee will give thorough review of EPA's NSR program implementation a high priority. Further, it may well be time to reassess this program. Of course, for the sake of equity, consideration of future action will need to consider those who have settled with EPA so as not to place them at a disadvantage.

Companies need greater certainty if they are to move forward. The current uncertainty threatens the implementation of key environmental programs such as the Tier II low sulfur gasoline program. This program begins in just a few years and will require numerous refinery modifications. Yet, because it is both difficult to determine when an

NSR permit is needed and quite time-consuming to secure permits, the current state of the program may prevent the timely introduction of cleaner burning fuels.

This is a key time not only to address the problems of the past, but also to consider improvements for the future. For example, flexibility in meeting requirements could be enhanced by greater use of market-based incentives in permitting programs. The effectiveness of market-based incentives has been demonstrated in the successful sulfur dioxide trading program implemented under the acid rain provisions of the Clean Air Act. Administrator Whitman, in her recent letter issuing EPA's FY2000 Annual Report, highlighted the importance of these types of incentives.

Ideas such as cap and trade, averaging and "bubbling" (setting an emissions target for a facility, not for individual processes or pieces of equipment) should be explored as ways to provide assurances of environmental improvements without further constraining refiners' ability to operate and their ability to produce needed fuel supplies. The bottom line is that fuel supplies will be further strained unless a more flexible, efficient and streamlined permitting process can be developed. NPRA urges the Administration to review EPA's existing enforcement initiative and to include improvements in the permitting process as essential elements of national energy policy.

One need only look to California to see some of the impediments that overly complex and confusing permitting processes can play in impeding the development of energy supplies. We understand that, in response to the electricity shortages, Governor Davis has ordered an expedited process to be applied to new electric generation capacity.

Another EPA initiative that could severely jeopardize fuel supplies and economic growth is the ultra-low sulfur diesel program that was quickly adopted in the waning days of the previous Administration. The refining industry is committed to lowering sulfur in diesel fuel, having offered its own proposal to reduce sulfur by 90% from today's levels. However, EPA adopted a less cost-effective program by choosing a reduction of 97% and an effective date of 2006. As a result, future diesel fuel supplies are in jeopardy and vital parts of the economy are at risk. Most goods in the US are shipped by truck, including agricultural products.

Regarding the threat to fuel supplies, Charles River Associates (in a study commissioned by API) determined that the EPA proposal would result in an average supply shortfall of 12% versus current supplies. However, that is a national average and regional shortfalls could be greater – Charles River Associates estimates that the Rocky Mountain region could face a shortfall of 37%.

And, to make matters more difficult, the program's effective date forces refiners to make major investments in the same timeframe that they must modify refineries to produce low sulfur gasoline. These overlapping timeframes raise serious questions about the availability of the engineering and construction resources needed to tackle both programs simultaneously. As a result, the previously mentioned National Petroleum Council study cautioned that "...a significant risk of inadequate supplies will result."

During the course of the rulemaking, the agricultural community, food marketers, trucking industry and even the Department of Defense raised concerns about diesel fuel availability and cost. And the nation's largest producer of truck engines also questioned EPA's analysis of the rule, indicating that its estimate of the potential engine costs (using a combination of as yet unproven technologies) to meet the heavy duty truck standards is some six times higher than EPA's.

NPRA tried many times to convince EPA to study this rule further before deciding on a standard that could mortgage future fuel supplies. We urged that they take the time to fully appreciate the energy supply impacts as well as the environmental benefits through an independent analysis by a third party such as the National Academy of Sciences. We would continue to welcome such an assessment. Meanwhile, we are pursuing every avenue, including litigation, to focus attention on and fix a rule that we think will have severe supply consequences. Simply put, we are very concerned about the current timeframe for this rule and think it should be adjusted. Such a step would correct the supply problems associated in this rule without undercutting its environmental benefits.

A third area of concern for future energy supplies relates to efforts to reduce the use of MTBE. The Clean Air Act Amendments of 1990 require the use of oxygenates, such as MTBE in federal reformulated gasoline (RFG) to ensure that an average of 2% oxygen by weight is maintained in this fuel. Oxygenates, like MTBE and ethanol, can assist in the production of cleaner burning fuels. They help expand the overall amount of gasoline supplies, add octane for better fuel performance and help reduce the use of other blending components that may make it more difficult to achieve lower emissions. However, oxygenates also present tradeoffs. MTBE can move farther and faster through the soil and into groundwater supplies should there be a spill or leak. Ethanol requires the use of lower volatility blendstocks to compensate for the increase in evaporative emissions otherwise associated with ethanol fuels. And, since ethanol rapidly separates out from the gasoline blend when even small amounts of water are present, ethanol blends generally cannot be shipped through pipelines, requiring special blending equipment and additional storage tanks at fuel terminals.

Several states, including California, New York and Connecticut, have set deadlines for ending the use of MTBE in gasoline due to groundwater concerns. However, MTBE does currently play a significant role in supplementing gasoline supplies. MTBE represents about 4% of the nation's gasoline supply on average, and even more in RFG areas on the coasts – 11%. Thus, we must fully understand the implications of actions to reduce its use on gasoline supplies.

NPRA supports strong underground tank enforcement and prompt clean-up of water already affected by MTBE. Further, if MTBE use is reduced, the 2% RFG oxygen mandate should be eliminated, while the air toxics reductions achieved in RFG with the help of oxygenate blending are maintained. Renewables, such as ethanol, can help expand our fuel supplies, but, given the logistics constraints on their shipment, they

must be allowed to be used where they make the most sense. Ethanol will continue to grow in importance as a source of fuel octane, but forcing its use through mandates will increase consumers' fuel costs.

In closing, let me address the question of what should guide future energy policy. We suggest the following as key guidelines to follow:

1. Don't pick a favorite. The nation is best served by a diverse portfolio of energy supplies. Natural gas is a good example of a fuel whose consumption pattern has been changed by government policy. A few of us still remember the 1970s when concerns about natural gas supplies led, for a time, to prohibition of its use for electricity generation. More plentiful supplies in much of the intervening period have generally erased that memory. Yet, environmental policy objectives have led to increased natural gas use for electricity generation. And, this trend seems likely to continue absent a serious commitment to improving clean coal technology or a change in attitude regarding nuclear power. Indeed, natural gas use for electricity generation (excluding cogeneration) is projected by EIA to triple over the next two decades. EIA expects that 89% of new electricity generation built between now and 2020 will be gas-fired. Absent additional natural gas supplies in the United States (and Canada) and additional pipeline capacity to transport these supplies, questions arise regarding the continued availability of natural gas and natural gas liquids as reliable and affordable petrochemical feedstocks that allow domestic petrochemical producers to be competitive in global markets.

2. Provide access. Many areas in the United States have been placed "off limits" for oil and gas exploration and development. We understand concerns for protecting the environment of these areas. However, technology is available to minimize the development "footprint" and to help prevent adverse impacts. If we are to enhance domestic supplies, access is needed to promising areas for domestic oil and gas development.

3. Encourage new technologies to revitalize traditional energy sources. For example, domestic coal reserves are considerable and coal could continue to play a key role in our energy equation if "clean coal" research and development was given greater emphasis and encouragement. And, contributions made in one energy sector can have important benefits in others. For instance, coal could make an important contribution in powering future electricity generation in an environmentally acceptable manner and thus allow natural gas (and natural gas liquids) to provide reliable feedstocks for petrochemicals where there are few, if any, substitutes.

4. Don't forget the full energy supply chain. While a focus on "upstream" issues such as improved access to promising acreage is important in order to expand the "input" side, oil and gas are raw materials that must be converted into consumer products and delivered to end users. As noted earlier, there is a critical need to remove existing impediments to expanding refinery capacity as well as to continue to seek policy enhancements that can maintain, or increase, domestic supplies. Similarly,

emphasis should be placed on improving our domestic product distribution infrastructure.

5. Strike a sensible balance. As we know from our own lives, decisions involve tradeoffs. We all could probably agree that we should work to preserve the dramatic environmental improvements that have been made in the last few decades. However, we all also can agree that Americans would like to continue to improve their lifestyles and encourage further economic growth. In order to honor all these goals, we must first fully understand the implications of policy choices and then carefully weigh the tradeoffs inherent in those choices. Recently, we have not focused on our nation's energy needs as much as we should. We need to strike a better balance between environmental goals and our need for reliable energy supplies. These need not be incompatible goals, but we do need to work on the right balance. There are policy tools that can help us make more informed decisions and more fully understand the tradeoffs we face. Thus, you might consider the development of energy impact analyses for major rulemakings. Similarly, periodic review of the cumulative effects of regulations could help us understand whether the balance is shifting too far in one direction or the other.

6. Pursue improvements in how regulations are made. Lessons have been learned about how to develop more effective, and more efficient, regulations. It is time to put those lessons to work for us in developing national energy policy. We should set performance goals rather than mandating the use of specific technologies or setting product specifications. The command and control approach stifles innovation. We should avoid overlapping leadtimes for regulatory programs whenever possible. Costs will be greater for programs that must compete in the same time period for necessary goods and services to ensure compliance. We should enhance flexibility through market-based mechanisms and incentives. Emissions credit trading has been demonstrated to lower compliance costs. Incentives could help encourage earlier introduction of cleaner fuels without jeopardizing refiners' viability through unrealistically stringent mandates. And, we must rely on the best information available to inform our policy choices. Use of sound science and cost-benefit analyses would help us better understand the tradeoffs in policy decisions.

Finally, while I have concentrated on how to enhance energy supplies today, we cannot forget about the demand side of the equation. Improving the efficiency of energy use should also play a vital role in helping us meet our energy needs. For example, lighter weight materials can assist in improving vehicle fuel economy. Incentives for the purchase of higher fuel economy vehicles might also be considered. Improvements in our roads to improve traffic flow and reduce congestion can also help conserve our energy resources.

Thank you again for the opportunity to share our views. I look forward to responding to your questions.

Comments of the National Petrochemical and Refiners Association (NPRA) At the Environmental Protection Agency Hearing Regarding the Clean Air Act New Source Review Program in Cincinnati, Ohio on July 10, 2001

Thank you for the opportunity to discuss EPA's New Source Review program and its impact on refinery capacity and fuel supplies. My name is Bob Slaughter, and I am General Counsel of the National Petrochemical and Refiners Association (NPRA). NPRA members include the owners and operators of approximately 98% of U.S. refining capacity, as well as petrochemical manufacturers with processes similar to refining.

NPRA welcomes the President's decision to review the current state of the NSR program and to evaluate changes to improve its efficiency. NPRA also supports the President's Executive Orders to require an energy impact statement as part of all significant regulatory actions and to encourage expedited permitting. The NSR program, as currently interpreted, threatens current and future energy supplies. It also discourages the installation of new technology that could enhance energy efficiency and/or help produce cleaner fuels.

On June 27, NPRA and 12 of its member companies met with EPA to discuss problems with the NSR program. The companies brought along many specific examples of how the program postponed the production of cleaner fuels, prevented the implementation of energy efficiency projects, and delayed or prevented the expansion of domestic refining capacity at existing facilities. We will submit these examples for the record. We look forward to continuing to work with EPA to reform the NSR program so that it facilitates, rather than impedes, economic growth, energy supply and environmental progress.

In addition, we have reviewed EPA's preliminary background report on the NSR program, which was published on the EPA website on June 22. Although helpful in some respects, the NSR permitting timelines reflected in that study significantly understate the time required to get such a permit in the real world. We also believe that the study attempts to downplay the real effect of the current NSR program on refining investment decisions. It does this by trying to restrict NSR impacts to situations in which NSR is a sole factor; not, as in the vast majority of cases, where NSR has a very serious impact but is joined with one or more additional considerations. We will offer additional comments on the study as part of the record.

Emissions are Decreasing and the Air is Getting Cleaner

At the outset, we should remember that the refining industry has dramatically reduced its direct and indirect emissions since Clean Air Act regulation began. According to EPA's figures, between 1980 and 1996 the refining industry reduced its criteria pollutant air emissions by 74%. Congress and the EPA have required us to attain additional dramatic reductions in the next few years, largely through rulemaking activities taken under the authority of the 1990 Clean Air Act Amendments.

The refining industry's contributions to improved air quality reflect the progress made by the nation as a whole. On June 26 the EPA announced that between 1970 and 1999 total emissions of the Clean Air Act's six criteria pollutants decreased 31% at a time of considerable growth in both the economy and population. The agency attributed the improved air quality to effective implementation of clean air laws and regulations and improved efficiency of industrial technologies. Updating and improving the NSR program should be viewed in the context of this trend of improving air quality and should be considered as a way to maintain it. EPA should make all data regarding air quality improvements a part of the record during this review.

NSR Reform is Needed to Increase Energy Supply

Recently, American consumers have been concerned that supplies of gasoline and other petroleum products may not be sufficient to meet their needs. These concerns resulted from short-term supply disruptions, primarily in California and the Midwest, caused by several factors, the most significant being stress upon the fuel refining and distribution system and more stringent or different fuel specifications than in other areas.

At this moment, gasoline supply and price concerns have abated somewhat, because the refining industry produced record amounts of gasoline over the past two months in preparation for this summer's driving season. This record production was possible only because domestic refineries ran at near 99% rates of utilization for a considerable period of time. During this critical period, the industry was spared the type of unforeseeable equipment upsets in the refining and distribution system that occurred last year.

No industry can perform at near 100% rates of utilization for all or even most of the time. The manufacturing industry considers 85% utilization as full capacity. Yet the domestic refining industry has performed at greater than a 95% average rate of utilization each year since 1996. The industry has had to run at maximum levels because, while U.S. demand for petroleum products continues to rise, the number of refineries fell by one-fourth between 1990 and 2000. By adding capacity to existing sites, the industry was able to prevent a reduction in total U.S. capacity during that period. However, with rising demand, the difference was made up by increased imports of refined products.

The U.S. Energy Information Administration projects that the demand for petroleum products will increase roughly 1.4% per year during the next twenty years. Domestic refining capacity must increase to supply the fuel needed for our growing economy. We must have a flexible and efficient NSR program and permitting system to allow this capacity expansion to take place while maintaining our commitment to protect and enhance air quality. The NSR program, as currently interpreted, cannot be relied upon to facilitate this growth and, in fact, discourages environmental improvement.

NSR Reform is Needed to Produce Cleaner Fuels

The refining industry also must implement extensive new environmental regulations in the next 3 to 5 years. These include requirements for control of refinery emissions as

well as for ultra low sulfur gasoline and diesel fuel. In the case of gasoline, regulations also require the reduction of selected air toxics. Also, Congress or the EPA may consider requiring the phase-down or elimination of the gasoline additive MTBE, as the states of California, New York and Connecticut are doing, necessitating further changes in gasoline production.

Refiners face tremendous logistical challenges in meeting the ambitious goals and deadlines of these important new regulations. Refiners must make many infrastructure and process changes to comply. The current state of the NSR program directly threatens the industry's ability to meet the deadlines for this suite of new regulations.

The Current NSR Program Creates Gridlock and Retards Progress

NPRA's members are greatly concerned about the current condition of the NSR/PSD program. EPA's current approach to NSR applicability makes it extremely difficult for refiners to determine when NSR permitting controls are required and leaves refiners in enforcement jeopardy unless they consider NSR for any and all operational changes. The breakdown of the NSR program results from the fact that EPA has reinterpreted the program in recent years so as to enable the Agency to allege that virtually any change a source might make requires NSR permitting and controls, even if emissions have not increased.

In creating NSR, Congress intended that facilities that significantly increase emissions, by adding new equipment or making major changes, must install the latest pollution control equipment. NSR was never intended to impose new controls on older facilities simply because of their age and/or need for routine maintenance.

The NSR Program Should Be Fixed and Flexibility Options Added

NPRA believes that the NSR program can be substantially improved by incorporating a market-based compliance alternative. This is a flexible alternative featuring a cap and trade mechanism based upon performance standards. This mechanism would allow the flexibility to make changes in a facility or to acquire credits, while ensuring there would be no net increase in emissions. Such an approach would encourage facility operators to find the most cost-efficient means of achieving emission reductions.

This flexible mechanism (similar to that already used in some states such as Texas and New Jersey) should be available as a voluntary alternative to an improved version of the current NSR program. The plant-wide applicability limit option included in the Marathon Ashland settlement is one example of this approach, but others should be considered and made available. At the same time, the current program must be reformed to clearly indicate when it is applicable and to minimize differing interpretations between EPA and state/local agencies.

Unfair Enforcement Actions Should Cease

It is time to end the environment of uncertainty and recrimination that currently surrounds the NSR program. The way to do this is by reforming the current program and by including a flexible compliance option, as suggested above. It is also necessary to bring to an end the massive investigation of this and other industries for alleged noncompliance with the existing NSR program. The decision criteria for many NSR issues are so opaque, and have changed so many times that, in our view, it is neither fair, nor just, nor sound public policy to make them the excuse for an aggressive enforcement program. We believe that this unjustified enforcement activity should cease.

NPRA's suggested approach for the program going forward could be used as a template to offer to resolve all NSR-related controversies. This option should also be offered to the four companies who have already settled with EPA, so as not to place them at a competitive disadvantage.

NPRA believes that an appropriate program must be based upon a consensus between the regulators and the regulated parties as to its objectives and operation. A strengthened program resulting from such a consensus can better achieve the nation's important public policy objectives: increased energy supplies, economic growth, and continued environmental progress. And it can do so in an atmosphere of greater trust.

NPRA's members look forward to the end of this period of NSR gridlock and will work together with EPA to achieve the improvements in this program that we have outlined.

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Bob Slaughter
General Counsel &
Director, Public Policy

July 23, 2001

Ms. Stephanie Daigle
Chief of Staff
Office of Policy, Economics and Innovation
U.S. Environmental Protection Agency
ARF 3513; Mail Code 1804A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

Dear Ms. Daigle:

The National Petrochemical and Refiners Association (NPRA) appreciated the opportunity to meet with you recently to discuss the New Source Review (NSR) program. This meeting was part of the review of the NSR program's impact on the refining and utility industries, as part of the President's Energy Plan. NPRA welcomes the Administration's decision to examine what we believe to be a strong case for modernizing and improving the NSR program.

NPRA represents about 98% of US refining capacity as well as petrochemical manufacturers with similar processes. As the dozen NPRA refiner members at our meeting indicated, we have a direct and substantial interest in EPA's review of the NSR program. We hope your review will provide a basis for removing uncertainties introduced by recent reinterpretations of the program and for improving its design to ensure continued improvement in air quality while providing flexibility to do so in the most cost-effective manner.

The NSR Program Impedes Energy and Environmental Progress

Uncertainties about the program's interpretations have often placed our members in a state of retroactive "enforcement jeopardy" while adding considerable delay and cost to refinery projects. The ultimate effect has been to constrain the industry's ability to (1) expand domestic refining capacity, (2) increase the supply of cleaner burning fuels, and (3) enhance energy efficiency. The unavoidable conclusion is that recent

administration of the NSR program has had an adverse impact on the nation's fuel supplies and that the program merits careful review and reform.

The Attached Examples Show That Real Problems Exist

To demonstrate NSR's "real world" impact, we have collected from our members some concrete examples of refining projects affected by NSR-related uncertainties. Attachment 1 contains more than 30 examples showing how NSR reinterpretations in the recent past have had a chilling effect on desirable investments or added considerable delay and cost.

Attachment 2 summarizes additional, potential problems based on several case studies addressed by EPA representatives at a March, 2001 meeting sponsored by the Air and Waste Management Association.

The Refining Industry Faces Many Unique Challenges

As you consider these examples, and design subsequent improvements in the NSR program, NPRA asks that you keep in mind several key aspects of refining operations:

- US refineries have been operating at or near maximum rates for several years--95% of capacity or higher. (The manufacturing industry considers 85% utilization as full capacity.) This extraordinarily high capacity utilization is expected to continue in the foreseeable future. In these circumstances, if equipment outages are to be prevented or minimized, the industry must conduct frequent and careful maintenance. Therefore, interpretation of what constitutes "routine repair, maintenance and replacement" under NSR is particularly significant to allow the industry to continue necessary refining operations.

- Refining operations are continuous and complex. They depend on the simultaneous operation of many individual, but inter-related, pieces of equipment ("units"). A delay or inability to change or improve operations of a single unit can have a significant cumulative impact on the refinery's ability to produce the fuels that its customers, and the national economy, rely upon.

- Domestic refiners face an avalanche of ambitious and far-reaching regulatory requirements in the next several years. These regulations will necessitate substantial changes in refinery operations and equipment to produce cleaner burning fuels. They could cost the industry up to $20 billion total (as estimated in June 2000 National Petroleum Council report on the viability of the US refining industry). The overlapping implementation dates for these regulations will pose a permitting challenge even under the best of circumstances. However, if the current uncertainties surrounding the NSR program persist and refiners continue to receive conflicting guidance from

federal and state officials, it may prove impossible to comply with these requirements and provide adequate fuel supplies.

- From an air quality perspective, refinery operations are more than just the sum of the activities within the refinery fence. For example, refinery modifications to produce cleaner burning fuels result in significant reductions in vehicle emissions when those fuels are consumed. Unfortunately, this improvement in air quality is not currently recognized in the NSR program and the permitting process.

Problems With The Existing NSR Program Must Be Corrected

Clarifications of and improvements in the existing NSR program are urgently needed. In addition to issues regarding interpretation of what constitutes routine repair and maintenance, the use of the "actual to potential" test can trigger permitting requirements when, in fact, there will be no increase in emissions. In addition, misuse of the aggregation requirement should be ended and recent changes in the treatment of "debottlenecking" activities should be reconsidered and reversed.

Thorough reform of the NSR program itself is a necessary foundation for prospective modernization of all U.S. complex manufacturing industries, including refining. In the meantime, given the urgent need to provide greater clarity in the program, we strongly urge the Administration to exercise its administrative authority to reform the program to the greatest extent possible.

A Flexible, Performance-Based Option Should Be Added to NSR

NPRA also believes that we should explore and incorporate measures to provide additional regulatory flexibility. This can be done without jeopardizing environmental progress. Several state permitting programs (including Texas and New Jersey) provide flexibility features such as "cap and trade" programs. In addition, EPA's own recent settlement agreement with Marathon Ashland provides for use of a PAL (plantwide applicability limit), which should provide flexibility depending on how key details of that program are developed.

NPRA believes that the concept of a facility emissions target rather than emissions limits on each of the many individual pieces of refinery equipment should be added to the NSR program. The policy goal of continued environmental progress can best be met through broad performance standards rather than technology mandates or narrowly defined emissions limits on each piece of equipment.

Thus, NPRA urges that EPA also consider developing a voluntary alternative compliance mechanism. In the interest of further discussion, we have included as Attachment 3 an outline of the potential elements of such an approach. We fully

recognize that our thoughts provide only a framework and that additional details must be developed. We would be glad to work with EPA, state and local officials and other stakeholders to help move the concept forward and to develop this approach further.

We appreciate EPA's interest in our industry's experience with the NSR program and your willingness to understand the many challenges domestic refiners face. NPRA is committed to working closely with you to improve the program. If you have any questions or need any further information, please do not hesitate to call me at 202 457 0480.

Sincerely,

Bob Slaughter

Bob Slaughter

Attachments

Attachment 1: New Source Review Examples

EXAMPLE	RESULTS OF CURRENT INTERPRETATION	IMPACT ON CLEAN FUELS, CAPACITY, AND ENERGY EFFICIENCY
1. A small refinery, located in an attainment area for all NAAQS, this year submitted a minor NSR permit application to implement a project key to its low sulfur fuels (gasoline and diesel) strategy. The facility has a historical under-utilization of heater and boiler capacity (i.e., actual firing rates have been well below design capacities due to various reasons, including the cyclical nature of hydrodesulfurization unit reactor charge heaters which increase firing as catalyst deactivates, and therefore are sized for end-of-run conditions).	The current NSR applicability procedure requiring the comparison of past actual to future potential emissions strongly encourages a "use it or lose it" mentality rather than an emissions reduction incentive. The facility had to accept voluntary restrictions on the operating capacity of an existing otherwise unaffected heater in order to avoid a complex PSD netting analysis and possibly PSD new source review permitting. Furthermore, the refinery was penalized for the over-control of refinery fuel gas H2S to about 1/10 of the NSPS Subpart J limit (or state-equivalent for non-NSPS combustion devices) by having to assume the full NSPS limit (i.e., the applicable standard) as the "post-project potential" SO2 emissions.	Restrictions place an artificial limit on the refinery's capacity to produce clean fuels.

Attachment 1: New Source Review Examples

2. A large refinery was on a tight schedule to begin modifications to enable the production of federal reformulated gasoline and California Phase 2 reformulated gasoline. The first project would reduce total air pollutant emissions from the refinery, both on an overall mass basis and on a pollutant-by-pollutant basis, by increasing the efficiency of certain operations, removing older process units from service, and installing state-of-the-art emission controls. These reductions would improve air quality in the nonattainment area.	Agency delays in the environmental review process jeopardized the refinery's ability to meet regulatory deadlines for producing the reformulated gasoline. The local permitting agency reviewed and authorized site preparation and other activities the refinery undertook prior to actually receiving its NSR permit under the agency's SIP-approved permit rule and established agency guidance. EPA interpreted the local agency's rule differently, and issued a § 114 request followed by a notice of violation and a "stop work" order. The refinery obtained an extraordinary stay of EPA's administrative order from the U.S. Court of Appeals, and completed the project just in time, despite continued EPA threats to file a civil action for penalties. EPA overfiling and direct involvement in individual permits creates an atmosphere of uncertainty for both projects and state/local permit agencies.	The permitting uncertainty created by EPA's current interpretation of NSR, and the threat of EPA overfiling resulted in delay and the use of extraordinary measures and resources by the refinery to obtain a permit for clean fuels.
3. A small refiner is contemplating the installation of a distillate hydrotreater for low sulfur diesel fuel.	In order for the refiner to install the equipment that refines the "clean fuel," it is confronted with NSR permit constraints that may make a project that has built-in environmental benefits cost prohibitive to construct.	Foregone production of clean fuels.

Attachment 1: New Source Review Examples

4. In response to increased electricity costs, and to assure electrical supply during a period of deregulation and potential shortages, a western refinery filed a permit application to install 8 temporary diesel-fired electrical generators. These diesel-fired generators would be leased and operated for a period not to exceed 2 years within the existing refinery boundary. The generators would produce additional criteria pollutant emissions. Although the quantity of emissions would be in excess of the PSD "significant" levels, the increase in emissions would be temporary, and therefore did not constitute a "major modification" as defined by the PSD regulations.	Based on historical PSD applicability determinations, EPA has stated temporary operations of less than two years were not intended to be covered by PSD regulations (April 24, 1978 memo from W.C. Barber, Office of Air Quality Planning & Standards to Adlene Harrison, Regional Administrator, Region VI). Because of this historical applicability determination and other similar determinations, the State issued a non-PSD permit to the refinery for operation of the 8 temporary generators. EPA commented during the comment period, and indicated EPA was opposed to issuing the permit as a non-PSD permit and did not agree with the State required BACT determination, although during the appeal period EPA did not appeal the permit. Because EPA commented negatively during the comment period but did not appeal the permit during the appeal period, the refinery is concerned about EPA's enforcement interpretations. This regulatory uncertainty has resulted in the refinery considering not operating the temporary generators, thus sacrificing refinery reliability.	Regulatory uncertainty may cause a reliability project to be abandoned. Fuel supply could be impacted.

Attachment 1: New Source Review Examples

5. A refiner completed the installation of a relocated FCCU. The unit essentially debottlenecked the entire refinery, resulting in increased refining capacity. The state minor NSR permit netted the refinery out of PSD for all pollutants. Because of a recently discovered lab error in developing the historical baseline for actual SO2 emissions, those emissions were under-calculated. The resulting permit imposes a 15% actual-to-potential reduction in SO2 emissions for the entire refinery. The refinery cannot increase emissions without violating or changing the state minor NSR permit. Because the FCCU is challenging other units in the refinery at levels not seen before, and because new incremental crude oil supplies are of lesser quality, the facility is having problems with generating too much fuel gas which is increasing flaring potential, and too much sulfur in fuel gas which leads to greater potential for excess emissions. To stay in compliance without making additional changes to the refinery, the facility must run in a manner (i.e. - reduced runs and/or minimizing gasoline production) that does not optimize production or consumer supplies. This situation could be fixed by installing additional cooling, rerouting some gas streams around the compressor directly to heaters, and other changes that would reduce fuel gas production and optimize fuel gas sulfur removal.	Because of the uncertainty created by the current interpretation of NSR, the state insists on analyzing every corrective change for its PSD implications. Therefore, the facility is constrained from taking immediate action to solve the situation and is running a daily risk of excess emissions, and losing production capacity.	These steps would increase fuel production and improve environmental compliance.
6. After startup following a maintenance turnaround, a refiner found that fluid catalytic cracker (FCC) capacity was limited to a rate less than the pre-maintenance rate due to plugged feed nozzles. The facility devised a method of bypassing the plugged nozzles while continuing to operate the FCC unit.	Because the method, under current interpretation of NSR, would involve a physical change, the facility was concerned that the change would be viewed by EPA as a physical or operational change subject to New Source Review, and a decision was made to accept the limited capacity. Factored into this decision was the Agency's method of calculating emissions increase based on a comparison of pre-change actual emissions to post-change potential emissions.	Foregone increase in refinery capacity and fuel supply.

Attachment 1: New Source Review Examples

7. This project would increase RFG production by approximately 10,000 - 12,000 barrels per day. This will involve changes to the Naphtha Stabilizer wherein product fractionation will be improved by reducing the vapor pressure of the light naphtha stream used in gasoline blending. The project involves the replacement of existing trays in the naphtha stabilizer with high efficiency trays to increase butane recovery from the light naphtha. In addition, a new reboiler will be required to provide the necessary heat input. The new reboiler will require an additional 20,000 pounds an hour of steam. The steam is to be produced from existing boilers. No modifications will be required to the existing boilers. The incremental steam can be produced without exceeding any current permit limits on the boilers.	The current interpretation of the applicability test (which compares actual emissions to potential emission increases) triggers Prevention of Significant Deterioration (PSD) and New Source Review (NSR) thresholds. This is a time sensitive project that requires a unit shutdown to implement the project, and as such, a PSD/NSR permit cannot likely be obtained promptly to take advantage of a planned turnaround. Permit preparation is estimated to take up to 2 months, while permit review at the Agency will take upwards of one year to complete. In addition, costly pollution controls may need to be installed on the boilers in order to meet the requirements of PSD/NSR regulations. Though the steam can be produced from the existing boilers within current operating permit limitations, recent regulatory initiatives associated with PSD and NSR create hurdles that cannot be overcome in the timeframe needed to make this project attractive from an economic standpoint.	Foregone production of clean fuels. 10,000 – 12,000 B/D of RFG supply lost or delayed.
8. A refinery could use a new, higher activity catalyst in a light ends unit to produce more lube oil blend stock.	The project was rejected because the resulting incremental sulfur dioxide emissions from the refinery would exceed the significance level for triggering PSD review.	Foregone increase in refinery capacity.
9. A propane deasphalting unit was not expanded due to PSD for sulfur dioxide	The project was rejected because of the current interpretation of NSR, requiring a comparison of pre-change actual emissions to post-change potential emissions.	Additional gasoline and diesel fuel would have resulted if the investment were made. Propane deasphalting yields FCCU and coker feed, which is converted in part to gasoline and diesel fuel.
10. A coker unit could have been expanded by increasing coke drum capacity. Additional gasoline and diesel fuel would have resulted from the expansion.	The capacity expansion project was rejected because of the current interpretation of NSR (actual to potential test). Instead, the drum was replaced in kind, because drum expansion would have been a PSD issue for sulfur dioxide.	Foregone increase in refinery capacity.
11. A refinery could have produced more diesel fuel from coker light gas oil by re-commissioning an inactive hydrotreater.	The project was dropped due to the PSD significance level for sulfur dioxide (using the actual to potential test).	Foregone increase in refinery capacity.

Attachment 1: New Source Review Examples

12. A FCC is air blower limited. If the refinery could add more air to the FCC, it could run more feedstock and make more gasoline and less diesel.	Project was not done since it could increase emissions, and would require PSD permit review (using the actual to potential emissions test).	Foregone increase in refinery capacity.
13. A facility would like to change the FCC riser design to allow better catalyst/feed mixing, which would result in more gasoline production.	According to the current interpretation of NSR, this would be a change in the "method of operation" under PSD. The project would not increase emissions at the FCC and would lower emissions from diesel loading, but would likely increase emissions from the gasoline loading dock. Analysis has not been done yet to show if increase would be significant (i.e. > 40 tons/yr.). However using EPA's reported view that actual emissions must be compared to potential emissions, the project would trigger PSD since the facility is under the permit cap limit by less than 40 tons/yr. The project if completed would not cause the facility to have any problems staying in compliance with its state permit facility cap for VOC, NOx, SOx or any other pollutant.	Foregone increase in refinery capacity and fuel supply.
14. A refinery conducted a review of expanding the alkylation capacity to increase gasoline production.	It was determined that due to NOx increases and PSD issues associated with the current interpretation of NSR that the facility would not make the investment.	Additional gasoline production was foregone. Alkylate is a key blendstock for cleaner, lower sulfur gasoline.
15. Tubes in the depropanizer reboiler furnace failed. The resulting fire destroyed the remaining tubes, and the unit was shut down causing a loss of gasoline production at the plant. New tubes were expedited, and the unit was repaired and back in service in two weeks, minimizing loss of gasoline production.	Today, using EPA's Detroit Edison 24-factor test (EPA letter to Detroit Edison), the unit could have triggered PSD review before repairs. Actual emissions from the last two years were more than 40 tons/yr. under the permitted limit; therefore, using the actual to potential test a PSD permit could have been required, taking 5-18 months to obtain, and gasoline supply would have been limited until the permit was obtained and the depropanizer reboiler furnace put back into service	If PSD review had been undertaken, gasoline production would have been curtailed.
16. New catalyst was put in the reformer during a turnaround. The new catalyst lasts longer, requires less frequent changes, and hence gasoline production is increased.	Today, under the Detroit Edison 24-factor test the catalyst change-out could trigger a PSD review, and due to actuals versus potentials, a PSD permit could be required to change the catalyst	If PSD review had been undertaken, gasoline production would have been curtailed.

Attachment 1: New Source Review Examples

17. In 1981 a company which operates a refinery and lube oil plant received a permit from the state DNR. The permit covered the construction of a delayed coker and a hydrocracker, and energy conservation and improvement projects. After the construction was complete there would be a net decrease in emissions of SO2, NOx, TSP, CO and HC from the refinery and lube plant taken as a whole. The permit established the emissions from the lube plant and refinery, after construction, as an overall emission limitation. As long as the air emissions did not exceed the overall limitation, the company had the flexibility to operate the plant as needed to meet market demand for product. Through this permit, the company was committed to not increasing its overall emissions beyond the level of 1977.	This year EPA issued a NOV for the modifications at the facility. It ignored the 1981 permit and claimed the modifications violated the new source, PSD requirements. Federal courts have held that the Clean Air Act does not authorize collateral attack by EPA on state-issued permits. United States v. AM General Corp., 34 F. 3d 472 (7th Cir. 1994); United States v. Solar Turbines, 732 F. Supp. 535 (M.D. Pa. 1989).	Enforcement action by EPA on an existing permit. This permit meets the goal of PSD – it prevents deterioration of air quality. EPA has included a similar provision in its recent consent decree with Marathon Ashland.
18. A mid-sized refinery (~ 50,000 BPD) was closed in late 1999. As background, this facility was included in the purchase of a refining and marketing company in 1997. At the time of the purchase, this facility was under enforcement by EPA and the Department of Justice for past operational NSR issues.	As part of the enforcement action, the allegations included potential historic triggers of NSR using EPA's current NSR interpretations. Improvements in the facility's operation were immediately instigated for compliance and business viability. To settle the enforcement with respect to NSR issues, the company considered and discussed with EPA and the Department of Justice injunctive relief that would have involved significant capital (greater than $30 million) to install BACT and other pollution control equipment within the facility. After its acquisition and during the negotiations with EPA and the Department of Justice, this refinery had marginal economics due to market conditions, and investment return requirements dictated that minimal new capital be spent on the facility. With the already marginal economics for the facility, the addition of **non-return** capital projects to satisfy NSR decreased the economic viability of the facility.	Loss of 50,000 BPD of refining capacity because of EPA's reinterpretation of NSR.

Attachment 1: New Source Review Examples

19. Burners were recently changed out in the crude unit furnace. This was economically justified based upon a new type of low NOx, high efficiency burner utilizing less fuel to maintain the same heat load.	Under some versions of EPA's interpretations, since the burners were not exactly the same as the ones taken out, the project could have been subject to PSD review. Using this viewpoint, a PSD permit could be required to lower emissions and save energy.	If PSD review had been undertaken, gasoline production would have been curtailed. If the project had not been done, an energy efficiency gain and NOx reduction would not have been realized.
20. While preparing to permit a process unit expansion, the refinery staff fully evaluated the project emissions and prepared a draft permit application with a NSR/PSD analysis. However, after presenting the draft application for a pre-submission review, the state agency introduced a new approach for determining project-related emissions, based on recent EPA guidance on how to evaluate "debottlenecking" projects.	As a result, the staff had to completely re-start the entire permitting process and evaluate potential downstream emission increases. The new "debottlenecking" interpretation added three months to the permitting process. In addition, the refinery had to accept more restrictive emission limits for downstream units, even though they were not physically modified.	Refinery capacity increase delayed.
21. Refinery staff wanted to increase the operating pressure within a process unit by replacing pressure relief valves. This action was not expected to increase emissions above the levels authorized in the current PSD permit nor increase process unit throughput above the maximum represented in the application. No shutdown was necessary, and the job was expected to only take 3-4 days. However, given the uncertainty around whether this would be a regulated physical change, the refiner decided to request a determination through the state agency.	Ultimately, the refiner never actually received a PSD determination, but ended up looking back at the last permit amendment and determined that the pressure relief valve replacements could be authorized as part of the previous PSD expansion.	Project delayed by 4 months.

Attachment 1: New Source Review Examples

22. In 1998, a refiner began working on a 200,000 gallon per day expansion of its FCCU. Most of this expansion would result in the production of gasoline blending components. An advanced technology-scrubbing device had been installed on the FCCU in 1994. The permit limits established in 1994 were based on vendor guarantees since the technology was new to the United States. Subsequent testing indicated that the control device performed adequately. The unit, as of the 1994 installation, was equipped with continuous emission monitors to measure NOx, SOx and CO. The permit analysis for the expansion indicated that the increase in emissions based on the past actual to future potential calculation method would be significant even though the actual increase in emissions based on past actual to future actual were less than significant. Proposed reductions in permitted values did not bring the PSD calculated emission increases to be less than significant. A PSD draft permit was submitted to the state permitting agency in early 1999. Through discussions with the state permitting agency, the netting analysis was modified and updated. A modeling protocol was submitted and based on preliminary analysis, other changes were proposed in the refinery including reducing NOx emissions from other sources and changing stack locations and heights. As the permit review lengthened, the analysis was changed to reflect changes in the contemporaneous period. The state permitting agency requested additional information on the BACT analysis.	The application was withdrawn in July 2001, because of concerns about aggregation with upcoming clean fuels projects, and that even with approval, the modifications could no longer be accomplished during the 2001 FCCU turnaround. Since turnarounds on the FCCU occur only once every four years, this project is now rescheduled to be coordinated with the clean fuels project down time. The PSD and non-attainment NSR analysis will reflect that this FCCU expansion is part of the clean fuels project.	The difficulties in determining debottlenecking and aggregation issues have resulted in the long delay of a project that could have put more gasoline into the marketplace during the summers of 2001, 2002 and 2003. Since the actual emission increases would have been negligible, there was no benefit to the environment associated with delaying this project.

Attachment 1: New Source Review Examples

23. A refinery applied for a permit to install some equipment that would improve the quality and volume of its gasoline supply. Though there was a small increase in overall facility emissions associated with this project, there was a decrease in air emissions per barrel of product. The project required only a minor NSR permit; however, it ended up taking 11 months from permit submission to receipt of the permit.	As a result of the permitting delays, the project, though it could be constructed, could not be tied in to the rest of the process unit during the available turnaround window. The equipment sat un-utilized for approximately 7 months, until the next window of opportunity opened for tie-in of the equipment into the rest of the process.	Gasoline supply foregone.
24. A refiner has found that the time required to complete the NSR permit process has been increasing. In order to anticipate future growth the refiner wrote a 1998 PSD permit application to cover projects that spanned a three-year period. Although the PSD permit has expired, the local air agency is still trying to rewrite the permit to look like what was actually constructed at the refinery. Meanwhile the facility's Title V operating permit application, the most recent revision of which was submitted August 2000, sits waiting on the agency shelf. Currently the facility has four permits under review. Given this situation, by the time the refinery obtains its permits to start construction of units to supply low sulfur fuels the facility will be unable to complete the construction in time to meet the EPA mandate. Some of the problem is due to an under-staffed local agency, and some is due to the reinterpretation of the regulations by EPA, which creates an atmosphere of uncertainty at the local agency.	Reinterpretation of the NSR regulations has caused a slowdown in processing permit applications. Thus the NSR permitting system is not designed for the fast pace of change required by current regulations and growth in the refining industry.	Supply of clean fuels delayed.

Attachment 1: New Source Review Examples

25.
In this example, equipment upgrades can cause actual emissions to increase slightly; however, these actual increases are below NSR permitting thresholds. Unfortunately, the New Source Review reinterpretation compares pre-upgrade actual emissions to post-upgrade potential emissions. The fabricated "phantom emissions" increase may be large enough to trip the NSR permitting threshold. NSR permitting requirements delay the approval process and increase project costs, including achieving emissions offsets elsewhere, to a point where the equipment upgrade may be abandoned altogether. **Result: Capacity increase foregone.**

EXAMPLE: An air blower on a gasoline production unit is approaching the end of its useful life. For maintenance of capacity and reliability reasons, the blower will be replaced. Two options are available: 1) Replace the blower in kind with no capacity increase; or 2) Replace the blower with a slightly larger blower (+5% capacity) since the blower is the piece of equipment that is limiting the gasoline production unit capacity.

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Increase: **Refiner would calculate the emissions increase from the 5% capacity increase by comparing actual emissions before the blower replacement to the calculated actual emissions after the replacement.**	• Emissions Increase: Refiner must calculate the emissions increase from the 5% capacity increase by comparing actual emissions before the blower replacement to **the currently permitted (potential) emissions which are typically higher than actual emissions.** This significantly increases the calculated emissions increase and significantly misstates the actual emissions increase from the blower replacement, i.e., creates a fabricated "phantom emissions" increase.
• Permitting Requirement. Emissions increase is below the threshold that requires NSR permitting. Refiner obtains a non-NSR permit from the state permitting agency, requiring 1-3 months to obtain the permit.	• Permitting Requirement. **The "phantom" emissions increase is large enough to trip the NSR permitting threshold.** Refiner must obtain a NSR permit requiring 6-18 months and to do so must generate emissions offsets elsewhere in the refinery.
• Project Timing/Cost. Straightforward. Project is economic and can be done in a timely fashion.	• Project Timing/Cost. Project cost is now significantly increased since emissions offsets must be generated to offset the "phantom" emissions increase. Also, project installation would be significantly delayed since NSR permitting takes much longer.
• Likely Investment Decision: Proceed with the higher capacity blower to expand the capacity of the catalytic cracking unit since it is an attractive investment and generates only a small real emissions increase.	• Likely Investment Decision: Replace the blower without the capacity increase. **The additional costs of the emissions offsets to the "phantom" emissions increase may render the project uneconomic.** In the unlikely event that the investment would continue to be economic, its installation would be significantly delayed due to NSR permitting requirements.

Attachment 1: New Source Review Examples

26.
In this example, a routine equipment replacement may improve gasoline production by 1,000 barrels per day with only minor increased actual emissions. Unfortunately, the NSR reinterpretation redefines the definition of "routine" so narrowly it excludes virtually every act of maintenance or replacement as "routine". Under the NSR reinterpretation, a decision may be made to replace worn out equipment with less technically capable parts in order not to trigger delays and expenses associated with the NSR permitting process. **Result: Gasoline production increase foregone.**

- **EXAMPLE: A gasoline production unit is down for maintenance just prior to the summer motor gasoline season. Old feed nozzles can be replaced with new generation nozzles that allow the refinery to produce gasoline more efficiently and increase production by 1000 bbls/day to meet summer demands, without increasing oil inputs to the unit.**

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Increase: **Refiner would consider periodic repair or replacement of old nozzles with new generation nozzles within the scope of the NSR RMRR exclusion.** Nozzles are normally replaced every 5-10 years as they wear out. Yield is improved, without any increase in unit capacity and only a minor emissions increase from the nozzle replacement. **Unit continues to operate 5% below its permitted emission limit.**	• Emissions Increase: **EPA has narrowed its interpretation of the routine maintenance, repair and replacement exemption. EPA would say the Refiner is subject to NSR, since the replacement is infrequent, high cost and increases yield.** EPA would require the Refiner to compare past actual emissions before the nozzle replacement to the currently permitted (potential) emissions, which are 5% higher than actual emissions. This significantly increases the calculated emissions and significantly misstates the actual emissions increase from the nozzle replacement, i.e., creates a fabricated "phantom" emissions increase.
• Permitting Requirement. Replacements not subject to NSR review. Meets standard for RMRR due to "nature, extent, purpose, frequency and cost of the work, within a particular industrial sector. If required, refiner obtains any non-NSR permits from the state permitting agency, requiring 1-3 months.	• Permitting Requirement. **The "phantom" emissions increase is large enough to trip the NSR PSD permitting threshold.** The refiner will need to either generate emission offsets, or obtain a NSR permit and install additional emission controls.
• Project Timing/Cost. Straightforward. Project is economic and can be done in a timely fashion.	• Project Timing/Cost Project cost is now significantly increased to address NSR requirements and offset the "fabricated" emissions increase. Also, project installation would be significantly delayed 6-18 months since NSR permitting takes much longer.
• Likely Investment Decision: Proceed with the nozzle replacement to increase motor gasoline yield. It is an attractive investment and generates only a small real emissions increase.	• Likely Investment Decision: Refiner must proceed with some nozzle replacement or shutdown. Costs of doing traditional RMRR has increased substantially and will be delayed by the NSR process. Refiner may well decide to replace nozzle with old generation type, forgoing the gasoline production increase.

Attachment 1: New Source Review Examples

27.
In this example, three unrelated projects under consideration may each increase emissions less than NSR permitting thresholds. Unfortunately, the current New Source Review reinterpretation assumes projects undertaken within a "short time" to be associated and requires they be aggregated for NSR purposes. Previously, separate projects were not to be aggregated *unless* the decision to separate projects into smaller projects was made to circumvent NSR requirements. In this example, the capacity project may be abandoned, regardless of whether or not the other two projects are ever undertaken, simply because NSR permitting would increase costs to such a point that it became uneconomic. **Result: Gasoline production and energy efficiency improvements foregone.**

- **EXAMPLE: A refiner identifies 3 separate and unrelated potential coker unit projects; some of which directly increase motor gasoline production. A capacity project (larger feed pump and valve) can be installed immediately to increase production 500 bbl/day. An energy efficiency project (new furnace convection section) can be installed in 2-3 years to save 50MBTU/Hr which can also increase production by about 500 bbl/day. A safety project (to install an automatic coker drum opening system) can be completed during the next 4 years which could also increase capacity by 500 bbl/day.**

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Increase: The projects are totally independent, that is, each may or may not be approved depending upon its own merits over the next 1-4 years. None of 500bbl/day steps, if implemented, are significant for NSR.	• Emissions Increase: **EPA now takes the position that projects a facility "Could Have Reasonably Known About" must be aggregated for emission calculation purposes and permitting.** With this reinterpretation, emissions from three potential /separate projects, must be aggregated for NSR, making the first project subject to NSR permitting even though the later projects may never be constructed.
• Permitting Requirement. The Refiner treats the projects as individual projects. **Emissions increases from each project are not enough to require NSR permitting. If required, refiner obtains any non-NSR permits from the state permitting agency, requiring 1-3 months, when and if a decision is made to proceed with each project.**	• Permitting Requirement. The "aggregated" emissions increase is large enough to trip the NSR permitting threshold. Refiner will need to either generate emission offsets or obtain a NSR permit and install additional emission controls.
• Project Timing/Cost. Straightforward. If projects are economic, they will be done in a timely fashion.	• Project Timing/Cost: Project cost is now significantly increased to address NSR requirements and offset the "aggregated" emissions increase. Also, project installation would be significantly delayed 6-18 months since NSR permitting takes much longer.
• Likely Investment Decision: Proceed with the separate coker projects if economics continue to be attractive	• Likely Investment Decision: Additional costs of the emissions offsets and permitting would likely render some or all the projects uneconomic. In particular, it will be much more difficult to justify the first of the projects since it incurs additional costs for projects that may not be installed in the future.

Attachment 1: New Source Review Examples

28.
In this example, a routine equipment replacement may significantly decrease emissions. Unfortunately, the NSR reinterpretation redefines the definition of "routine" so narrowly it excludes virtually every act of maintenance or replacement as "routine". Under the NSR reinterpretation, a decision may be made to replace worn out equipment with less technically capable parts in order not to trigger delays and expenses associated with the NSR permitting process. **Result: Air quality improvement delayed or foregone.**

- **Example: The cyclones on a gasoline production unit are approaching the end of their useful life. These cyclones capture and return catalyst to the unit, helping to reduce particulate emissions. For maintenance of capacity and reliability, the cyclones will be replaced with a new design, with 25% higher particulate matter (PM) removal efficiency. The unit is operating at ~95% of its emission permit limit (typical scenario).**

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Increase: Refiner considers the cyclone replacement to be RMRR. **Cyclones are typically replaced every 10 years, typical cost $5-10M. Replacement results in a decrease in actual particulate emissions due to more efficient cyclones.**	• Emissions Increase: **EPA has narrowed its interpretation of the routine maintenance, repair and replacement exemption. EPA would say the Refiner is subject to NSR, since the cyclone replacement is infrequent and high cost.** EPA would require the Refiner to compare past actual emissions before the replacement to the currently permitted (potential) emissions. This significantly increases the calculated emissions and significantly misstates the actual emissions increase from the cyclone replacement, i.e., **creates a "phantom" emissions increase when an actual emission reduction will be realized.**
• Permitting Requirement. Straightforward. NSR thresholds are not triggered. If required, Refiner obtains a non-NSR permit from the State permitting agency, requiring 1-3 months.	• Permitting Requirement. The "phantom" emissions increase is large enough to trip the NSR permitting threshold. Refiner will need to either generate emission offsets, or obtain a NSR permit and install additional controls.
• Project Timing/Cost. Straightforward. Project is justified and can be done in a timely fashion.	• Project Timing/Cost. Project cost is now significantly increased to address NSR requirements and offset the "fabricated" emissions increase. Also, project installation would be significantly delayed 6-18 months due to NSR permitting requirements.
• Likely Investment Decision: Proceed with the cyclone replacement as normal routine maintenance, repair and replacement.	• Likely Investment Decision: Refiner must proceed with the cyclone replacement or shutdown. However, costs of doing traditional RMRR has increased substantially and been **significantly delayed by the NSR process.**

Attachment 1: New Source Review Examples

29.
In this example, equipment upgrades do not cause any actual emissions increase. Unfortunately, the New Source Review reinterpretation compares pre-upgrade actual emissions to post-upgrade potential emissions. The "fabricated emissions" increase may be large enough to trip the NSR permitting threshold. NSR permitting requirements delay the approval process and increase project costs, including achieving emissions offsets elsewhere, to a point where the equipment upgrade may be abandoned altogether. **Result: Gasoline production increase and air quality improvement delayed or foregone.**

- **EXAMPLE: A refinery has a crude processing unit operating below its NOx permitted level of 400 tons per year (tpy). The Refiner has the option to implement an energy efficiency project that results in a come-along capacity increase while not increasing emissions (emission reductions from the efficiency projects offset the come-along emissions from the capacity increase). The EPA current position to require Refiners to compare past actual to future potential (permitted) emissions creates large "fabricated" emission increases, that must be accounted for, if a physical change is made.**

	Past Actual	Future Actual	Permit	Actual Increase (Past Actual vs. Future Actual	Fabricated Increase (Past Actual vs. Potential)
Crude Unit (NOx tpy emissions)	280	280	400	+ 0	+120

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Increase: Refiner would calculate the change in past actual emissions to future actual emissions for the minor energy efficiency project and come-along capacity increase. The net actual emission increase is zero. The efficiency project increases production with no increase in emissions.	• Emissions Increase: EPA current position is that a Refiner must calculate the emissions increase from the efficiency projects by comparing past actual emissions to the currently permitted (potential) emissions, which are higher than actual emissions. Practical impact is that any modification, including emission reduction projects, can result in a "fabricated" emissions increase.
• Permitting Requirement: No increase in emissions. NSR thresholds are not triggered. If required, refiner obtains any non-NSR permits from the state permitting agency, requiring 1-3 months.	• Permitting Requirement: The "fabricated" emissions increase is large enough to trip the NSR permitting threshold. Refiner must either generate emission offsets, or obtain NSR permit and install additional emission controls.
• Project Timing/Cost: Straightforward. Project is economic and can be done in a timely fashion.	• Project Timing/Cost: Project cost is now significantly increased to address NSR requirements and to offset the "fabricated" emission increase. Also, project installation would be significantly delayed 6-18 months since NSR permitting takes much longer.
• Likely Investment Decision: Proceed with the energy efficiency project.	• Likely Investment Decision: The additional costs of the emission offsets to the "fabricated" emissions and permitting would likely render the efficiency project uneconomic. Refiner may well decide to forego the gasoline production increase.

Attachment 1: New Source Review Examples

30.
In this example, equipment upgrades cause decreased future actual emissions and do not expand capacity. Unfortunately, the New Source Review reinterpretation compares pre-upgrade actual emissions to post-upgrade potential emissions (even though capacity remains unchanged). The "fabricated emissions" increase may be large enough to trip the NSR permitting threshold. NSR permitting requirements delay the approval process and increase project costs, including achieving emissions offsets elsewhere, to a point where the equipment upgrade may be abandoned altogether. **Result: Energy efficiency and air quality improvement foregone.**

- **EXAMPLE: This project adds tubes to a furnace on a crude processing unit for a 5% improvement in fuel efficiency. The furnace is running at 80% of its permit emission rate (typical scenario). Current actual NOx emissions are 35tpy compared to a permit level of 45tpy. Future actual emissions would decrease to 32tpy. No unit capacity increase will be realized since the unit is not limited by the furnace capacity. (Refinery is located in a severe ozone non-attainment area).**

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Decrease: Refiner must calculate the emissions increase by comparing past actual emissions to future actual emissions, after the new tubes are installed. Past actual to future actual: 35 --> 32 tpy = 3 tpy emissions decrease due to improved furnace efficiency and lower fuel gas firing rate.	• Emissions Increase: Refiner must calculate the emissions increase from the efficiency project by comparing past actual emissions to the currently permitted (potential) emissions, which are higher than actual emissions. This significantly increases the calculated emissions and subsequently misstates the actual emissions from the fuel efficiency project, i.e. creates a "fabricated" emission increase when an actual emission reduction will be realized. Past Actual to Future Potential: 35 --> 45 tpy = 10tpy "fabricated" emissions increase.
• Permitting Requirement: No emission increase so the project would not require NSR permitting. No permitting, no offsets.	• Permitting Requirement: The "fabricated" emissions increase is large enough to trip the non-attainment NSR permitting threshold (5 tpy per State SIP for severe ozone attainment areas). Refiner must obtain a non-attainment NSR permit and to do so must install controls to offset "fabricated" NOx increase at 1.3 to 1 ratio. (10 x 1.3 = 13 tpy of offsets for 3 tpy actual emission decrease)
• Project Timing/Cost: Straightforward. Project is economic and can be done in a timely fashion. • Likely Investment Decision: Proceed with project	• Likely Investment Decision: Forego a project which would increase efficiency and reduce emissions.

Attachment 1: New Source Review Examples

31.
In this example, equipment replacement may cause actual emissions to increase slightly; however, these actual increases would be below NSR permitting thresholds. Unfortunately, the New Source Review reinterpretation compares pre-upgrade actual emissions to post-upgrade potential emissions. The fabricated "phantom emissions" increase may be large enough to trip the NSR permitting threshold. NSR permitting requirements delay the approval process and increase project costs, including achieving emissions offsets elsewhere, to a point where the equipment upgrade may be abandoned altogether. **Result: Gasoline production increase delayed or foregone.**

- **EXAMPLE: This project will replace the feed valve to the motor gasoline unit (catalytic cracker), allowing a 2% (4 KBD) increase in gasoline production. No changes are required to the furnaces, which are running at 80% of their permitted limit. Current NOx emissions are 400tpy. Permitted NOx emissions are 500tpy. (Refinery is located in an attainment area for NOx)**

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Increase: Refiner would calculate the emissions increase by comparing past actual emissions before the feed valve change to future actual emissions, after the feed valve change. **Past actual to future actual: 400 -->410tpy = 10 tpy emissions increase for increased furnace firing rate** **Permitted emissions: 500 tpy**	• Emissions Increase: **Refiner must calculate emission increase from the 2% capacity increase by comparing past actual emissions to the currently permitted (potential) emissions, which are higher than actual emissions.** This significantly increases the calculated emission increase, and substantially misstates the actual emission increase from the valve replacement, on a unit capable of higher production rates, i.e., creates a "fabricated" emission increase. • Past Actual to Future Potential: 400tpy --> 500tpy = 100tpy "fabricated" emissions increase.
• Permitting Requirement: Emission increase below the NSR emission threshold would not require NSR permitting. No permitting, no offsets.	• Permitting Requirement: The "fabricated" emissions increase is large enough to trip the NSR permitting threshold. Refiner must either generate emission offsets, or obtain a NSR permit and install additional emission controls.
• Project Timing/Cost: Straightforward. Project is economic and can be done in a timely fashion.	• Project Timing/Cost: Project cost is now significantly increased to offset the "fabricated" emission increase. Also, project installation would be significantly delayed 6-18 months since NSR permitting takes much longer.
• Likely Investment Decision: Proceed with project	• Likely Investment Decision: The additional costs of the emission offsets to the "fabricated" emission increases and permitting would likely render the project uneconomic, so the opportunity to quickly increase gasoline production would be passed up.

Attachment 1: New Source Review Examples

32.
In this example, equipment replacement may cause actual emissions to increase slightly; however, these actual increases would be below NSR permitting thresholds. Unfortunately, the New Source Review reinterpretation compares pre-upgrade actual emissions to post-upgrade potential emissions. The "fabricated emissions" increase may be large enough to trip the NSR permitting threshold. NSR permitting requirements delay the approval process and increase project costs, including achieving emissions offsets elsewhere, to a point where the equipment upgrade may be abandoned altogether. **Result: Gasoline production increase foregone.**

- **Example: The furnace tubes at a crude processing unit are approaching the end of their useful life (20-25 years typical). For maintenance of capacity and reliability reasons the tubes will be replaced – two options are available: 1) replace the tubes in-kind with no capacity increase, 2) replace with different tubes (+2% capacity), since the furnace is the piece of equipment that is limiting the crude unit capacity.**

Prior to NSR Reinterpretation	Current - With NSR Reinterpretations
• Emissions Increase: Refiner would calculate the emissions increase from the 2% capacity increase by comparing actual emissions before the tubes replacement to the calculated actual emissions after the replacement.	• Emissions Increase: **Refiner must calculate the emissions increase from the 2% capacity increase by comparing actual emissions before the furnace tube replacement to the currently permitted (potential) emissions which are typically higher than actual emissions.** This significantly increases the calculated emissions increase and significantly misstates the actual emissions increase from the tube replacement, i.e., creates a "phantom" emissions increase.
• Permitting Requirement. Emissions increase is below the threshold that requires NSR permitting. The refiner obtains any non-NSR permits from the state permitting agency, requiring 1-3 months.	• Permitting Requirement. The "phantom" emissions increase is large enough to trip the NSR permitting threshold. Refiner will need to either generate emission offsets, or obtain a NSR permit and install additional emission controls.
• Project Timing/Cost. Straightforward. Project is economic and can be done in a timely fashion.	• Project Timing/Cost. Project cost is now significantly increased since emissions offsets must be generated to offset the "phantom" emissions increase. Also, project installation would be significantly delayed 6-18 months since NSR permitting takes much longer.
• Likely Investment Decision: Proceed with the higher capacity tubes to expand the capacity of the crude unit since it is an attractive investment and generates only a small real emissions increase.	• Likely Investment Decision: Replace the tubes without the capacity increase. **The additional costs of the emissions offsets to the "phantom" emissions increase and permitting would likely render the project uneconomic.** In the unlikely event that the investment would continue to be economic, its installation would be significantly delayed due to NSR permitting requirements.

Attachment 1: New Source Review Examples

Glossary of terms:

FCCU	Fluid Catalytic Cracking Unit -- This is the major gasoline-producing unit in a modern petroleum refinery.
PSD	Prevention of Significant Deterioration (of air quality) -- Required for expansion in a NAAQS attainment area.
NAAQS	National Ambient Air Quality Standards
BACT	Best Available Control Technology -- Control technology required in NAAQS attainment areas for new construction or "modification." BACT is determined on a case-by-case basis considering economic, environmental and energy factors.
LAER	Lowest Achievable Emission Rate -- Control technology required in NAAQS nonattainment areas. LAER is the most stringent emissions rate limitation required in any State Implementation Plan (SIP) or otherwise achievable in practice.
VOC	Volatile Organic Compounds -- Hydrocarbon emissions which are precursors for ozone formation.
NOx	Oxides of Nitrogen -- Formed in the combustion process.
SOx	Oxides of Sulfur -- Principally sulfur dioxide (SO2)
Alkylate	A low sulfur, high octane gasoline component produced by combining olefins (propylene & butylene) with isobutane in an Alkylation Unit. The olefins are a product of the FCCU.
TSP	Total Suspended Particulates
HC	Hydrocarbon
CO	Carbon Monoxide
DNR	Department of Natural Resources
NSPS	New Source Performance Standards

Attachment 2: New Source Review Potential Impact Examples

	Potential Impact Examples	
EXAMPLE	**RESULTS OF CURRENT INTERPRETATION**	**IMPACT ON CLEAN FUELS, CAPACITY, AND ENERGY EFFICIENCY**
1. At a meeting in March 2001sponsored by the Air and Waste Management Association, several representatives of EPA gave opinions about the need to obtain NSR permits for hypothetical case studies. One example involved replacing a pump that is no longer serviceable. The model replaced is no longer available, so the new pump, while having the same capacity, is made of new materials that will last longer and require less maintenance. The Agency representatives determined that this would be a non-routine activity, and since the unit may have longer run times (because of the new materials), a new source review pre-construction permit would be required. Another example involved the use of "warehouse spare" pumps or compressors. In this case the spare pump or compressor is kept in a warehouse. When the primary pump or compressor is taken out of service for extended maintenance, the warehouse spare is installed. The Agency representatives suggested that the activity would not be routine, and therefore a permit would be required. A third example involved replacing heat exchanger bundles every few years because of plugging. Again, the Agency representatives suggested that the activity would not be routine, and therefore would require a permit.	All of these activities are fairly common occurrences in petroleum refineries and chemical plants. If NSR permits are required for these types of activities (which enable a facility to stay in operation or increase reliability of the refinery), then refineries will be forced to shut down awaiting permits. The problem is that, if an activity is determined to be non-routine, then the facility must determine if there is an increase in emissions. With all of the previous examples there will be no increase in "actual emissions." However, the current interpretation of the rules would require the facility operator to compare pre-change "actual emissions" with post-change "potential emissions" which, in many cases will lead to the conclusion that a pre-construction permit is required.	These examples illustrate a reduction in reliability and a potential for disruption of refinery production.
2. During scheduled maintenance the tubes on the crude unit furnace were inspected and were required to be replaced.	According to recent interpretation by EPA, this routine maintenance and repair would require a PSD permit application. Since PSD permit applications take on average 5-18 months, the refinery, or at least a significant portion of it, would be shutdown for 5-18 months.	Gasoline production would be reduced until the permit is obtained and the furnace is operating.

Attachment 2: New Source Review Potential Impact Examples

3. During construction of a new wet gas scrubber for the FCC, incorrect materials were utilized for the piping. The piping then corroded away and needed to be replaced with improved metallurgy. To meet the replacement in kind requirement (under current reinterpretation of NSR rules) only the original type of piping (subject to significant corrosion) would be allowed as replacement for the failed piping. To replace the piping with improved metallurgy would require a PSD review and PSD permit.	A PSD permit would be required because actual emissions when compared to potential emissions on a FCC are presumed to be greater than 40 tons/yr NOx. The FCC would have to be shut down until the PSD permit was obtained.	Gasoline production would be severely curtailed until the FCC is back in operation.

Attachment 2: New Source Review Potential Impact Examples

4. The Clean Air Act and EPA rules require the use of emissions "offsets" in nonattainment areas. To allow project developers to create and assemble sufficient offsets in advance of projects, many state and local agencies adopt emissions banking and trading systems. All major greenfield energy projects, and many energy projects at existing facilities, purchase "emission reduction credits" (ERC's) certified by state and local agencies as part of their pre-application permit preparation. ERC rules commonly discount ERC's by limiting the amount certified to actual emissions levels (rather than higher levels they previously permitted), imposing distance discount factors and imposing 5-20% "discount ratios." In addition, an unpublished August 26, 1994 memo from John Seitz to David Howekamp (EPA Region 9) entitled, "Response to Request for Guidance on Use of Pre-1990 ERCs and Adjusting for RACT at Time of Use" has recently been used as the basis for further discounting ERCs. In EPA's administrative order in the Borden Chemical case (Petition No. 6-01-1), EPA stated that "[a]s to banked ERCs, this means that the use of ERCs which were surplus some years ago when they were banked, cannot be used as valid offsets if they are no longer surplus at the time of use because of other regulations enacted after the ERCs were banked."	This EPA guidance results in a significant lack of flexibility for industry, since ERCs purchased but not used quickly may no longer be valid or may be discounted when used. This may also result in inequitable treatment within a single area and between areas. If two facilities purchase ERCs at the same time and one facility uses them within a year, but the other keeps them for three years, during which time the rule by which the ERCs were created changes (unrelated to the operations of the second facility), the second facility is put at a competitive disadvantage by the invalidation or discounting of the credits. And where the state or local district has taken no SIP credit for banked reductions, there is no reason to further discount credits at time of use. EPA is on the one hand encouraging flexible approaches and economic incentives and on the other insisting on guidance which is extremely counterproductive to those approaches.	Refining capacity may be foregone.

Attachment 3

NPRA Paper
Market Based Alternative
to Existing New Source Review
July 23, 2001

Principles

- Maintain a continued commitment to protect and enhance air quality.
- Provide a voluntary alternative compliance program to existing New Source Review; make this option available in a timely fashion to give refiners (1) the flexibility necessary to achieve environmental goals in a cost effective manner and (2) the regulatory certainty needed to produce adequate energy supplies to meet consumer demands.
- Reduce emissions through a more cost-effective, market-based approach than is possible with traditional command and control regulation.
- Focus on actual emissions instead of potential emissions as well as impacts on the environment in both attainment and non-attainment areas
- Design the cap to avoid penalizing facilities that have already reduced emissions.
- Provide a mechanism to demonstrate to the public and regulatory agencies that the facility is meeting regulatory standards.
- Base this approach on key elements of the Texas Flexible Permit, Texas Discrete Credit Banking and Trading Programs and the New Jersey Open Market Emissions Trading Program.

Elements

- Facility-wide cap covering all new and existing emission units within the source.
- New Source Review permitting process is not triggered as long as the facility remains within its cap; allows the facility to make physical and operational changes if actual emissions do not exceed the cap and to over-control one or more unit(s) to offset emissions at one or more other unit(s).
- Pollutant specific, covering criteria pollutants measured as total actual emissions in tons per year.
- Performance-based compliance; technology is a guide but not mandated.

Attachment 3

- Benchmark is a function of measures required to improve regional air quality.

    1. For non-attainment areas:
        a. For each pollutant, the emissions benchmark is based upon a performance standard reflecting improvements in air quality and borrowed from existing technology standards.
        b. The initial cap or budget for a pollutant assumes the application of the appropriate performance standard(s) to each emission unit at all subject facilities. (Note: emission sources may be above, at, or below the performance standard depending on whether the unit is currently grandfathered or not.)
        c. The state or regional pollutant cap or budget is the total of allowed emissions in tons per year for that pollutant at all subject facilities.
    2. For attainment areas, the state or regional pollutant cap or budget is based on improving air quality by maintaining or reducing the existing state or regional emission inventory and, where appropriate, on impacts to Class I areas.
    3. In either case, the state may allocate to each facility its allowable portion of the statewide or regional emission budget or cap. This allocated amount is considered the individual facility's budget or cap for that pollutant.
    4. The state may in time choose to adjust the existing statewide or regional emission budget (cap) for a pollutant. Once the overall cap has been adjusted, the emission budget is then reallocated among the subject facilities to establish each facility's new budget or cap for that pollutant.

- The statewide or regional emission budget may be adjusted periodically due to ambient air quality considerations or for regulations affecting energy supply.

- Compliance is based on each facility's remaining within its allocated emission budget on an overall, rather than individual source, basis. Monitoring of actual emissions for compliance purposes would likely be through the use of CEMs or parametric monitoring.

- Emission trading is allowed between sources within a facility and between facilities. Trading is allowed across sectors as long as each sector participates in a market-based cap and trade program.

- With a cap and trade program, any exceeded facility caps may be corrected through the purchase of unused credits or by adding controls.

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NEWS

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FOR IMMEDIATE RELEASE

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NPRA Comments on EPA's NSR Reform Package

Washington, DC, June 13, 2002--The National Petrochemical & Refiners Association (NPRA) commends the Administration's decision to move forward with reform of the New Source Review (NSR) program. We are still reviewing the specifics of the proposal, but at first glance they appear to address the major flaws of the current program, which have led to widespread confusion, impeded environmental progress, and hindered even basic maintenance operations.

Under a reformed NSR program, our members, who manufacture almost all of the petroleum and petrochemical products from domestic refineries and petrochemical plants, will be better able to maintain and update their plants, produce cleaner products, keep pace with technology, and increase our energy efficiency. NSR reform means a more secure supply of critical fuel and petrochemical products manufactured in America for American consumers. NSR reform thus means increased national security.

We agree with the statement in the NSR package summary that states, "These changes would assure that the NSR program operates in a manner that provides greater regulatory certainty and flexibility for business investment decisions, while at the same time protecting the environment."

Bob Slaughter, NPRA President, commented on the reform package, "NSR reform is the single most effective step in maintaining a healthy and robust domestic refining and petrochemical industry. We look forward to continuing NPRA's participation in this issue during the remainder of the reform process."

NPRA represents almost 500 companies, including virtually all US refiners and petrochemical manufacturers. Our members supply consumers with a wide variety of products and services that are used daily in homes and businesses. These products include gasoline, diesel fuel, home heating oil, jet fuel, lubricants and the chemicals that serve as "building blocks" in making everything from plastics to clothing to medicine to computers, etc.

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Federal Regulations Requiring Emission Controls at Refineries

40 CFR 52 Approval and Promulgation of State Implementation Plans for NAAQS

- 52.21 Prevention of Significant Deterioration (PSD) for Attainment Areas
- 52.24 New Source Review for Nonattainment Areas

40 CFR 60 New Source Performance Standards (NSPS)

- NSPS-A General Provisions
- NSPS-Cd Sulfuric Acid Production Units
- NSPS-D, Da, Db, Dc Boilers
- NSPS-G Nitric Acid Plants
- NSPS-H Standards of Performance for Sulfuric Acid Plants
- NSPS-I Standards of Performance for Hot Mix Asphalt Facilities
- NSPS-J Petroleum Refineries
- NSPS-K, Ka, Kb Storage Vessels of Petroleum or Volatile Organic Liquids
- NSPS-GG Stationary Gas Turbines
- NSPS-UU Asphalt Processing
- NSPS-VV Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry (SOCMI)
- NSPS-XX Bulk Gasoline Terminals
- NSPS-DDD Volatile Organic Compound (VOC) Emissions from Polymer Manufacturing Industry
- NSPS-GGG Equipment Leaks of VOC in Petroleum Refineries
- NSPS-III Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes
- NSPS-KKK Equipment Leaks of VOC from Onshore Natural Gas Processing Plants
- NSPS-LLL SO_2 Emissions from Onshore Natural Gas Processing Plants
- NSPS-NNN Synthetic Organic Chemical Manufacturing Industry Distillation Operations
- NSPS-QQQ Volatile Organic Compound Emissions from Petroleum Refinery Wastewater Systems
- NSPS-RRR Synthetic Organic Chemical Manufacturing Industry Reactor Processes
- NSPS-CCCC Solid Waste Incinerators

40 CFR 61 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

- NESHAPS-A General Provisions
- NESHAPS-E Mercury
- NESHAPS-J Equipment Leaks (Fugitive Emission Sources) of Benzene
- NESHAPS-M Asbestos
- NESHAPS-V Equipment Leaks (Fugitive Emission Sources)
- NESHAPS-Y Benzene Emissions from Benzene Storage Vessels
- NESHAPS-BB Benzene Transfer Operations
- NESHAPS-FF Benzene Waste Operations

40 CFR 63 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories

- MACT-A General Provisions
- MACT-B Control Technology Determinations for Major Sources
- MACT-F Process Vents, Storage Vessels, Transfer Operations, and Wastewater
- MACT-G Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
- MACT-H Equipment Leaks
- MACT-I Certain Processes Subject to the Negotiated Regulation for Equipment Leaks
- MACT-Q Industrial Process Cooling Towers
- MACT-R Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)
- MACT-T Halogenated Solvent Cleaning
- MACT-Y Marine Vessel Tank Loading Operations
- MACT-CC Petroleum Refineries
- MACT-DD Off-Site Waste and Recovery Operations

Federal Regulations Requiring States to Regulate Emissions at Refineries

- State Implementation Plan (SIP) Requirements for Meeting NAAQS
- State Operating Permit Programs
- Regional Haze Rule
- Stratospheric Ozone Regulations
- Acid Rain Provisions
- Nitrogen Oxides Emission Reduction Program
- Control Technology Guidelines (guidance for emission controls, which states may incorporate into their regulations)
- Petroleum Liquid Storage (2 regulations)
- Equipment Leaks
- Vacuum Producing Systems, Wastewater Separation and Process Unit Turnarounds
- Air Oxidation Processes
- Distillation Operations and Reactor Processes
- Tank Truck Gasoline Loading Terminals

Upcoming Federal Regulations Requiring Emission Controls at Refineries

- Refinery MACT II (NESHAP)
- Refinery Residual Risk
- NESHAP for Combustion Turbines
- NESHAP for Industrial Boilers
- NESHAP for Process Heaters
- NESHAP for Reciprocating Internal Combustion Engines
- NESHAP for Site Remediation
- NESHAP for Organic Liquid Distribution
- Residual Risk for NESHAP source categories

State (Texas) Regulations Requiring Emission Controls at Refineries

- 30 TAC 101 General Rules
- 30 TAC 106 Permits by Rule
- 30 TAC 111 Control of Air Pollution from Visible Emissions and Particulate Matter
- 30 TAC 112 Sulfur Compounds
- 30 TAC 113 Hazardous Air Pollutants
- 30 TAC 115 Control of Air Pollution from Volatile Organic Compounds

- VOC storage tank control device requirements, inspections, records [30 TAC 115.112, 115.114, 115.116]
- Process vent gas control requirements [30 TAC 115.121, 115.122, 115.126]
- Water separator control requirements [30 TAC 115.131, 115.132, 115.136]
- VOC Emissions Limit for gasoline transfers and VOC loading operations at other than gasoline terminals, gasoline bulk plants, and marine terminals [30 TAC 115.211]
- Operation of vapor recovery system for gasoline transfers [30 TAC 115.212]
- Land-based VOC transfer operations leak testing and records [30 TAC 115.214]
- Loading Operations CEM requirements for Direct-flame incinerator, a carbon adsorption system, a chiller or catalytic incinerator to control VOC emissions from a vacuum-producing system [30 TAC 115.216]
- Control of Vent Gas Streams and Procedures to recover and store all pumpable or drainable liquids at shutdowns/turnarounds and procedures to reduce vessel gas pressure to 5 psig or less by recovery or combustion before venting to the atmosphere [30 TAC 115.312]
- Process Unit turnaround records and CEM requirements for direct-flame incinerator, carbon adsorption system, chiller or catalytic incinerator to control VOC emissions from a vacuum-producing system [30 TAC 115.316]
- Fugitive Emission Control Conduct Monitoring and Records [30 TAC 115.324-115.326]
- Wastewater VOC component standards, operation and records [30 TAC 115.142]
- Wastewater control components monitoring and CEM requirements [30 TAC 115.136, 115.143 - 115.144]
- Leak Monitoring Requirements [30 TAC 115.354, 115.356]

- 30 TAC 116 New Construction/Modification
- 30 TAC 117 Control of Air Pollution from Nitrogen Compounds
- 30 TAC 118 Control of Air Pollution Episodes
- 30 TAC 122 Federal Operating Permits

January 19, 2001

MEMORANDUM

SUBJECT: Status of the New Source Review Improvement Rulemaking

TO: New Source Review Stakeholders

FROM: Robert Perciasepe *(Signed by Robert Perciasepe)*
Assistant Administrator

Over the last two years we have all worked hard to develop improvements to the New Source Review (NSR) program. As I have discussed with you, I believe it is essential that this program have greater incentives for companies to employ the most effective emission reduction techniques voluntarily and give greater flexibility when companies take these voluntary actions. I am writing to share with you where we are on the NSR Improvement effort as I leave this office.

We have come a long way together in developing the conceptual framework for how EPA can improve the NSR program by providing greater certainty and flexibility for industry without sacrificing the level of environmental benefit provided by the current program or meaningful public participation. Due to the array of policy and legal issues that arose on the vast number of areas we attempted to tackle in one very large rulemaking, we were not able to complete the regulatory packages in this Administration. The concepts that we developed make both economic and environmental sense because in return for environmental performance, industry will receive greater flexibility and more certainty for business investment decisions. The concepts would not undercut the basic goals of the NSR program.

The concepts that we developed and which I support are listed below. I believe many of these could be taken as final actions because of the hard work we have done together.

- Voluntary Alternative NSR Program for the Electric Power Generating Industry– This voluntary program would allow owners of power plants to commit to specific, verifiable emissions reductions across all their electric generating units over a defined period of time and in most instances would avoid the need to get an NSR permit when making changes at their facilities.

- Plantwide Applicability Limits (PALs)– Source owners would be able to make changes to their facilities without obtaining a major NSR permit, provided their emissions do not exceed the plantwide cap. Also, facility owners that use PALs must commit to install best controls over time to gain this flexibility and certainty. PALs would be especially attractive to those industries (e.g., pharmaceuticals and electronics) who need to make changes quickly to respond to market demands in order to stay competitive in a global marketplace.

- Clarifications of Roles, Responsibilities and Time Frames for Class I Area Reviews– The process for review of permit applications by Federal Land Managers (FLMs) would be clarified to delineate the roles of the source owner, the permitting authority and the FLM, in conducting permit reviews for sources potentially affecting air quality near national wilderness areas and parks (Federal Class I areas). These changes would reduce delays and disputes associated with permitting applications for sources near Federal Class I areas because they would provide a time frame for the FLM to identify any concerns and analyses needed for the permit applications. Also, it would clarify that the FLM does not have the authority to veto permits, and ensure that the FLM obtains the necessary information to conduct their permit reviews in a timely manner.

- Clean Unit Exemption– This exemption would provide an incentive for source owners to install the best emission controls on new or modified emission units and provide flexibility and certainty so that most future changes at such units would not trigger NSR. An owner of an emissions unit that meets certain minimum criteria to be considered "clean" could make most changes to these units without triggering NSR for a specified period of time, such as ten years.

- Innovative Control Technology Waiver– This waiver would provide more flexibility for owners of sources who risk trying innovative technologies that have not yet been proven effective. Should the innovative technologies not perform up to expectations, we would provide the owners with time either to correct the deficiencies or alternatively apply a more standard control technology.

- Pollution Control Project Exclusion– This would codify our existing policy that owners of facilities making changes to their plants that primarily reduce one or more targeted air pollutants (but which collaterally increase other pollutants) are excluded from NSR provided certain conditions are met. We would provide a list of environmentally beneficial technologies that, absent other information that would indicate that the projects would not be environmentally beneficial, would be presumptively eligible for the exclusion.

- Control Technology Review Requirements– Because disputes arise over what control technologies are considered available, the permit review process can become lengthy. To improve the process for obtaining a permit, we would (1) add a definition of "demonstrated in practice,"(2) provide a "cut off" date for consideration of additional control technologies, (3)

add provisions that specify when applications are deemed "complete," and (4) require that control technology determinations be entered into a clearinghouse before permits can become effective.

Nearly all parties in our discussions identified the need to have all of the data on the latest control technology determinations made by permitting authorities in the EPA clearinghouse. Improving the availability of this information to everyone will greatly assist the permitting process. To this end, I have committed significant resources to gather all of the existing data, input it into the database, and redesign the system to make it easier for all parties to put in new data to keep it up-to-date.

One of the lessons that we have learned through our ongoing efforts is that it would be difficult, if not impossible, to improve NSR in one large rulemaking. Instead, I believe it is best to make incremental changes that will provide flexibility and certainty without sacrificing the benefits of the current program. I hope the new Administration will consider finalizing the concepts described above that provide flexibility and certainty without compromising environmental protection to make near term progress. I realize there are other issues, such as applicability for the base program, that also need resolution. For these remaining issues, continued discussions in the context of the overall program are needed.

I appreciate and thank you for the time, effort and input that you have provided over the past years, and I believe that both industry and the environment will benefit from the approaches described above.

RESPONSES OF BOB SLAUGHTER TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. Could you provide some examples that illustrate the impact of the current NSR program on the domestic refining industry's ability to perform maintenance?

Response. On July 23, 2001, NPRA submitted the attached letter to the Environmental Protection Agency as a followup to an earlier meeting held with EPA during its ongoing NSR review. As part of that submission, NPRA stated: "Uncertainties about the program's interpretations have often placed our members in a state of retroactive 'enforcement jeopardy' while adding considerable delay and cost to refinery projects. The ultimate effect has been to constrain the industry's ability to (1) expand domestic refining capacity, (2) increase the supply of cleaner burning fuels, and (3) enhance energy efficiency. The unavoidable conclusion is that recent Administration of the NSR program has had an adverse impact on the nation's fuel supplies and that the program merits careful review and reform."

Uncertainty resulting from shifting interpretation of the "routine maintenance, repair and replacement" exemption has been an important contributor to the problems cited in the paragraph cited above.

The July 23, 2001 letter to EPA cited numerous examples in which NSR reinterpretation has adversely affected industry operations and improvements. The relevant section of the transmittal letter reads as follows:

"To demonstrate NSR's 'real' world" impact, we have collected from our members some concrete examples of refining projects affected by NSR-related uncertainties. Attachment 1 contains more than 30 examples showing how NSR reinterpretations in the recent past have had a chilling effect on desirable investments or added considerable delay and cost." We are attaching Attachment 1 to that letter, for your complete information. In summary, the impact of the examples contained therein is as follows: Example # Impact:

1. Restrictions place an artificial limit on the refinery's capacity to produce clean fuels.
2. The permitting uncertainty created by EPA's current interpretation of NSR, and the threat of EPA overfilling resulted in delay and the use of extraordinary measures and resources by the refinery to obtain a permit for clean fuels.
3. Foregone production of clean fuels.
4. Regulatory uncertainty may cause a reliability project to be abandoned. Fuel supply could be impacted.
5. These steps would increase fuel production and improve environmental compliance (delayed by NSR reinterpretation and costs increased).
6. Foregone increase in refinery capacity and fuel supply.
7. Foregone production of clean fuels. 10,000–12,000 B/D of RFG supply lost or delayed.
8. Foregone increase in refinery capacity.
9. Additional gasoline and diesel fuel would have resulted if the investment were made. Propane deasphalting yields FCCU and coker feed, which is converted in part to gasoline and diesel fuel.
10. Forgone increase in refinery capacity.
11. Forgone increase in refinery capacity.
12. Forgone increase in refinery capacity.
13. Forgone increase in refinery capacity and fuel supply.
14. Additional gasoline production was foregone. Alkylate is a key blendstock for cleaner, lower sulfur gasoline.
15. If PSD review had been undertaken, gasoline production would have been curtailed.
16. If PSD review had been undertaken, gasoline production would have been curtailed.
17. Enforcement action by EPA on an existing permit. This permit meets the goal of PSD—it prevents deterioration of air quality. EPA has included a similar provision in its recent consent decree with Marathon Ashland.
18. Loss of 50,000 BPD of refining capacity because of EPA's reinterpretation of NSR.
19. If PSD review had been undertaken, gasoline production would have been curtailed. If the project had not been done, an energy efficiency gain and NOx reduction would not have been realized.
20. Refinery capacity increase delayed.
21. Project delayed by 4 months.
22. The difficulties in determining debottlenecking and aggregation issues have resulted in the long delay of a project that could have put more gasoline into the

marketplace during the summers of 2001, 2002 and 2003. Since the actual emission increases would have been negligible, there was no benefit to the environment associated with delaying this project.

23. Gasoline supply foregone.
24. Supply of clean fuels delayed.
25. Capacity increase foregone.
26. Gasoline production increase foregone.
27. Gasoline production and energy efficiency improvements foregone.
28. Air quality improvement delayed or foregone.
29. Gasoline production increase and air quality improvement delayed or foregone.
30. Energy efficiency and air quality improvement foregone.
31. Gasoline production increase delayed or foregone.
32. Gasoline production increase foregone.

Question 2. Could you share with the Committee some of the concerns that state program's many complexities and shifting interpretations?

Response. Several NPRA member companies have told us that state regulators have expressed concern over shifting interpretations of NSR requirements. These regulators have cited EPA reinterpretations as a reason for some delay in what would have otherwise been routine requests for review and approval under formerly longstanding NSR interpretation. This situation is doubly problematic. State regulators are integral to the NSR oversight and permitting process, and the refining industry is facing an unprecedented number of new regulatory requirements which will in many instances require changes to facilities. Many of these regulatory changes must be implemented by early 2006. Because of the nature of the NSR process, our information on these expressions of state regulators' misgivings is anecdotal, but we can assure you that several of our refining members have told us of these experiences.

RESPONSE OF BOB SLAUGHTER TO AN ADDITIONAL QUESTION FROM SENATOR WYDEN

Question. Mr. Slaughter, you have testified that refiners are in "urgent need" of NSR reform and refer to the requirement to reduce 90 percent of sulfur in gasoline and that the program hinders your industry's efforts to produce the cleaner fuels needed. But in April at a hearing on gasoline pricing, we heard testimony from Mr. Reeves from Chevron Texaco that they have made and are making significant expansions at their Pascagoula, Mississippi refinery. He also states that "it will be one of the first refineries in the Nation capable of producing both low sulfur gasoline and on-highway diesel fuel outside of California. The project will be completed in advance of national deadlines for these requirements." It doesn't sound as if the Chevron Texaco refinery was hindered by NSR. Please clarify your statement in light of Mr. Reeves' testimony.

Response. Because this question refers specifically to Chevron Texaco's experience at its Pascagoula, Mississippi refinery, Mr. Reeves has sent a letter to the Committee and Senator Wyden in response to this question. That letter supports and explains the continued need for NSR reform, and I have attached a copy for your easy reference.

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David C. Reeves
President

Chevron

August 7, 2002

The Honorable James Jeffords
Chairman, Senate Environment and Public Works Committee
United States Senate
SD-410 Dirksen Senate Office Building
Washington, DC 20510-6175

The Honorable Ron Wyden
United States Senate
SH-516 Hart Senate Office Building
2nd and C Streets, NE
Washington, DC 20510

Dear Chairman Jeffords and Senator Wyden:

I am writing in response to your July 30, 2002 letter to Bob Slaughter of NPRA regarding follow-up questions to his July16th, 2002 testimony on NSR reform. One question deals specifically with our Pascagoula, Mississippi refinery and testimony that I gave to the Senate Permanent Subcommittee on Investigations on April 30, 2002. The question asks if my April remarks are contrary to the July 16 comments by Mr. Slaughter. We don't believe they are contrary.

Our Clean Fuels Project will enable the refinery to provide the low sulfur fuels required in the Atlanta and Birmingham markets ahead of the regulatory deadlines. This project is not a significant refinery expansion, but is better characterized as retooling the refinery to produce the reformulated fuels. While the project has many environmental benefits, it requires permits under the current Prevention of Significant Deterioration (attainment NSR) rules. The permitting process is a significant effort that has lasted more than two years. This is not an unusual length of time for this process and timely permit issuance remains a critical success factor for us to be able to produce the fuels ahead of regulatory deadlines.

Our experience with this project in no way alters our support for the need to reform the NSR program. Our company and industry have participated in the public NSR rulemaking process which has spanned the last two administrations. We have consistently called for clarifying the rules to reduce uncertainty and provide for a streamlined permitting process while assuring environmental protection. We have emphasized in the past the need for NSR reforms including:

- An effective routine maintenance, repair and replacement policy that reflects the activities undertaken by refiners to keep facilities operating efficiently and safely.

Chevron

- An emissions test that more accurately reflects actual emissions increases at affected units.
- An alternative mechanism to create plant-wide applicable limits (PAL) that allows for modifications within a facility as long as emission limits are not exceeded.

Our goal is not to eliminate permitting for new construction or major modifications, but rather to streamline unnecessary permit delays for projects which have no environmental impact or actually reduce emissions.

Not all of the many changes which our industry must make fall into the category of our Clean Fuels Project at Pascagoula. As I said in my testimony, government should seek to streamline permitting wherever possible while maintaining environmental protections. Thank you for the opportunity to clarify this important point.

Sincerely,

cc: Mr. Bob Slaughter, President, National Petrochemical & Refiners Association

STATEMENT OF HILTON KELLEY, COMMUNITY IN-POWER AND DEVELOPMENT ASSOCIATION AND THE REFINERY REFORM CAMPAIGN

My name is Hilton Kelley, Port Arthur, TX. Community In-Power and Development Association and the Refinery Reform Campaign.

I am grateful for the opportunity to speak out on behalf of refinery communities across the Nation and tell the Senate the truth about what pollution is doing to us and how much worse it would be under the new EPA proposal to rollback New Source Review. For example, by allowing refineries to go backward 10 years to pick their baseline, pollution will increase. It makes no sense to go backward; we need to move forward and keep working to reducing pollution by enforcing NSR fully.

Everyone needs to know that the Clean Air Act, as it now stands, must be preserved and the new EPA proposal is really a death sentence for already sick industrial neighborhoods. The Clear Skies Proposal of the Bush Administration will do nothing for us because it deals only with power plants. It doesn't cover refineries and chemical plants.

Refineries are located in 36 States, 125 cities and up to 67 million people breathe air polluted by oil refineries. This is a national problem and the only solution we see is strict enforcement of the New Source Review, not a relaxation.

I grew up in Port Arthur's Westside in the Carver Terrace housing project right next to the cluster of refineries. I moved away, but in 2000, I returned. I am on a crusade to empower local citizens to fight for their health and a key element of that crusade is to protect the Clean Air Act's New Source Review.

The rest of the country needs what Port Arthur makes, just like other refinery communities. The neighbors live with the fallout, pollution and health problems. Texas is home to America's largest oil refineries and chemical plants. While the State produces the energy the Nation needs, it also produces more industrial pollution than any other State according to the latest Right To Know data. Our neighborhoods pay the highest price for the rest of the nation's "cheap gasoline". Sometimes it can take your breath away. We benefit the least in this bargain as we have high unemployment. Although the plants get tax breaks by being in an "Empowerment Zones", our people don't see the benefits.

It seems that these heavy industries concentrate in low income communities and communities of color where there is the least resistance. They operate 24 hours a day, 365 days a year and expand constantly. Right now we are challenging another expansion of the Premcor refinery that wants to dump 525 more tons of pollution on us so that they can make low sulfur gasoline. It seems we never have a chance to get cleaner air.

This problem has a human face. In Port Arthur, almost every day, 10-year-old Cullen Como gets a breathing treatment for asthma. The illness causes him to miss school often. His mother and sister also have trouble breathing. The family lives right across the street from the refineries. Cullen's sister, Kendra Prince, says, "It's dangerous, and everybody around here is sick, everybody. It's just killing off people."

The plants emit a toxic soup of chemicals. These chemicals are known to cause cancer, affect brain functions, and hurt organ development and reproduction. We, like other refinery communities, have teamed up with Denny Larson, of the Refinery Reform Campaign to form a local "Bucket Brigade" for Port Arthur. The bucket is a simple, but effective air sampler. It uses a special bag and vacuum pump. Air samples taken during toxic releases have shown unhealthy levels of hydrogen sulfide, benzene and other dangerous chemicals. We were forced to do this because there are no real air monitors in our community.

Annie Edwards, who suffers from breathing problems, has two breathing machines and has a terrible reaction to the neighborhood atmosphere. "Like I panic and I can't catch enough air, and if I go outside, it's worse. I have to strap on my breathing machine at night so I don't pass on while I sleep."

I know from walking door to door that these problems are widespread. Too many people are dying from cancer. Too many people have thyroid problems. We have two dialysis clinics in this small town, and it's time for the citizens to say, 'Enough is enough,' and it's time to do something about it.

We want to work with industry. We want them to put the necessary controls on their stacks, put the necessary controls on their valves, so they will quit emitting so much tons of pollution in the community.

We also have a huge pollution problem with accidents, fires, explosions and upset emissions releasing thousands of pounds of chemicals into our air through flares, relief valves and dump stacks.

Some Examples are:

March 2002, Premcor Refining, Port Arthur.—80,000 pounds of propane/butane mix, 7,704 pounds of VOCs per hour, 207,112 pounds of sulfur dioxide, 2,218 pounds of hydrogen sulfide, 163 pounds of nitrogen oxides.

February 2002, Premcor Refining, Port Arthur, February 19, 2002.—About 5,650 pounds of propane and 143 pounds of hydrogen sulfide were released during the 219-hour upset.

January 2002, BASF Corp., Port Arthur, January 21, 2002.—The plant experienced an upset, during a 14-hour period, about 57,000 pounds of benzene, 1,055,000 pounds of ethylene, 675,000 pounds of propylene, 462,000 pounds of butylene, 2,200 pounds of butadiene and 2,200 pounds of toluene were released.

January 2002, Premcor Refining, Port Arthur, January 2, 2002.—Upset, about 26 pounds of hydrogen sulfide per hour, 2,479 pounds of sulfur dioxide per hour, 295 pounds of VOCs per hour and 6 pounds of nitrogen oxides per hour were released. The upset lasted 168 hours.

A recent health survey done by University of Texas toxicologist Marvin Legator compared people living in housing projects in refinery communities like Port Arthur and Beaumont to a non-industrial similar population. Preliminary results show a vast difference between the health symptoms these communities report.

• Seventy-five percent of the people from Port Arthur complained of headaches and muscle aches compared to twenty percent in the control group.

• Eighty percent of Port Arthur people had ear, nose and throat conditions compared to twenty percent in the control area.

• Eighty percent of those questioned had heart conditions and respiratory problems in refinery neighborhoods compared to thirty percent in non-refinery areas.

Dr. Legator has made a strong correlation between the known health effects from the emissions from the refineries and the health symptoms we experience.

Another study conducted by MacArthur Genius Award winning Scientist, Wilma Subra, showed that health symptoms and emergency room visits increase when there is a spill or unexpected release from the plants.

Glenn Alexander, a pediatric nurse practitioner, has been treating local children for 10 years. His waiting room is nearly always full. He sees an unusually large number of upper respiratory infections, allergies, skin rashes and asthma. "I do see things because I am a health care provider. The air is not always clear here. Sometimes it's hard for children to breathe." Some of the effects are irreversible and a life long problem.

Alfred Dominic was born in Port Arthur in 1928: "Many of my friends have died of cancer, and many of them are sick at the present time, because of the emissions."

Mabel Mallard a SUNOCO refinery neighbor of South Philadelphia, PA, States: "How can we live in constant fear not knowing what we will be forced to breathe next from these refineries? Don't tread on our New Source Review, we need the protection."

CONCLUSIONS

1. New Source Review should be preserved and fully enforced. It is a grave matter of environmental justice to people who need the help of the U.S. Senate to protect their health and the health of innocent children. Going backward to allow refineries to pick a baseline from the last 10 years is unthinkable to people living on the fenceline suffering from current levels of pollution.

2. The Clear Skies Plan won't help us. We need the Federal protection and right to know of the New Source Review.

Thank you. I would be happy to answer any of your questions.

REFINERY REFORM CAMPAIGN

thirty six states,125 cities and up to 67 million people

- **Too much pollution creates "hot spots"**
- **Health symptoms match known chemical health effects**
- **Lax enforcement**
- **Concentrated in low income areas**
- **No real air monitoring**
- **No buffer zones**

www.refineryreform.org

Upset Emissions

March 2002

ExxonMobil Corp. — Beaumont

Approximate March releases: **208 tons** of carbon monoxide; 2,403 pounds of NH3

Mobil Chemical Co. — Beaumont

Approximate March releases: **1,142 pounds of benzene**, 1,433 pounds of toulene, 230 pounds of paraxylene, 1,834 pounds of VOCs, 23,486 pounds of carbon monoxide, 555 pounds of methane, 910 pounds of ethane, 1,815 pounds of ethylene, 19 pounds of acetylene, 4,609 pounds of nitrogen oxide.

Premcor Refining — Port Arthur

Approximate March releases: **80,000 pounds** of propane/butane mix, 7,704 pounds of VOCs per hour, 207,112 pounds of sulfur dioxide, 2,218 pounds of hydrogen sulfide, 163 pounds of nitrogen oxides.

February –2002

Premcor Refining - Port Arthur

-Feb. 8, 2002, a fire occurred within the battery limits of DCU-843. **Opacity was at 100 percent** during the 42 minute upset.

-Feb. 12, 2002, a stripper feed pump tripped and caused a **23-hour upset**. About 343 pounds of VOCs, 11 pounds of nitrogen oxides and 64 pounds of carbon monoxides were released.

-Feb. 19, 2002, the Debutanizer Overhead Exchanger was leaking. About 5,650 pounds of propane and 143 pounds of hydrogen sulfide were released during the **219-hour upset**.

-Feb. 25, 2002, maintenance and repairs began on several units. The repairs were expected to take about 16 days and result in the emission of about 1,725 pounds of VOCs, 3,725 pounds of sulfur dioxide, 46 pounds of hydrogen sulfide, 535 pounds of carbon monoxide and 100 pounds of nitrogen oxides.

January-2002

BASF Corp. - Port Arthur

On Jan. 21, 2002, surging of flow tripped out the C2/C3 compressor at the Ethylene Cracker. About **57,000 pounds of benzene**, 1,055,000 pounds of ethylene, 675,000 pounds of propylene, 462,000 pounds of butylenes, 2,200 pounds of butadiene and 2,200 pounds of toulene were estimated to be released.

Mobil Chemical Co. Olefins/Aromatics Plant - Beaumont

-Jan. 1, 2002, an upset occurred due to the loss of ethylene and propylene refrigeration compressors because of compressor surges. Emissions included 1,301 pounds of hydrogen, **28,387 pounds of carbon monoxide**, 1,013 pounds of ethane, 2,317 pounds ethylene, 1,054 pounds of butadiene, 1,336 pounds of cyclopentadiene, 765 pounds of benzene, and 5,571 pounds of nitrogen oxides.

Premcor Refining - Port Arthur

-Jan. 26, 2002, an upset at DCU 843 increased the amount of spill gas to 1242 overloading the system. About **9,670 pounds per hour** of sulfur dioxide and 967 pounds per hour of nitrous oxide were released during the **9.67-hour upset.**

Upset Emissions Jefferson County, Texas

as reported to TNRCC

March 2002

Air Products & Chemicals — Port Arthur

Approximate March releases: 169.7 pounds of carbon monoxide, 93.2 pounds of nitrogen oxides.

Ameripol-Synpol Corp. — Port Neches

Approximate March releases: 303.5 pounds of butadiene.

Arch Chemicals — Beaumont

Approximate March releases: 9 pounds of vinyl acetate.

Atofina — Port Arthur

Approximate March releases: 411 pounds of nitrogen oxides, 872 pounds of VOCs, 1,938 pounds of sulfur dioxide, 21 pounds of hydrogen sulfide, 987 pounds of carbon monoxide, 90 pounds of benzene.

BASF Corp. — Port Arthur

Approximate March releases: 5,968 pounds of ethylene.

Bayer Corporation — Orange

Approximate March releases: 1,000 pounds of rubber, 0.3 pounds of cyclohexane, 211 pounds of chlorobenzene.

Chevron Phillips Chemical Co. — Port Arthur

Approximate March releases: 32.3 pounds of benzene, 39.9 pounds of butadiene, 3.6 pound of nitrogen dioxide, 89 pounds of nitric oxide, 9 pounds of butane, 342 pounds of ethylene, 2 pounds of acetylene, 11 pounds of pentane, 9 pounds of propane, 21 pounds of propylene.

DuPont — Beaumont Industrial Park

Approximate March releases: 865 pounds of acrylonitrile, 21 pounds of acetonitrile and 10 pounds of hydrocyanic acid.

DuPont — Sabine River Works, Orange

Approximate March releases: 181 pounds of particulate matter, 4,425 pounds of nitrous oxides, 23,240 pounds of carbon monoxide, 449 pounds of butadiene, 307 pounds of benzene, 12,850 pounds of ethylene, 54 pounds of propylene, 7,254 pounds of VOCs, 27 pounds of sulfur dioxide.

Equistar/PD Glycol — Beaumont

Approximate March releases: more than 10 pounds of ethylene oxide, less than 5,000 pounds of ethylene.

ExxonMobil Corp. — Beaumont

Approximate March releases: 208 tons of carbon monoxide, 2,403 pounds of NH3.

Goodyear Tire & Rubber Co. — Beaumont

Approximate March releases: 174 pounds of butadiene, 193 pounds of hexane, 66 pounds of butene, 46 pounds of isobutane, 4 pounds of isoprene, 16 pounds of hydrocarbons.

Huntsman Petrochemical Corp. Aromatics & Olefins Plant — Port Arthur

Approximate March releases: more than 10 pounds of nitrogen oxides and benzene.

Huntsman Petrochemical Corp. C4 Plant — Port Neches

Approximate March releases: 238 pounds of butadiene, 34 pounds of butene, 8 pounds of isobutane, 22 pounds of butane, more than 1,000 pounds of MTBE.

Huntsman Petrochemical Corp. Oxides & Olefins Plant — Port Neches

Approximate March releases: 100 pounds of morpholine.

Huntsman Petrochemical Corp. Propylene Oxide/MTBE Plant — Port Neches

Approximate March releases: 245 pounds of tert butyl alcohol, 65 pounds of DTBP, 7 pounds of methanol, 634 pounds of acetone, 2,336 pounds of isobutane, 245 pounds of methyl formate, 29 pounds of MEK.

Mobil Chemical Co. — Beaumont

Approximate March releases: 1,142 pounds of benzene, 1,433 pounds of toulene, 230 pounds of paraxylene, 1,834 pounds of VOCs, 23,486 pounds of carbon monoxide, 555 pounds of methane, 910 pounds of ethane, 1,815 pounds of ethylene, 19 pounds of acetylene, 4,609 pounds of nitrogen oxide.

Motiva Enterprises — Port Arthur

Approximate March releases: 44 pounds of nitrogen oxide, 756 gallons of DBSLR, 3,029 pounds of sulfur dioxide, 17 pounds of hydrogen sulfide, 3 pounds of carbon monoxide.

Onyx Environmental Services — Port Arthur

Approximate March releases: 1,075 pounds of particulate matter, 63 pounds of sulfur dioxide, 14 pounds of nitrogen oxide.

Premcor Refining — Port Arthur

Approximate March releases: 80,000 pounds of propane/butane mix, 7,704 pounds of VOCs per hour, 207,112 pounds of sulfur dioxide, 2,218 pounds of hydrogen sulfide, 163 pounds of nitrogen oxides.

South Hampton Refining Co. — Jasper

Approximate March releases: 5 pounds of sulfur dioxide.

February –2002

Atofina - Port Arthur

On Feb. 11, 2002, a hole developed in the tube sheet of the reactor effluent condenser on the main fin-fan. The root cause of the event was related to corrosion resulting from the corrosive nature of the material flowing through the exchanger. About 1,301 pounds of sulfur dioxide, 1,980 pounds of hydrogen sulfide, 420 pounds of methyl mercaptan, and 2.4 pounds of carbon disulfide was released as a result.

On Feb. 12, 2002, an upset occurred involving the Vessel V-14 Process Safety Valve within the Alkylation Unit. The root cause was not specified. About 125 pounds of nitrogen oxides was thought to be released as a result.

On Feb. 13, 2002, a 15-hour upset occurred due to a leak in the ISO "B" Contactor Recycle Line, which had to be shut down for repairs. About 1,333 pounds of VOCs, 130 pounds of nitrogen oxides and 942 pounds of carbon monoxide were estimated to be released as a result of the event.

On Feb. 19, 2002, a 12-hour upset occurred due to a tripped solenoid on PC-614. Approximately 2,301 pounds of sulfur dioxide and 402 pounds of nitrogen oxides were released.

On Feb. 24, 2002, the SCOT Unit was shutdown to repair a crack in the internal refractory in order to avoid a potential unplanned unit shutdown. The result was the release of about 24,000 pounds of sulfur dioxide and 200 pounds of nitrogen oxides.

On Feb. 26, 2002, a 48 hour upset occurred due to sub-freezing temperatures. About 244 pounds of benzene were released.

On Feb. 5, 2002, the acetylene converters were not working properly. This resulted in the release of about 15,956 pounds of ethylene.

On Feb. 6, 2002, an upset occurred due to the same reason. Another 12,152 pounds of ethylene were released.

On Feb. 13, 2002, a primary inhibitor pump failed. This nine-hour event resulted in the release of an estimated 37,369 pounds of propylene.

On Feb. 20, 2002, a high acetylene concentration in the Ethylene Fractionator made it necessary to flare. About 29,325 pounds of ethylene were released.

Chevron Phillips Chemical Co. – Port Arthur

On Feb. 8, 2002, start-up of the FCC Processing Section began and was expected to last for 380 hours. About 257 pounds of nitric oxide was estimated to be released as a result.
On Feb. 14, 2002, a computer control system was being replaced. During the 25 minute period about 38 pounds of butadiene, 30 pounds of benzene, 38 pounds of butane, 325 pounds of ethylene, 8 pounds of acetylene, 117 pounds of nitric oxide and one pound of nitrogen dioxide were released.
On Feb. 18, 2002, a 43-minute upset occurred due to a problem with the depropanizer tower pressure controller. About 124 pounds of butadiene, 18,248 pounds of propane, 39,261 pounds of propylene and 11 pounds of nitric oxide were released.
On Feb. 23, 2002, the plant experienced a two-hour upset due to maintenance on an exchanger. About 15 pounds of nitric oxide were released as a result.

DuPont - Beaumont Industrial Park

On Feb. 5, 2002, the purification building flare pilots went out. During the two-hour period about 100 pounds of hydro cyanic acid and 30 pounds of acrylonitrile were released.

DuPont - Sabine River Works, Orange

On Feb. 3, 2002, a three-hour upset occurred due to a level transmitter problem. About 1,336 pounds of pentene nitriles were released.
On Feb. 8, 2002, a relief valve relieved early causing a five-minute upset. About 311 pounds of carbon monoxide, 57 pounds of nitrogen oxides and 111 pounds of ethylene were released.
On Feb. 11, 2002, the NOx steam tripped out at the CoGen Unit due to high temperature. About 228 pounds of nitrogen oxides were released.
On Feb. 28, 2002, a 12-hour upset occurred due to a problem with a relief valve. An unknown amount of benzene was released.

Goodyear Tire & Rubber Co. - Beaumont

On Jan. 30, 2002, a leak in a natural gas line was discovered. About 3,630 pounds of butadiene, 706 pounds of hexane, 201 pounds of butene, 62 pounds of isobutane and 50 pounds of propane were released.
On Feb. 13, 2002, a weak reaction during production startup caused low conversion of monomer in the reactor. About three pounds of butene, 35 pounds of butadiene, 16 pounds of hexane, 7 pounds of methyl pentane and 3 pounds of methylcyclopentane were released.

Huntsman Petrochemical Corp. Oxides & Olefins Plant - Port Neches

On Feb. 2, 2002, a leak developed on a flange below the relief valve. About 17.68 pounds of ammonia were released during the four-hour event.
On Feb. 4, 2002, a spill occurred which resulted in the release of 24 pounds of textherm oil.
On Feb. 22, 2002, a low-pressure vent gas line developed a hole. About 245 pounds of tert butyl alcohol were released. Later in the day, a line over pressured and a relief valve opened as a result of failure of instrumentation. About 10 pounds of ammonia were released as a result.

Inland Paperboard and Packaging, Inc. - Orange

On Feb. 3, 2002, the Lime Kiln was shutdown. About 137 pounds of terpenes were released.
On Feb. 11, 2002, start up sequence of the No. 1 Recovery Furnace began. For 30 minutes, opacity was at 90 percent.

Mobil Chemical Co. Olefins/Aromatics Plant - Beaumont

On Feb. 13, 2002, an upset occurred due a voltage surge. Hydrocarbons were sent to the flare for approximately 96 hours.
On Feb. 26, 2002, a leak occurred in the Paraxylene Cooling Tower. The upset, which resulted in the release of about 144 pounds of benzene per day, lasted around 81 hours.
On Feb. 27, 2002, an instrument malfunction caused an upset. Hydrocarbons were sent to the flare for about 24 hours.

Motiva Enterprises - Port Arthur

On Feb. 5, 2002, hydrogen sulfide was found in the fuel gas. About 590 pounds of sulfur dioxide were released as a result. Later that day, a problem with a pressure controller caused another upset. About 761 pounds of sulfur dioxide, 9 pounds of nitrogen oxide, 2 pounds of nitrogen dioxide, 79 pounds of carbon monoxide, 8 pounds of hydrogen sulfide, 32 pounds of propane, 151 pounds of isobutane, and 49 pounds of N-butane were released.

On Feb. 12, 2002, over pressuring of settlers occurred due to an excess of propane in the Alkylation Unit. About 16 pounds of nitrogen oxide, two pounds of nitrogen dioxide, 126 pounds of carbon monoxide, 7 pounds of propane, 222 pounds of isobutane, 106 pounds of N-butane, and 10 pounds of isopentane were released.

On Feb. 27, 2002, a line froze causing a flaring incident. About 1,076 pounds of sulfur dioxide were released. Later in the day, the Delayed Coker Unit was in the process of shutting down when the heaters lost heat faster than anticipated. During the upset about 88 pounds of nitrogen oxide, 10 pounds of nitrogen dioxide and 7,379 pounds of sulfur dioxide were released.

PD Glycol Equistar- Beaumont

On Feb. 26, 2002, a Programmable Logic Controller Card went bad. Ethylene Oxide was released at an unknown rate.

Premcor Refining - Port Arthur

On Feb. 8, 2002, a fire occurred within the battery limits of DCU-843. Opacity was at 100 percent during the 42 minute upset.

On Feb. 12, 2002, a stripper feed pump tripped and caused a 23-hour upset. About 343 pounds of VOCs, 11 pounds of nitrogen oxides and 64 pounds of carbon monoxides were released.

On Feb. 19, 2002, the Debutanizer Overhead Exchanger was leaking. About 5,650 pounds of propane and 143 pounds of hydrogen sulfide were released during the 219-hour upset.

On Feb. 25, 2002, maintenance and repairs began on several units. The repairs were expected to take about 16 days and result in the emission of about 1,725 pounds of VOCs, 3,725 pounds of sulfur dioxide, 46 pounds of hydrogen sulfide, 535 pounds of carbon monoxide and 100 pounds of nitrogen oxides.

January-2002

Ameripol-Synpol Corporation - Port Neches

On Jan. 9, 2002, the plant experienced a flash fire in the 7D Recovery Unit. The root cause of the fire is thought to be rapid decomposition of a form of butadiene peroxide. Approximately 340 pounds of butadiene, four pounds of nitrous oxides, 23 pounds of carbon monoxide, nine pounds of VOCs and six pounds of particulate matter were released as a result.

On Jan. 15, 2002, due to operator error, the plant had an upset that resulted in the release of an estimated 600 pounds of styrene into the soil. An estimated 100 pounds of styrene were released into the air.

Atofina - Port Arthur

On Jan. 3, 2002, the plant had a 291-hour upset due to equipment problems caused by sub-freezing temperatures. This resulted in the release of approximately 338 pounds of VOCs, 2,445 pounds of sulfur dioxide, 49 pounds of hydrogen sulfide, 384 pounds of nitrous oxides and 1,957 pounds of carbon monoxide.

On Jan. 4, 2002, the plant experienced a problem with the Co-gen. The root cause is still under investigation. The two-hour event resulted in the release of about 460 pounds of carbon monoxide.

On Jan. 4, 2002, a frozen line from an ice plug caused diversion of C-200 2nd Stage Discharge Drum Sour Gas. The event lasted about two hours and resulted in the release of about 22 pounds of VOCs, 608 pounds

of sulfur dioxide, six pounds of hydrogen sulfide, two pounds nitrous oxides and 11 pounds of carbon monoxide.

On Jan. 5, 2002, the plant had an upset because of a loose wire on the high temperature switch. This event resulted in the release of about 192 pounds of sulfur dioxide and 2 pounds of hydrogen sulfide.

On Jan. 9, 2002, the PLC Processor program at SRU-1 failed causing a shutdown. About 70,447 pounds of sulfur dioxide, 763 pounds of hydrogen sulfide, 18 pounds of nitrous oxides and 87 pounds of carbon monoxide.

On Jan. 22, 2002, a compressor knock-drum drum high level alarm shutdown the C-200 compressor. The root cause is under investigation. About 2,975 pounds of sulfur dioxide were thought to be released as a result.

BASF Corp. - Port Arthur

On Jan. 3, 2002, the condensation of liquids in inlet lines caused low temperature shutdown of the Thermal Oxidizer. During the six-hour upset, an estimated 572 pounds of benzene were released.

On Jan. 15, 2002, high propane concentrations in the propylene made it necessary to flare. About 7,866 pounds of propylene were released.

On Jan. 21, 2002, the plant experienced an upset due to surging of flow that tripped out the C2/C3 compressor. During a 14-hour period, about 57,000 pounds of benzene, 1,055,000 pounds of ethylene, 675,000 pounds of propylene, 462,000 pounds of butylene, 2,200 pounds of butadiene and 2,200 pounds of toluene were released.

On Jan. 25, 2002, mechanical problems with core exchangers led to a shutdown at the plant. Emissions were unknown at the time of the report.

Chevron Phillips Chemical Co. – Port Arthur

On Jan. 6, 2002, the Ethylene Unit was started back up. About 809 pounds of butadiene, 673 pounds of benzene, 1,073 pounds of butane, 23,295 pounds of ethylene, 151 pounds of acetylene, 326 pounds of pentane, 393 pounds of propane, 1,273 pounds of propylene, 8,562 pounds of nitric oxide and 70 pounds of nitrogen dioxide were released.

On Jan. 12, 2002, an upset occurred due to a compressor that was tripped due to low lube oil pressure. About 39 pounds of butadiene, 32 pounds of benzene, 39 pounds of butane, 1,415 pounds of ethylene, 13 pounds of acetylene, 27 pounds of propane, 67 pounds of propylene, 59 pounds of nitric oxide and one pound of nitrogen dioxide were released.

On Jan. 19, 2002, the Cyclohexane Unit was shut down to change catalyst on vessels in reactors. This event resulted in the release of about 8.5 pounds of nitric oxide and 0.093 pounds of nitrogen dioxide.

DuPont - Beaumont Industrial Park

On Jan. 2, 2002, the AOP unit in aniline started emitting smoke from the stack. Exact emissions were not specified.

On Jan. 17, 2002, repairs to the thermal oxidizer were needed so the unit was shut down. Releases included 14 pounds of acetone, 34 pounds of acrylonitrile, 550 pounds of ethylene, 52 pounds of propane and 1,500 pounds of propylene.

On Jan. 28, 2002, work on the propylene vaporizer level transmitter caused a surge of propylene. Visible emissions were a result.

DuPont - Sabine River Works, Orange

On Jan. 3, 2002, a relief valve on the ethylene fractioner relieved early and caused a four-hour upset. Emissions included 2,837 pounds of carbon monoxide, 521 pounds of nitrous oxides, 37,668 pounds of ethylene and 864 pounds of ethylene.

Goodyear Tire & Rubber Co. - Beaumont

On Jan. 30, 2002, a leak in a natural gas line was discovered. The pipe was blocked in for repairs, which cut fuel to the down-stream flare pilot light. Releases included about 3,594 pounds of butadiene, 699 pounds of hexane, 370 pounds of butene, 62 pounds of isobutane and 50 pounds of propane.

Huntsman Petrochemical Corp. Aromatics and Olefins Plant - Port Arthur

On Jan. 31, 2002, a Dynamic Matrix Control failure caused flaring. Releases included an indeterminate amount of nitrous oxides.

Huntsman Petrochemical Corp. C4 plant - Nederland

On Jan. 8, 2002, oil from a tank got into the wastewater system, causing an upset. Releases included 52 pounds of butadiene, 17 pounds of nitrous oxides, 125 pounds of carbon monoxide, 23 pounds of butane and nine pounds of methylbutene.

On Jan. 9, 2002, a problem with the flare occurred while polyblend oil/hydrocarbon from a tank was being pumped to the wastewater stripper. Releases include 16 pounds of butadiene, 39 pounds of carbon monoxide and seven pounds of butane.

On Jan. 9, 2002, Tank 77 has an accumulation of oil/hydrocarbon in it. As the day heated up, pressure built up in the tank caused the hatch to lift to the atmosphere. Releases included 231 pounds of butadiene, 106 pounds of butane, 32 pounds of butylene, 105 pounds of pentane and 119 pounds of dimethlybutene.

On Jan. 23, 2002, an upset occurred due to a drop in the level in the tank that feeds a wastewater stripper. Estimated releases included butadiene and benzene at quantities greater than 10 pounds.

On Jan. 27, 2002, the low-flow switch malfunctioned on a pump. Estimated releases included more than 10 pounds of butadiene

Huntsman Petrochemical Corp. Oxides & Olefins Plant - Port Neches

On Jan. 1, 2002, while installing a clamp on a leak about 108 pounds of ethylene oxide were released.

On Jan. 7, 2002, the F6 unit was shut down. The event was estimated to last until Feb. 15 and result in the release of about 10,000 pounds of ethylene.

Huntsman Petrochemical Corp. Propylene Oxide/MTBE Plant - Port Neches

On Jan. 7, 2002, the unit was shut down for maintenance. Estimated emissions included 100 pounds of nitrous oxides, 500 pounds of carbon monoxide, 20 pounds of propane and 2,500 pounds of propylene.

On Jan. 21, 2002, a peroxidation section upset caused a loss of vacuum systems and shut down of the vent gas recovery system. This resulted in the release of more than 10 pounds of nitrogen oxides.

Mobil Chemical Co. Olefins/Aromatics Plant - Beaumont

On Jan. 1, 2002, an upset occurred due to the loss of ethylene and propylene refrigeration compressors because of compressor surges. Emissions included 1,301 pounds of hydrogen, 28,387 pounds of carbon monoxide, 1,013 pounds of ethane, 2,317 pounds ethylene, 1,054 pounds of butadiene, 1,336 pounds of cyclopentadiene, 765 pounds of benzene, and 5,571 pounds of nitrogen oxides.

On Jan. 23, 2002, a problem draining water from sphere #2. Releases included 63 pounds of carbon monoxide, 35 pounds of butane, 106 pounds of butadiene and 0.34 pounds of benzene.

On Jan. 24, 2002, a stabilizer re-boiler tripped due to a malfunction of the feed electrical switch. Releases included 129 pounds of carbon monoxide, 31 pounds of butane and 25 pounds of nitrogen oxides.

Motiva Enterprises - Port Arthur

On Jan. 2, 2002, the pressure relief valve on the Propane Caustic Scrubber relieved to the flare. About 19 pounds of nitrogen oxide were released.

On Jan. 7, 2002, a chlorine cylinder had a malfunctioning valve that caused an upset. About 12 pounds of chlorine were released.

On Jan. 11, 2002, an upset occurred. The cause was unknown. About 3,669 pounds of sulfur dioxide were released.

On Jan. 21, 2002, an analyzer on a boiler malfunctioned. More than 500 pounds of sulfur dioxide were released.

Premcor Refining - Port Arthur

On Jan. 1, 2002, differential problems at the DCU 843 unit caused an upset. About 243 pounds of hydrogen sulfide per hour, 3,098 pounds of sulfur dioxide per hour and 2,001 pounds of VOCs per hour were released during the event. The upset lasted 7.83 hours.

On Jan. 2, 2002, an unexpected inability to transfer sour fuel gas caused an upset. About 26 pounds of hydrogen sulfide per hour, 2,479 pounds of sulfur dioxide per hour, 295 pounds of VOCs per hour and six pounds of nitrogen oxides per hour were released. The upset lasted 168 hours.

On Jan. 3, 2002, high differential pressure resulted in an operational upset of the fuel gas scrubber. About 443 pounds of hydrogen sulfide per hour, 40,905 pounds of sulfur dioxide per hour and 3,644 pounds of VOCs per hour were released during the 2.47-hour upset.

On Jan. 4, 2002, a leak that had to be bypassed temporarily caused a change in the feed composition to the DCU 843. About 1,032 pounds of sulfur dioxide were released during the 58-minute event.

On Jan. 26, 2002, an upset at DCU 843 increased the amount of spill gas to 1242 overloading the system. About 9,670 pounds per hour of sulfur dioxide and 967 pounds per hour of nitrous oxide were released during the 9.67-hour upset.

PROJECT TEXAS

Gasoline Alley

The rest of the country needs what Port Arthur makes. The neighbors live with the fallout

By Don Wall / WFAA
Click to watch video

Texas is home to America's largest oil refineries and chemical plants. While the state produces the energy the nation needs, it also produces more industrial pollution than any other state. One neighborhood, where Texas and Louisiana meet, pays the highest price.

In Port Arthur many live in the shadow of industrial pollution. Sometimes it can take your breath away.

People in West Port Arthur call it Gasoline Alley. The poor, rundown, forgotten community exists in the shadows of the nation's busiest and most productive oil refineries and petrochemical plants. They operate 24 hours a day, 365 days a year.

Every one of those days, ten-year-old Cullen Como gets a breathing treatment for asthma. The illness causes him to miss school often. His mother and sister also have trouble breathing. The family lives right across the street from the refineries. Cullen's sister, Kendra Prince, says, "I don't think anyone should have to live so close to these refineries. Because it's dangerous, and everybody around here is sick, everybody. It's just killing off people."

Cullen's mother, Shaza Prince laments, "I wish I had the money to move away. That's about it. I wish I'd never stayed in this place, period."

Scientists who study the impact of the environment on public health say West Port Arthur is one of America's sickest

Ten-year-old Cullen Como gets a breathing treatment for asthma. The illness causes him to miss school often. The family lives right across the street from the refineries.

Featured stories

- Introduction
- Gasoline Alley
- Pollution Police
- Grandfather Clause
- Animal Pollution
- Dangerous Drinking Water
- A Tale of Two Cars
- Fuel Cells
- Reducing Pollution
- Water Purification
- The Air We Breathe

Links

TNRCC: Air Pollution Trends in Texas http://www.tnrcc.state.tx.us /air/monops/poll:rend.html

TNRCC: Beaumont / Port Arthur Nonattainment Area http:// www.tnrcc.state.tx.us /air/aqp/ei/rsumbp.htm

communities. They blame the refineries. The plants emit a toxic soup of chemicals -- millions of pounds per year, according to the toxic release inventory compiled by the Environmental Protection Agency. These chemicals are known to cause cancer, affect brain functions, and hurt organ development and reproduction.

Environmentalist Denny Larson says, "Arguably, Port Arthur is probably one of the ten worst toxic hot spots in the country, and probably in the top five." Larson is lobbying Congress to raise awareness about refinery pollution. He has teamed up with local activist Hilton Kelley to form a local bucket brigade for Port Arthur.

Refinery Reform Campaign http://www.toxictwostep.org/

Port Arthur Blues: A native son returns to revitalize his pollution-plagued neighborhood http://www.refineryreform.org/downloads/News_TXOB_30102.pdf

Environmental Protection Agency http://www.epa.gov/

Sierra Club Lone Star Chapter http://texas.sierraclub.org/

Texas Environmental Profiles http://www.texasep.org

The bucket is a simple, but effective air sampler. It uses a plastic bag and vacuum pump. Air samples taken during toxic releases have shown unhealthy levels of hydrogen sulfide, benzene and other dangerous chemicals.

Hilton Kelley grew up here, moved away, and has now returned. He's on a crusade to empower local citizens to fight for their health. Kelley asked Anna Edwards, who suffers from breathing problems, how she reacts to the neighborhood atmosphere. "Like I panic," she replied, "and I can't catch enough air, and if I go outside, it's worse."

Kelly believes these problems are widespread. "Too many people are dying from cancer," he said. "Too many people have thyroid problems. We have two dialysis clinics in this small town, and it's time for the citizens to say, 'Enough is enough,' and it's time to do something about it. We want to work with industry. We want them to put the necessary controls on their stacks, put the necessary controls on their valves, so they will quit emitting so much fugitive emissions in the community."

Most people would say, "Not in my backyard," when it comes to the refineries. But the people who live in Gasoline Alley say they don't have a choice; they live and work here.

Some of them work inside the refineries, which produce the gasoline, fuel oil and industrial chemicals that power America. Industry officials say pollution controls have improved dramatically over the past twenty-five years. But in order to meet America's growing fuel needs, the refineries continue to expand. That means more emissions, more pollution coming into the neighborhoods."

Refinery manager Tom Purves chairs the Port Arthur Industrial and Community Advisory Group. He says the plants continue to reduce emissions as they address community concerns.

Asked whether nearby residents might live too close to the plants, Purves says, "It's not my place to say how close or not close they should live. Our main issue has been to try to educate folks in the community about our operations, and they need to make the decision for themselves if they are too close or not. Really, the reality is that education, and having folks understand that those of us who work here spend most of our day and a lot of our nights in these plants, and we feel like they are very safe places to work. And they

are also environmentally very good places to work."

But breathing the air inside the plants is not as dangerous as breathing the toxic fumes coming out of the stacks, according to scientists. A recent health survey done by University of Texas toxicologist Marvin Legator reported that 75 percent of the people from Port Arthur he questioned complained of headaches and muscle aches. Eighty percent of those questioned had heart conditions and respiratory problems. Another study showed that emergency room visits increase when there is a spill or unexpected release from the plants.

Glenn Alexander, a pediatric nurse practitioner, has been treating local children for ten years. His waiting room is nearly always full. He sees an unusually large number of upper respiratory infections, allergies and asthma.

"I'm not here to bad-mouth the refineries, or anything like that," Alexander explains, "because the refineries are what our livelihood here is. But I do see things because I am a health care provider. The air is not always clear here. Sometimes it's hard for them to breathe."

Alfred Dominic has an even tougher viewpoint. "Many of my friends have died of cancer, and many of them are sick at the present time, because of the emissions."

Dominic was born in Port Arthur in 1928. He believes people should have been moved away from refineries long ago. But there are no such plans. "It is apparent by living in close proximity that it is a genocidal effect, because you are not doing anything for those people, you're just doing one particular thing, putting them closer to the emissions and they are dying."

Refinery Manager Tom Purves counters, "We take the concerns of all of our community members very seriously. Our aim as an industrial advisory group is to educate the community on what we are really doing. I think that goes a long way towards allaying their fears. I think it makes us better neighbors and it makes them feel a lot better about living near us."

The refineries and the people of Gasoline Alley have been neighbors for decades. Activist Hilton Kelley sounded a warning cry. "We need to come together as a community at this time. We are at an epidemic proportion of infant mortality deaths here. We are at an epidemic rate of cancer here, and it's time that we stand up for ourselves and save ourselves."

While community relations are improving, public health is not.

Back

Port Arthur Odor/Symptom Logs

Date	Number of Logs
1/2/00	13
1/12/00	3
1/14/00	1
1/15/00	63
1/17/00	13
1/20/00	4
1/24/00	2
1/28/00	5
Mid Jan 00	77
Total	181
2/1/00	2
2/2/00	1
2/4/00	2
2/5/00	1
2/6/00	1
2/7/00	3
2/8/00	3
2/9/00	3
2/10/00	9
2/11/00	34
2/12/00	2
2/13/00	5
2/14/00	2
2/15/00	17
2/16/00	15
2/17/00	65
2/18/00	1
2/19/00	3
2/20/00	5
2/21/00	14
2/22/00	43
2/23/00	14

2/24/00	14
2/27/00	1
2/28/00	32
2/29/00	6
Total	298

Port Arthur Odor/Symptom Logs

Date	Number of Logs
3/1/00	4
3/2/00	1
3/3/00	1
3/13/00	7
3/23/00	3
3/30/00	1
3/31/00	2
Total	19
4/1/00	18
4/2/00	1
4/3/00	5
JANUARY, FEBRUARY & MARCH	9
JANUARY & FEBRUARY	16
FEBRUARY & MARCH	1
NO DATE	22
TOTAL	570

UPSET/MAINTENANCE CONDITIONS
REPORTED TO TNRCC IN FEBRUARY 2000

Emission	Hydrogen Sulfide	Sulfur Dioxide	Nitrogen Oxide	Carbon Monoxide	Particulates	Hydrocarbons	Fire Training	Benzene	Ethylbenzene
February									
1*		M	M	M		M	M		
2*	M	M	M,M	M,M		M,M	M		
3		M	M	M		M,M			
4*		M	M	M		M			
5*		M	M	M		M			
6*		M	M	M		M			
7*	C	M,C	M	M	C	M	M		
8*		M	M	M		M			
9*	M	M,M	M,M	M,M		M,M		H	
10*	M	M,M,F	M,M,M	M,M,M		M,M,M		H	
11*								H	
12*									
13*									
14*							M		
15*							M		
16*	M	M	M			M	M		
17*	M	M	M		CW	M			
18*		M	M						
19*									H
20*									

* ODOR/SYMPTOM LOG SUBMITTED

C - CLARK
M - MOTIVA
H - HUNTSMAN
F - FINA

UPSET/MAINTENANCE CONDITIONS
REPORTED TO TNRCC IN FEBRUARY 2000

Hydrogen Sulfide Emission	Sulfur Dioxide	Nitrogen Oxide	Carbon Monoxide	Particulates	Hydrocarbons	Fire Training	Benzene	Ethylbenzene
February								
21*							M	
22*								
23*								
24*								
25								
26								
27*								
28*		M	M	M	M		M	
29*		M	M	M	M			

* ODOR/SYMPTOM LOG SUBMITTED

C - CLARK
M - MOTIVA
H - HUNTSMAN
F - FINA
CW - CHEM WASTE

PORT ARTHUR FACILITIES NOTIFICATIONS TO TNRCC OF MAJOR UPSET/MAINTENANCE
JANUARY & FEBRUARY 2000

Clark Refining & Marketing Inc.

6 Notifications to TNRCC
January 7, 8, 11, 12*, 18, 19, 20*, 21, 22, 23, 24, 25, 26, 27, 28*

February 7*

Huntsman Petrochemical Corp.

4 Notifications to TNRCC
January 15*, 26
February 9*, 10*, 11*, 18*, 19*

Motiva Enterprises

13 Notifications to TNRCC

January 12*, 21, 22, 23, 24*, 25, 26, 27, 28*, 29, 30, 31

February 1*, 2*, 3, 4*, 5*, 6*, 7*, 8*, 9*, 10*, 14*, 15*, 16*, 17*, 18*, 21*, 22*, 27*, 28*, 29*

Chevron

0 Notifications to TNRCC

* Odor/Symptom Log Submitted

	A	B	C	D	E	F	G	H	I	J	K	L
1	Date					Symptoms						
2												
3	January 2000		1	2	3	4	5	6	7	8	9	10
4	2											
5	12											
6	14											
7	15											
8	17											
9	20											
10	24											
11	28											
12	Middle of January											
13												
14	February 2000											
15	1											
16	2											
17	4											
18	5											
19	6											
20	7											
21	8											
22	9											
23	10											
24	11											
25	12											
26	13											
27	14											
28	15											
29	16											
30	17											
31	18											
32	19											
33	20											
34	21											
35	22											
36	23											
37	24											
38	27		No symptoms reported									
39	28											
40	29											
41												
42	Date					Symptoms						
43												
44	March 2000		1	2	3	4	5	6	7	8	9	10
45	1											
46	2											
47	3											
48	13											
49	23											
50	30											
51	31											
52												
53	April, 2000											
54	1											
55	2											
56	3											

Port Arthur Blues

A Native Son Returns to Revitalize His Pollution-Plagued Neighborhood

The Texas Observer
Feature: 3 1/2002

BY MICHAEL MAY

After 20 years in Oakland, California, Hilton Kelley returned home to Port Arthur two years ago. He purchased a small house in his old neighborhood, the Westside, smack against the fenceline of the Premcor oil refinery, an industrial monstrosity of spherical tanks and smoking concrete spires that dwarfs the ranch-style dwellings only a few hundred yards away. Two other refineries encircle the Westside and several times a month one or the other erupts like an industrial Vesuvius, shooting flames high into the sky, jolting Kelley awake, forcing him to gasp for breath, as the whole house shakes. These are "upsets," unplanned releases that are part of a steady stream of toxic air pollutants emitted not only from the towering smokestacks, but also from thousands of flanges and gaskets at ground level. Not surprisingly, most residents just want to escape the Westside and the toxic fumes that seem to spread sickness in their wake. Kelley knew all this before he came back, and indeed, an asthmatic cough that never bothered him in Oakland has returned. Yet the 41-year-old native chose to live here, among neighbors too poor or old to leave.

His new house is in need of work, but Kelley, who owns a construction company, can easily fix the rotting foundation and peeling paint. A more daunting task is his goal of building a solid foundation for social change in the neighborhood. When he left in 1980, this was a thriving black community, full of locally-owned stores, restaurants, and nightclubs. Now, much of the business on the Westside is conducted after hours by groups of teenagers selling drugs on dark street corners. Most legitimate commerce in Port Arthur fled to malls alongside the highway, leaving an urban core where abandoned lots predominate.

Kelley was lucky to escape, but he didn't leave willingly. Tragedy forced him out. In 1979, then a 19-year-old college student with no plans of going anywhere, he arrived home one night with his brother to find their mother lying in bed, bleeding from a gunshot wound to the head. It was clear to them that their stepfather, who later pulled a gun on Kelley, had committed the crime, but the police never bothered to question the boys. No one was ever charged with the murder. "It was a black-on-black crime," Kelley offers in explanation. He left Port Arthur within a few months of her death, and quickly joined the Navy. He worked as an electrician in the service, and then juggled two careers as an actor and small business owner in the Bay Area. Despite achieving a small degree of prosperity, he never stopped thinking about the Westside. "Every time I came home to visit, the neighborhood looked worse and worse," he recalls. "And another young person I knew was in jail. It started to keep me up at night. I thought about it and figured that someone has to do something, and it might as well be me. So I came back."

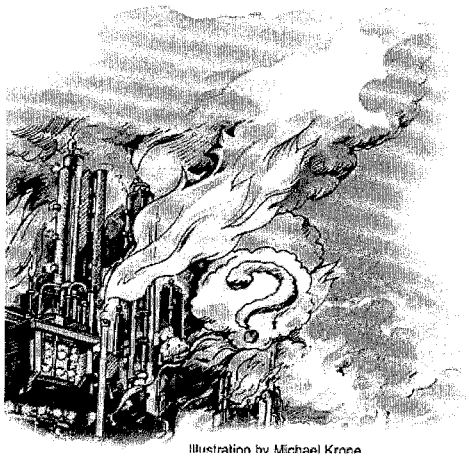


Illustration by Michael Kroge

Kelley is walking on Texas Avenue, once the bustling heart of the Westside. These days it's nothing but a concrete desert, with a bar and liquor store for the lost and thirsty. He strides purposefully through this wasteland, a black leather jacket draped over broad shoulders. His shaved head is uncovered. He talks with a deep, resonant voice, his words well-practiced and full of conviction.

Arriving at his destination, what appears to be a vacant building, he stops and opens

the door. Inside group of kids in karate uniforms, led by Kelley's younger brother, Warren, practice their moves. Kick. Exhale. Kick. Exhale. This is a community center that Kelley opened a year ago. "When I first got here, I was entirely focused on opening the center," Kelley says. "I figured the most important thing was for kids to have an alternative to the streets."

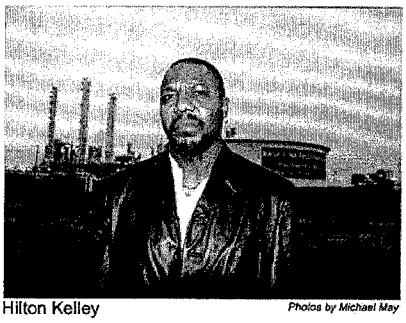
He quickly realized there wasn't going to be much of a community left to save without confronting the pollution problem. This is a difficult task in an area struggling with high unemployment and a political system that has favored industrial development over people for more than half a century. Most activists in Port Arthur are passive in the face of these obstacles. Others have grown so full of rage at the injustice around them that their confrontational style has alienated potential allies.

While Kelley does not retreat from confrontation, he is seeking a third way. For example, he urges people at the center to contact the Texas Natural Resource Conservation Commission (TNRCC) whenever they notice a smell like rotten eggs or paint thinner. Since the TNRCC can't afford to monitor the air at all times, Kelley believes the more complaints they receive, the more likely they are to enforce the law. "I am not trying to put the refineries out of business," he says. "We need oil. But oil can be processed more cleanly and efficiently."

At times, air pollution regulation in the Lone Star state can seem like a Texas two-step: Industry takes a step back with its right foot, while leading with its left. The Texas Legislature has finally closed the infamous "grandfather" loophole that allowed refineries and power plants built before 1971 to avoid federal clean air standards. But George W. Bush, who left the loophole open when he was Governor, is pushing to weaken the federal laws that govern grandfathered facilities. And in 2001, just as the EPA was on the verge of forcing Texas to make significant reductions in the levels of ozone in the Beaumont/Port Arthur area or lose federal highway funds, the TNRCC saved industry by insisting that ozone drift from Houston is partly to blame. The EPA agreed, and excused Beaumont/Port Arthur from further regulation until 2007. One step forward. One step back.

Kelley takes a visitor to Carver Terrace, the housing project where he grew up. Carver Terrace could be mistaken for part of the Premcor refinery yard:its neat rows of standard-issue brick townhouses are surrounded on three sides by the complex. One side was, until recently, home to a "tank farm," where crude oil, jet fuel, and other petroleum by-products sat in rows of squat holding tanks waiting to be transported. A recent court ruling forced the refinery to move the tanks away from the neighborhood, and the field now sits barren and quarantined, with crop circle-like markings where the tanks once sat. On the other side of the field is Lincoln High School. "When I was growing up, the school band used to practice right there," Kelley says, pointing to a grassy area adjacent to the former tank farm. "It's a good thing there was never any accident, because the whole school and housing project could have been incinerated. We would smell the sour odor wafting from the tanks, but my ma would just tell us, "'That's the smell of people making money,' We never even thought it could have an effect on our lives."

Hydrogen sulfide smells like rotten eggs. Sulfur dioxide smells like a burnt match. Benzene, a carcinogen, smells like paint thinner. Through the years, Kelley and his neighbors breathed a spectrum of foul fumes, the toxic bouquet ranging from rotten to acrid, until many simply became immune to the odors. That didn't mean their bodies escaped the effects. A recently completed health survey of Carver Terrace residents by Dr. Marvin Legator, professor of environmental toxicology at the University of Texas Medical Branch at Galveston shows the effect of the fumes on the community's health. Residents of Carver Terrace, and a separate sample from a housing project in Beaumont, were asked about symptoms of 12 diseases, and their answers were compared to a control group in Galveston. "Without question," says Legator, "the people in Beaumont and Port Arthur are suffering from many more health problems, especially neurological and respiratory diseases, than those in Galveston. The concentration of heavy industry there is having an enormous impact on their lives, and this study proves that to be the case."



Hilton Kelley *Photos by Michael May*

Kelley stops at the apartment of his girlfriend, Darlene Ford, for lunch. She moves purposefully around the kitchen fixing the meal, while her five-year-old daughter, Shay, plays nearby. After lunch, Ford comes into the living room carrying a jumble of bottles, tubes, and pill containers which she spreads out over a coffee table. All of these medicines, she explains, are what it takes for Shay to cope with the air in Port Arthur. "This cream is for rashes, this is for nausea, this is for nose bleeds, this is for cough and congestion," Ford lists. "The doctor told me that this is too much medicine for her to take just to stay in this town. I am not financially able to leave right now, but as soon as I can, I am moving far away from the refineries."

She sighs, holds Shay close, and adds: "Somewhere without pollution."

Even though Shay's situation is not uncommon, it can be difficult to find people in Port Arthur willing to stand up to the refineries. That's because there is a fear, perhaps justified, that resistance will cost a family member a good paying job. With unemployment in Port Arthur at 14 percent, few are willing to risk losing a breadwinner. Kelley thinks he has a distinct advantage. "I'm entirely self-employed, and doing fine. So I am immune to the pressure most folks around here face," he believes.

In some ways, though, it is the perfect time to inspire people to fight pollution. With unemployment as high as it is, residents are losing faith in the long-held belief that industry is good for the local economy, no matter what. Michael Sinegal, a high school teacher in the Westside, comes from a family of refinery workers. His father worked at one until he died an early death from asbestos poisoning. A brother still works there. Sinegal says what frustrates him the most is that some refineries are excused from paying a large portion of their taxes in return for jobs, which, he says, never appear. "These days, the Westside is like a strip mine for the refineries," he says. "They just take and take, and don't give anything back. We breathe the poisonous air, and can't even afford to put our kids through college. I spend thousands of dollars on asthma medication for my son, and, right across the fence, the refinery that caused his problems isn't even paying their full taxes. It's like they're robbing us."

Kelley's activism often takes him to city hall, where he lobbies the city council and the mayor, Oscar Ortiz, on behalf of the Westside. Has Ortiz been sympathetic to such concerns? Kelley smiles, mutters something polite about "mutual respect," and says ask the mayor.

ayor Ortiz sits at a large polished desk at the end of a long empty room. His face is deeply lined and topped by graying black hair swept to the back. He speaks with a trace of a Texas twang in a practiced tone of dispassionate reassurance. Ortiz is Port Arthur's first Hispanic mayor, but his only true allegiance seems to be to pragmatism. Although he is a Democrat, he voted for George W. Bush for governor and president. In the time it takes to walk across the room, he is on the phone finding the exact percentage of the tax base the refineries contribute to the town‹64 percent. The petrochemical companies pay for most of the city's services, he relates dutifully.

Ortiz doesn't see a problem with being out of compliance with ozone standards. It would only be an issue if the air got so bad that refineries were forced to stop expansion. "Then we would be in serious trouble," he says. "Our economy would suffer immensely."

"I tell people, if you want jobs, you have to put up with pollution," he continues expansively. "If we had pollution that was harmful to the human body, the EPA and the TNRCC wouldn't allow them to keep expanding. You know, there is pollution from everything‹people burning grass‹everything. I am not going to sit here and blame the refineries."

Ortiz explains that Port Arthur's high unemployment rate is not the fault of the refineries‹nor apparently does the blame rest with his administration. He says that refineries promise to hire locals, but that the city lacks an adequate pool of applicants. "There are three reasons that the labor hasn't been provided," he

Darlene Ford and her daughter Shay

explains in a resigned tone. "Our people can't pass drug tests. They don't have a college degree. They don't have skills. It's kind of hard to hire drug addicts without skills.

"You have to want to achieve something in life and become an asset, not a burden, to society," he continues. "We encourage people to get their GED, to go into drug rehabilitation. But as the old saying goes, Œyou can bring a horse to water, but you can't make him drink.' We have 14 percent unemployment, which is ridiculous for our city. It shows me that our people aren't ready for the job opportunities, and that is kind of sad."

Kelley scrunches up his face when he hears what the mayor said. "Everyone in the Westside is a drug addict? Come on," he counters. "And as for advanced training, tell me, whatever happened to OJT‹On the Job Training?"

Kelley's house, with the kitchen and back room blocked off for repair, feels more like an outpost than a home, and in some ways, that is exactly what it is. Kelley keeps a video camera and air sampling device on hand at all times to record releases which occur at the refineries. He picks up the camera and presses play. Inside the viewfinder, a roaring smokestack sends a bright flame and thick plume of black smoke pouring across a clear blue sky. He presses fast forward, the flame flickers and dances as the time marker moves from minutes into hours.

Daytime releases are uncommon, he says. At night, when the TNRCC office isn't open is when they most often occur. It is not unusual for the lawn to be covered with soot in the morning. "Last August, a valve blew open and a particularly noxious smell wafted through the neighborhood," he recalls. "I got really sick. I felt a cool sensation deep in my lungs, like breathing ammonia. My heart rate kicked up. I broke out in chills. I went to the hospital, but they are largely funded by the refineries and they just told me it was something I ate."

Texas law is not at all ambiguous about air pollution standards. The law not only specifies that every state citizen is entitled to air that will not "adversely affect human health," but allows for the "aesthetic enjoyment of air resources" as well. It would seem, then, that causing serious harm to Port Arthur residents by enveloping them in stinky, toxic air would be against the law. But, alas, it is not so simple. Texas law is interpreted through the TNRCC's general air quality rules, which, critics contend, are riddled with loopholes.

The largest loophole is the upset clause. Ostensibly, refineries must methodically quantify and control all emissions. However, petrochemical facilities are allowed an unlimited number of "upsets," which, in theory, are unplanned releases of pent-up pressure that, if left unchecked, could result in devastating explosions. These are allowable as long as the facility makes a report within 24 hours. Such accidents are assumed to be a rare phenomenon; if they occur regularly, the refineries are theoretically required to fix the problem.

In reality, these toxic eruptions have become an integral part of doing business. Refineries and adjacent chemical plants use the upset clause to dispose of badly mixed batches of chemicals (instead of investing in the means to recycle them). This practice is so commonplace that one refinery worker described burning bad product as a matter of protocol. "We have to enter in all the data for a particular mixture," said a Mobil worker who asked that his name not be mentioned for fear of retaliation. "After it's all mixed up, we take a sample. If it's not perfect then‹whoosh‹we send that whole brew of chemicals right up the stack to burn off. Happens all the time."

The chemicals are burned at the top of tall smokestacks, with a pilot light just like a stove, and they produce an open flame called a flare. In theory, all of the toxic gases are thoroughly incinerated and converted into carbon dioxide and water vapor. However, the material is rarely burned properly, contends Neil Carman, clean-air program director of the Lone Star Chapter of the Sierra Club. "If you see a column of black smoke rising hundreds of feet from a flare," says Carman, "that is not a clean burn. Those chemicals are escaping into the atmosphere intact. If there is no wind blowing, the gases can sink right down onto the neighborhoods to be inhaled."

In January 2000, Wilma Subra, a MacArthur "genius" award-winning chemist came to Port Arthur to document the health effects of upsets. Before Subra's visit, it had been easy for individual plants to raise doubts about whether the releases that made people sick were really from their stacks, or from some other complex (or all the way from Houston). Subra asked the community to keep logs of when they experienced certain symptoms and smells, and matched them with the chemicals that industry admitted releasing to the TNRCC. She proved that the chemicals being released could be linked to symptoms and odors that people nearby were experiencing.

Subra also armed residents with bucket samplers, devices that trap air inside a sterile container to be analyzed later at her lab. The bucket samples provided a chemical fingerprint that pointed to the guilty party (certain facilities produce certain chemicals), and showed that air quality standards were being exceeded at ground level. "This is the first time communities have been able to take a simple snapshot of what goes into their lungs," says Denny Larson, refinery reform coordinator of the Sustainable Energy and Economic Development Coalition (SEED), an Austin-based group that works closely with Kelley. "With just a few samples we can collapse the house of cards erected by industry that the air is safe to breathe."

In 2000, thanks to a bill passed by the Legislature, the TNRCC initiated a program to reduce upsets. While some accidents are unavoidable, new TNRCC regulations force companies to prove releases were not preventable, and, if so, how they will fix the problem. The new law also requires TNRCC to consider‹for the first time‹a company's compliance history when granting new permits. "We are putting a lot of pressure on facilities that have repeated upsets," insists Virgil Fernandez, a spokesperson for the TNRCC. "We are sending out investigators to make sure the necessary maintenance is completed."

There is one drawback to increasing the punishment‹it might simply minimize reporting. In the past, the TNRCC has relied on the good faith of the plant managers to report releases accurately. In practice, some have done so, and many have not. It is particularly hard to tell what actually went into the air, because, previously, the TNRCC did not require managers to provide accurate measurements of what the flare burned‹making it impossible to know whether the chemicals were pumped into the air for a few minutes or a few hours. New reporting rules changed this, but refineries still may simply decide not to report upsets since the possibility of getting caught is slim.

A TNRCC employee reached by phone whispered conspiratorially from his cubicle that he had examined the data from a number of facilities that purported to have clean records. "They just weren't reporting them," he claimed, and then begged for anonymity. However, this same employee was optimistic that the new laws will change the culture at TNRCC. "Upsets are finally being prioritized by the top brass here, which will at last allow us to do our job," he said.

The Subra study helped focus the community's attention on the pollution issue, but it also provided Kelley with a challenge. While MODEL, the community group that had brought Subra to Port Arthur, advocated a conciliatory approach, others were angrier than ever. "I really didn't know who to lean on," Kelley recalls. "There is so much tension between different activists. I finally decided I had to do things on my own."

The divisions emerged after a meeting MODEL held to release the findings of the Subra study. The meeting was designed to spark a dialogue between the community and industry, which, it was presumed, would no longer be able to deny that their emissions were a problem. But after the initial meeting, the petrochemical facilities declined to negotiate directly with MODEL. Instead, they decided to form their own organization and invited select community members to join. The group, officially known as the Port Arthur Industry and Community Leaders Advisory Group, has now been meeting for more than a year, presumably ushering in a new era of cooperation.

Sue Parsley, Public Affairs Manager at the Motiva refinery and member of the advisory group, thinks this is the case. Over the phone, she maintains the cheerful optimism that is the hallmark of her profession. She lists all the wonderful things that industry and the community can accomplish by working together: improve the schools, set up an emergency line to warn about industrial accidents and bad weather, etc. She fails to mention emissions or unplanned releases. When pressed, Parsley tersely says that they have always done their best to control pollution. "We are preparing a presentation, so we can show how our technology is, and has been, state of the art," she says.

Kelley was working with MODEL when he first arrived in town, but in time, he came to believe industry had gotten the better of the group. "The folks at MODEL have done a lot for the community," he says. "But, lately, they seem satisfied just to be sitting across the table from industry. I don't believe that's going to change anything. The only thing that will make them change is legal action."

Others agree. In Corpus Christi, for example, a group of residents has filed a class action suit against Valero Energy Corporation over upset emissions. After hundreds of hours of research, the group's lawyers were able to document that the refinery's upset emissions in 1995 were more than ten times larger than normal permitted emissions. (The company was never fined by the TNRCC for those upsets.)

Some in Port Arthur have lost faith in the system. One such industry critic is Reverend Roy Malveaux, who advocates a more drastic solution. "It is in everyone's best interest to create a mile and a half buffer zone around the refineries," says Malveaux. "It's good for industry, because they are free from liability from both emissions and accidents. It would provide more security if a terrorist decided to target a refinery. And it would finally put an end to the legacy of environmental racism we have here in Beaumont and Port Arthur."

Such a solution would mean moving entire neighborhoods at tremendous cost to industry. Although Kelley agrees that a buffer zone would be ideal (it has been done elsewhere), he thinks the simple enforcement of existing laws could also make a huge difference in people's lives.

n a narrow, barren room at the community center, Kelley outlines his plans. "I am going to set up a computer lab with Internet access in here," he says. And the kitchen, just a sink now, will one day be able to feed groups that come for training and educational seminars. Every month he turns the center over for long meetings about the pollution that plagues Port Arthur. In the days before the gatherings, Kelley takes a stack of flyers and stands in front of the local grocery store, hoping to find folks willing to help him document what upsets are doing to the community. Most seem interested, he says. And at each meeting, one or two new people participate. It's a start, albeit a slow one. Kelley hopes that with a little luck and a lot of activism, his story will become a trend, and others will return to Port Arthur. "I want to be right here when the businesses and families start coming back to the Westside," he says.

Michael May is a freelance writer living in Austin.

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Pollution Problems and TNRCC Enforcement Failures at the ExxonMobil Baytown Refinery

Overview of the Texas SEED Coalition Report on the ExxonMobil Baytown Refinery

Download the report overview as PDF for printing

This report is the first of its kind in the United States - an in-depth investigation of the operations of a single, massive refinery in Texas. Focused on the largest refinery in the United States (based on crude oil capacity) ExxonMobil's Baytown refinery, this analysis exposes how Texas industrial polluters can repeatedly flaunt the law, contaminate the air and threaten public health, while the Texas Natural Resource Conservation Commission sits back and lets them do it.

This study examines the dirtiest plant in Harris County, which is the center of the Houston, Texas area - the worst ozone non-attainment area in the United States. The region is currently struggling to develop a plan to meet national air quality standards for hourly ozone.

This struggle is particularly significant in light of the gross enforcement failures at the ExxonMobil plant. Many of these enforcement failures can be traced back to the Bush Administration - including the administration's work to relax permitting requirements and promote voluntary compliance efforts.

The study is also significant because refineries are enormous sources of air toxics and fine particulates. It should also be pointed out that ExxonMobil is party to a lawsuit opposing the current air plan for Texas and is seeking a weakening of the clean air plan.

The study finds a number of serious problems both with refinery operations as well as the failure of the state environmental agency, the Texas Natural Resource Conservation Commission (TNRCC) to adequately monitor operations and enforce existing laws.

As the study is a highly technical one, this overview has been developed to help readers digest the information contained therein. This overview divides the report into several sections - context of study, problems at ExxonMobil Baytown, problems with TNRCC enforcement, and problems with EPA enforcement. Each statement includes a page reference so the reader can refer to the original report for more detail.

Context of Study

- ExxonMobil Baytown Refinery ("the refinery") is the largest refinery in the United States.
- The refinery is the largest source of smog-precursors nitrogen oxides and volatile organic compounds in Harris county. (p. 3)
- The refinery is the largest source of sulfur dioxide and particulate matter in Harris County. (p. 3)

- The refinery is located to the east of Houston, a location that allows afternoon breezes to send the plant's emissions directly into central locations of high ozone potential and formation. (p. 3)

ExxonMobil Baytown Refinery problems

1. **Repeated and persistent accidental release (upset) and related problems**
   - In 1998, the plant released more sulfur dioxide during maintenance and upset events than it did for all its normal operations. (p. 19)
   - Last year was the worst for ExxonMobil's releases for upsets and maintenance in the last ten years. (p. 19)
   - From 1998-2000, 116 separate emissions episodes (upsets and maintenance related) came from just five processes - a very high number of incidents for so few sources. This is indicative of ongoing problems that the plant is failing to correct. (p. 20)
   - ExxonMobil repeatedly fails to maintain crucial backup equipment so it is available when needed and does not have backup equipment on processes where they should to avoid high emissions. (p. 28-31)
   - The record of upsets shows that ExxonMobil repeatedly fails to maintain process equipment, backup equipment, fails to test and inspect process integrity, or puts production on hold while key equipment is maintained. (p. 27)
   - Emissions from planned maintenance have exceeded emissions from upsets. This indicates that plant management is routinely failing to schedule and conduct maintenance properly. Work that is planned for should create fewer excess emissions than incidents that are unexpected. (p. 19)
   - Long periods of accidental releases, with some cases extending for weeks ata time. (p. 28)

2. **Failure to report problems and emissions**
   - In just the year 2000, nearly half of the plant's upset reports failed (in violation of TNRCC rules) to identify the equipment that had problems. (p. 21)
   - The company also frequently failed to identify how the pollution resulting from the accident was actually emitted to the atmosphere - key information for officials to know to understand how the plant may be affecting air quality and public health. (p. 21-22)
   - From 1998-2000, the plant also frequently neglected to submit "actual" emissions reports following the filing of a "potential" emissions report, which is a violation of TNRCC rules (but never enforced in ExxonMobil's case). (p. 23)
   - The company frequently fails to provide emissions calculations to justify its estimate of emissions releases during upset events. Thus, there is no way for the TNRCC to check whether or not these estimates are realistic. (p. 25)

3. **Under-estimation of problems and emissions**
   - The plant appears to be under-reporting its toxic emissions by not reporting to EPA all emissions it has told the TNRCC are emitted. (p. 13-14)
   - ExxonMobil appears to be failing to identify all of the specific chemicals found in the petroleum hydrocarbons that it is emitting to the air (p. 12-14)
   - The records indicate that ExxonMobil has an overwhelming tendency to revise its reports of upset emissions downward in subsequent reports to the TNRCC. (p. 24)
   - The company often underestimates emissions from leaks by limiting the time frame reported. For instance, emissions from leaks are reported as though pollution began to escape at the time the leak was noticed, as opposed to when the leak might actually have begun or from the time of the last inspection. (p. 25)
   - The plant incorrectly reported its upsets for hydrogen sulfide in 1999. (p. 19)
   - The plant follows inconsistent reporting protocols with flaring of VOCs. (p. 24-25)

4. **Failure to properly maintain emissions monitors**
   Three of ExxonMobil's Continuous Emissions Monitors were frequently off-line for months at a time, essentially obliterating the emissions records during these periods. (p. 42).

5. **Possible Violations of Federal Law on Reporting and Modifications**
   - The records indicate the plant has failed make Emergency Planning and Community Right to Know Act reports for several toxic compounds - including hydrogen cyanide, cresols and others. There is no way to understand the toxic effect of the refinery unless the company is clear on what toxicants it emits. (p. 12)

- ExxonMobil may have violated New Source Review requirements by making substantial investments in its carbon monoxide boilers without first obtaining a permit required by the Clean Air Act. (p. 47)

TNRCC problems

The record shows that the TNRCC's monitoring and enforcement at the plant is frequently superficial and undemanding of performance or compliance. Specifically,

1. **Failure to issue Notices of Violations when violations have occurred**
   - ExxonMobil violated 72 TNRCC rules from 1984 through the present, but the TNRCC only issued 6 legally binding orders to abate those violations and only imposed $64,000 in penalties in total over that period.
   - Despite dozens and dozens of events which could merit Notices of Violations and penalties for violations of the law, the TNRCC failed to act in most cases. These violations include actions that caused upsets that were avoidable, there were reporting violations, failure to properly report upsets, failures to identify the cause of upsets.
   - This failure to seek enforcement is especially startling in light of the fact that the same pieces of equipment consistently fail or have problems. (p. 20)
2. **Failure to pursue discrepancies or violations regarding improper reporting**
   - Despite the high number of upset reports which failed to specifically identify which equipment failed or where the emission occurred, there was not a single instance in which the record shows the TNRCC took action for this kind of defective reporting. (p. 23)
3. **Failure to use common sense procedures to enforce the law**
   - Despite a history of problems, the TNRCC gave the plant advance notice prior to conducting its annual inspection in 2000. (p. 37)
4. **Failure to conduct independent review of emissions and other reporting**
   - The TNRCC routinely accepts ExxonMobil's estimates of emissions incidents with no independent check or investigation. (p. 24). This is part of a pattern where the agency accepts ExxonMobil's word on an event, then writes in the report "no problems noted" for the plant.
   - Batches of reports have waited for months for review by the agency and then are signed in a single day, sometimes months after the events in question (p. 26).
   - Despite the fact that the ExxonMobil refinery is currently in violation of state and federal clean air laws, the TNRCC is moving forward with consideration of new construction permits for new operations - one to modify the coking process and another for a purpose which was not specified in the record. (p. 50)
5. **Failure to maintain complete and accurate records**
   - TNRCC data for 1990 and 1992 particulate emissions are missing. (p. 2)
   - TNRCC files on the plant do not appear to be complete. The Houston and Austin offices each contain records not found at the other, so a survey and compilation of records from both offices was necessary to achieve what could be considered a complete record. The local office is supposed to contain a complete record on the plant; citizens and public interest groups are not supposed to be required to travel back and forth to put together a complete record on their own. (p. 17)
   - The TNRCC's public information specialist in Austin provided incorrect assurances that the record in Austin is a complete record of compliance and enforcement. This was found to be extremely untrue when the files in Houston were compared to the Austin files. (Author communication)
6. **Failure to provide plans for improvement**
   - Despite repeated requests, the TNRCC did not provide ExxonMobil's plans to limit emissions from startups, shutdowns and malfunctions (p.26).

EPA Problems

- EPA's national web site on industrial emissions yields the wrong result on emissions for ExxonMobil's refinery. Data for 1996 emissions conflicts with the TNRCC's, which is supposed to be the primary source of the information. (p. 1)

About the Study

The study is based on an exhaustive analysis of tens of thousands of records on the plant found in the Houston and Austin offices of the TNRCC, as well as subsequent information requests and communications with the TNRCC and the Environmental Protection Agency (EPA). The study included an intensive review conducted for years 1995 through 20000 when records contain the most detail.

The study was conducted over a three month period from February through April of 2001, by Alex Sagady, Environmental Consultant.

Many thanks to Dr. Neil Carman of the Lone Star Chapter of the Sierra Club, for his thoughtful guidance, review and editing of this report and overivew.

The complete report is available from the SEED Coalition. Contact us at 512 479-7744 or download the report from **www.seedcoalition.org**.

Go back to ExxonMobil: Out of Control

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RESPONSE OF BY HILTON KELLEY TO ADDITIONAL QUESTION FROM SENATOR VOINOVICH

Question. Like you, I care deeply about the impact of these programs on disadvantaged people. As you may know, two researchers from the University of North Texas issued a report in May on "The EPA's Reinterpretation of New Source Review Rules: Implications for Economic Development in Rural America."

The report concludes that the changes in EPA's interpretation of NSR in 1998 have had a greater negative impact on rural America. Among their findings are:

• Population, job growth, and average earnings have all decreased in rural areas as compared to urban areas.

• While overall our Nation depends on coal for 55 percent of its electricity generation, electric cooperatives serving rural areas are 76 percent dependent on coal for electricity.

Businesses operating in non-metropolitan areas already spend more for electricity than businesses operating in metropolitan areas. As a representative of part of Appalachia, which is one of the most economically distressed areas in this country, I am concerned about how the study's findings apply to my region and to other portions of the country like Texas. Would you support any kind of reform to NSR to help these people?

Response. Pollution from power plants cuts short the lives of thousands of Americans every year, according to EPA studies through heart disease, lung cancer and other illnesses. In my out community of Port Arthur, Texas—where you won't find any of the industry's lawyers—I have seen first hand how the pollution from refineries and chemical plants has damaged the health of my neighbors, with high rates of cancer, asthma and other diseases. These illnesses hurt poorer people the most, since they are much less likely to have adequate health insurance or the money to afford long-term care. I do not understand why, in the richest society in history, we should ask low-income families to sacrifice their health to make a living.

Also, materials available on the Department of Energy's own website show that is a false choice. Apparently, last year was the biggest year ever for power plant expansion, and we have so many new plants that some of them are being canceled. In North Carolina, State law will require Duke Power to cut its emissions 70 percent in 10 years, with no increase in electric rates for consumers. That seems to fit with another study by the Department of Energy in 2000 (also on the website), which shows that requiring companies to put on modern pollution controls will not raise rates for consumers, because it will make it more economical to build plants that are not only cleaner, but much more efficient. And I don't understand how allowing old power plants to keep running without good pollution control equipment helps rural communities—doesn't that just discourage companies from replacing old plants with more modern (and cleaner) power plants that would bring construction and operating jobs to rural areas?

Refineries are experiencing record growth, and in Port Arthur the Premcor plant wants to grow to 475 million barrels a day, making it one of the largest in the world. And that's on top of the recent expansion of the BASF plant. Unfortunately, both these plants have plagued the community with high levels of pollution and a series of accidents. It doesn't seem unfair to ask companies to clean up their act, and not to expand in a way that makes the air even harder to breathe.

STATEMENT OF STEPHEN HARPER, DIRECTOR OF ENVIRONMENT, HEALTH, SAFETY AND ENERGY POLICY, INTEL CORPORATION

Thank you, Chairman Jeffords and Chairman Leahy, for the opportunity to address this joint hearing regarding New Source Review policy issues. My name is Stephen Harper. I serve as the director of Environment, Health, Safety, and Energy Policy for the Intel Corporation. I am here to address the committees today about one specific aspect of New Source Review (NSR), namely Plantwide Applicability Limit (PAL) permitting approaches. Intel has been part of an informal coalition of companies from the pharmaceutical, chemical, automotive, and electronics industries that have been advocating promulgation of a PAL rule by the U.S. Environmental Protection Agency (EPA) for several years now. Many of our coalition members have experience with PAL-type permits at their facilities and believe strongly that EPA should promulgate a PAL rule as a logical next step in a long process of piloting, perfecting, and proliferating flexible permitting approaches that protect the environment and provide operational flexibility to facilities.

Much effort has been expended over the last 10 years by industry, States, EPA, and the public—under both Democrat and Republican Administrations—to "reinvent" or innovate new approaches to environmental protection. Intel has partici-

pated in many of these efforts and is intimately familiar with the mixed result of successes and failures from these endeavors. We feel strongly that PAL-type permits are one of the most successful innovations to emerge from these many reinvention efforts. The time has come to build on this success and take PALs into the mainstream of NSR permitting.

SEMICONDUCTOR MANUFACTURING REQUIRES FLEXIBLE PERMITTING

Why does Intel care about PALs and other forms of flexible permitting under the Clean Air Act? In simplest terms because of the importance of operational flexibility in being able to innovate new products and processes and quickly respond to market conditions. As in many other industries, there are only two types of semiconductor companies—"the quick and the dead." We feel strongly, therefore, about being quick.

Intel operates 10 semiconductor "fabs" or fabrication facilities in the United States, producing Pentium® processors and other semiconductor products. These facilities employ many thousands of highly skilled US workers. The capital investment required to bring a new fab into full production is in the $2–3 billion range. The life-cycle of a semiconductor fab involves numerous upgrades and innovations in production technology, chemicals, and processes. A "typical" Intel fab, for example, experiences two or more technology generations over a 5-year period; as many as 75 upgrades and innovations each year in process steps, methods, and chemicals; and the installation of between 175 and 500 new process tools over a 2-year technology transition.

Once a fab has commenced production, profitability depends upon reaching and maintaining high levels of production as quickly as possible. Traditional air quality permitting approaches, under NSR and other EPA and State programs, would require potentially hundreds of permit revisions to implement the upgrades and innovations that are critical to successful startup and ramp-up of a fab. The potential delays attendant to such revisions are—simply put—incompatible with the profitable operation of U.S.-based semiconductor fab that must compete in a global marketplace where success hinges upon being quick-to-market. Traditional permitting approaches would require numerous permit modifications and threaten significant delays for companies like Intel as we install new manufacturing tools, convert to new manufacturing processes, change chemicals, and expand production capacity to respond to market conditions.

Driven by the incompatibility of traditional permitting approaches with semiconductor manufacturing requirements, Intel has long pursued an objective of minimizing our permitting burden. We have done this in two ways. The first is to reduce our emissions of all pollutants as much as we can so as to achieve "minor source" status under the Clean Air Act. The second priority has been to work with EPA and the States to pilot and prove new, innovative, and more flexible permitting approaches.

WHAT IS A PAL?

A PAL permit provides an emissions cap or caps for an industrial facility. The cap provides a clear method for determining whether changes at a PAL-covered facility trigger NSR permitting requirements. The need to obtain an NSR permit revision only applies when a facility's emissions increase beyond the PAL cap. In addition to the cap, a PAL or PAL-type permit typically specifies certain kinds of facility changes that are "pre-approved." A facility with a PAL can undertake a pre-approved change without becoming subject to NSR as long as the facility's emissions remain below the cap(s).

It is important to clarify the difference between a PAL permit under the NSR program and what I am terming a "PAL-type" permit. PALs per se relate only to facilities that qualify as "major" under the Clean Air Act by virtue of the magnitude of their emissions. I am using the term "PAL-type" permits to refer to minor source permits involving both an emissions cap and pre-approval of certain operational changes. As I will make clear shortly, Intel has experience with both types of permit.

WHAT ARE THE BENEFITS OF PAL-TYPE PERMITS?

There are three categories of benefits provided by PAL and PAL-type permits. Most importantly, PALs provide significant *environmental* benefits. PAL emissions caps provide certainty regarding the emissions impact of a facility. Moreover, since these emissions caps are set at levels that reflect the air quality improvement needs of an airshed, PAL caps typically entail emission reductions compared to traditional permitting approaches. Emissions caps, moreover, provide a very powerful incentive for pollution prevention. The only way a facility can increase its production and still

stay under its cap is to reduce its emissions per unit of production. PALs allow facility environmental engineers to spend less time dealing with the burdens of permitting paperwork and free them up to concentrate on reducing emissions through pollution prevention.

A second benefit PALs provide is *enhanced public participation*. Under traditional approaches, air quality permitting authorities notify the public of numerous changes, big or small, at facilities, providing opportunities for public input into whether or not permit modifications should be granted. At best, what the public sees in the traditional case is a series of incremental changes and piecemeal information about facility operations that provide little understanding regarding the overall impact of a facility on local air quality. Under a PAL, however, the public has the opportunity to be involved in the initial process of establishing the PAL permit and emissions caps. In this setting the public can gain a much better sense of the overall operations of a facility, the kinds of operational changes that are contemplated, and the likely air quality impacts of the facility over the term of the permit. The public has a much enhanced opportunity to view the facility holistically, rather than in a fragmented way.

A third type of PAL benefit accrues to the permitted facility in the form of *operational flexibility*. For major sources concerned about NSR applicability, PALs provide a "bright line" that eliminates ambiguity about whether or not operational changes trigger NSR requirements. PAL-type permits provide minor sources the same type of flexibility regarding State minor source NSR requirements.

INTEL'S EXPERIENCE WITH PAL-TYPE PERMITS

A major part of our corporate commitment to innovating new permitting approaches has involved partnership with EPA, the States, and members of the public to pilot the basic concepts underlying the PAL rule that EPA currently is finalizing. The first of these partnership commitments came in the 1992–1995 timeframe where Intel, EPA, and Oregon developed a PAL permit for Intel's Aloha, Oregon fab as part of EPA's "Pollution Prevention in Permitting Program" (P4). The second major partnership involved Intel, EPA, and Maricopa County, Arizona jointly undertaking one of the first pilot projects under EPA's "Project XL" program at its Ocotillo campus in Chandler, Arizona.

Intel's P4 permit was a PAL permit under the Federal NSR program because our Aloha fab was a major source at the time the permit was issued. Our XL permit for the Ocotillo fab is not, strictly speaking, a PAL, because that facility is a minor source under the Clean Air Act and, thus, no NSR "applicability" issues arose. Nonetheless, our Ocotillo permit functionally is the same as the Aloha permit and has provided another valid test of the emissions cap and pre-approved changes features of a PAL.

I previously described the environmental benefits of PAL permits. Let me now show how those benefits were realized in practice in our Oregon and Arizona pilot projects. The environmental benefits at our *Aloha, Oregon* fab are very dramatic. The attached *exhibit* provides a graphic demonstration of the powerful incentive PALs provide for aggressive pollution prevention programs. This chart shows facility VOC emissions per production unit and total production units. Motivated by the need to find room for growth under our PAL cap, our Aloha fab reduced emissions of VOCs by over 90 percent per unit of production since 1990. Some of this reduction occurred prior to 1995 under an Oregon PAL-like permitting program. Even more dramatic reductions occurred after our NSR PAL came into effect in 1995.

The combination of the pressure of an emissions cap and the operational flexibility under our Aloha PAL fueled an aggressive pollution prevention program. The success of that program allowed Intel to add an additional fab at our Aloha campus without the need to increase our cap. Indeed, we reduced overall VOC emissions and voluntarily lowered our VOC cap from 160 tons per year to 130 tons per year. This was done to support the successful efforts of Oregon and the Portland region to reduce overall regional emissions and qualify Portland for re-designation as an Ozone Attainment area in 1997. Intel's consistent reductions over time, combined with this area redesignation, allowed our Aloha fab to itself achieve minor source status under the Clean Air Act in 1999.

The environmental results under our PAL-type permit at our *Ocotillo* campus have been equally dramatic. Through our aggressive pollution prevention program, the Ocotillo facility—which sits on 720 acres, employs approximately 5,000 people, and produces a high volume of semiconductor devices—emits approximately 25 tons of VOCs annually. This emissions level is in the neighborhood of what several large gas stations would produce. Our emissions reductions at Ocotillo have been so dra-

matic that we have constructed and are now operating a second fab on this campus—all under the XL cap.

PALS ARE PROVEN AND READY FOR PRIME TIME

As I have shown, Intel's experience piloting PALs and PAL-type permits with EPA and State and local permitting authorities has been dramatically successful. Other companies that have worked with EPA and the States to test the PAL approach also can tell similar success stories. Several of the other companies in our informal "PAL coalition"—including DaimlerChrysler, DuPont, and Merck—have successfully piloted the PAL approach at one or more of their facilities. Other companies in other industries are applying the PAL approach as we meet today, including BMW, GM/Saturn, and several oil refineries. At this point, PALs have been demonstrated successfully in a number of very different industrial sectors.

Intel believes, as I mentioned at the outset of my testimony, that PALs are one of the most significant regulatory innovations to emerge from the last 10 years of regulatory reinvention activities at the Federal and State level. Indeed, PALs are an example of the right way for a regulatory agency like EPA to innovate. First you try some pilot projects. You evaluate your experience and, where success has been demonstrated, you build on that success by mainstreaming the innovation in your regulatory program.

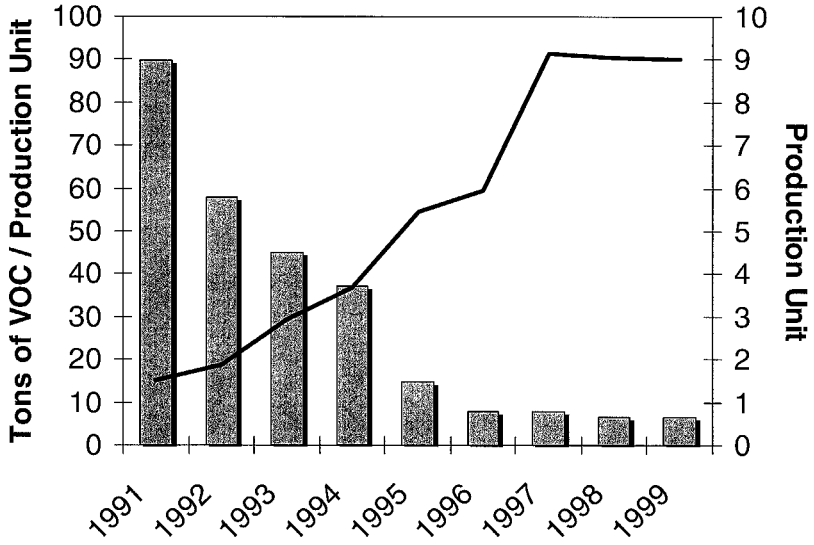
"Mainstreaming" the PAL success story will be aided greatly by EPA promulgation of practical PAL provisions either discretely or as part of a larger NSR rule. Regulatory action is not necessary as a legal matter. The successful PAL pilot projects at Intel and other companies have utilized existing legal authority. On the other hand, regulatory action by EPA will promote the PAL concept by providing greater guidance to permitting authorities and sources regarding the benefits of PALs and PAL-type approaches. With the promulgation of clear "rules of the road," sources and States will be better able to craft PAL permits that realize the environmental, public participation, and operational flexibility benefits I have cited.

In sum, Congress should be encouraging flexible permitting approaches like PALs. I will be glad to answer any questions the committee members might have.

EXHIBIT

INTEL ALOHA PAL

- 93% reduction in VOC emissions on a production basis
- 490% net increase in production



RESPONSES BY STEPHEN HARPER TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. How important is "operational flexibility" to a company that must compete in a global marketplace? Can you provide examples of how NSR has affected your company's ability to compete? What would be the economic impact and loss of jobs if Intel could no longer compete due to these cumbersome regulations?

Response. Operational flexibility is critical to the ability of Intel, and companies like Intel, in fast changing international markets, to compete. Traditional NSR permitting requires permit modifications for many of the hundreds of production changes Intel makes at each of its fabs during the several year cycle of a process or product generation. The application process alone can threaten delays that hinder the ability of a facility to respond to changes in market demand or install improvements that reduce cost or increase output. Intel has been able to avoid these effects of NSR because we have rigorously employed pollution prevention to become a Clean Air Act "minor" source at all of our facilities. Our interest is preventive: We seek to codify, as part of the Federal NSR program, the type of flexible plantwide applicability limit (PAL) permits we operate under through State minor source programs. We want to make sure that, should we become a major source at any of our sites—through growth and/or reclassification of an area under the Clean Air Act—we can continue to enjoy this type of flexibility under major source NSR. At the present time, PALs are legal under NSR, but clear "rules of the road" are necessary to make it easier for sources and States to know how best to craft major source PAL permits. The threat of becoming a major source, and not being able to enjoy PAL flexibility, would influence our future decisions re siting of new facilities here in the United States.

Question 2. In your testimony, you detail Intel's experience with PAL-type permits. What was the timeline and process that has led up to the Administration's announcement to finalize the PAL rule?

Response. I cannot speak definitively to the Administration's timeline. I can say only what I know from Intel's direct participation in a long multi-stakeholder process to reform NSR. What has become the current version of the PAL concept was proposed in EPA's 1996 NSR rulemaking. Although we have not seen the Administration's specific rulemaking language, we believe that everything the Administration currently seeks to finalize/propose with respect to PALs was foreshadowed in that proposal, or is a logical outgrowth of the 1996 proposal and the comments received on that proposal. Subsequent to the 1996 proposal, the Clinton EPA held a lengthy series of consultations, both formal and informal, with a wide variety of stakeholders to refine the PAL concept. Part of this early process included Intel's project piloting the PAL concept at our Ocotillo fab in Arizona, as part of the Administration's flagship reinvention effort, Project XL. The process picked up in February 1999, when EPA held a formal NSR reform workshop in Washington, where PALs and many other NSR reform ideas were discussed. Following that workshop, and leading right up to the final days of the Clinton Administration, numerous more informal meetings were held by EPA with various stakeholders to discuss PALs. In sum, the process was extensive and deliberative. Upon leaving office, Assistant Administrator Perciasepe recommended to the incoming Bush Administration taking action to finalize PALs among other NSR reforms.

STATEMENT OF JOHN D. WALKE, DIRECTOR, CLEAN AIR PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL

I. INTRODUCTION

I would like to thank the chairmen of these committees for inviting me to testify on behalf of NRDC's 500,000 members. As an organization dedicated to safeguarding public health and the natural environment, NRDC has for over 30 years promoted actions to implement the Clean Air Act. For just as long, NRDC has opposed efforts to turn the government away from fulfilling Congress's commitment to protect Americans from harmful air pollution.

The chairmen have convened these hearings to investigate the changes that the Environmental Protection Agency has announced it will make to the regulations that implement the Clean Air Act. This investigation will reveal that the attempted changes represent the most sweeping and aggressive attack that the Clean Air Act has faced in its thirty-year history. Through the mechanism of administrative rulemaking, EPA is attempting, in effect, to repeal an act of Congress. These changes are not only unlawful, but also deadly. They will result in tens of thousands of pre-

mature deaths, asthma attacks, and hospitalizations that would have been prevented had EPA elected to obey the law rather than break it.

This testimony will summarize the data that the public health community has presented to EPA showing that the impending rollbacks will result in illness and death on a massive scale. The agency has not even attempted to rebut this evidence; its staff has performed no analysis of the impact that the announced changes will have on air quality and public health. But EPA is going forward with the changes anyway.

Why is EPA doing this? The agency's top officials admit that it is making these changes because industry has called for them. The owners of the country's dirtiest power plants claim that the portion of the Clean Air Act known as New Source Review prevents them from undertaking routine maintenance at their plants and from upgrading their facilities to generate more electricity with less fuel. But when asked for facts showing that the operation of New Source Review has had this negative effect, industry offers only undocumented anecdotes and sketchy hypotheticals. This testimony will summarize the evidence demonstrating that the New Source Review provisions of the Clean Air Act do not hinder industry from carrying out routine maintenance or from meeting the country's energy needs. The only thing New Source Review prevents a company from doing is evading its duty to install pollution controls when it modifies its plants in ways that increase pollution. The nation's worst polluters resent the lawsuits that the Federal Government and the States have brought to enforce this statutory obligation, so they have instructed the current Administration to eliminate it.

EPA has blindly adopted the polluters' self-serving, unsubstantiated claims about New Source Review and initiated an unprecedented rollback without any analysis of the public health impacts. Because the rollback will violate an act of Congress and adversely impact the health of tens of thousands of Americans, I ask that these committees do everything in their power to prevent the changes from taking effect.

II. BACKGROUND

A. What NSR Is[1]

In 1970, Congress amended the Clean Air Act to require that new industrial sources of air pollution be built with state-of-the-art pollution controls.[2] The amendments did not require existing sources to install modern controls immediately. Instead, they required existing plants to install controls when and if the sources underwent modification.[3] Congress believed that the most efficient time to retrofit a facility was when the plant was already undergoing construction activity,[4] and it assumed that many existing sources would soon be retired and replaced anyway.[5]

The 1970 amendments failed to achieve the Act's goal of healthy air in all areas of the country by 1975. In response to this failure, Congress passed a new set of amendments in 1977.[6] These amendments established the New Source Review ("NSR") program, which requires a preconstruction review and the issuance of a permit for the construction of any new "major emitting facility," or the modification of any existing facility.[7] The program is designed to prevent modified or new facilities from causing increased emissions that could cause or contribute to violations of applicable air quality standards.[8] Before a company can receive a permit to commence "construction," it must show that the proposed project would not result in the violation of an air quality standard or any other applicable limit in any local or downwind area, and that the resulting facility would be "subject to the best available con-

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[1] The description of the New Source Review program provided in this section derives largely from the U.S. Department of Justice's January 2002 report entitled "New Source Review: An Analysis of the Consistency of Enforcement Actions with the Clean Air Act and Implementing Regulations" ("OLP Report").

[2] See Pub. L. No. 91–604, 84 Stat. 1676, Section 111 (codified at 42 U.S.C. § 7411).

[3] See id., Section 111(a)(2) (codified at 42 U.S.C. § 7411(a)(2)).

[4] See H.R. Rep. No. 95–294, at 185–86 (1977), reprinted in 1977 U.S.C.C.A.N. 1077, 1264–65 ("Building control technology into new plants at time of construction will plainly be less costly than requiring retrofit when pollution ceilings are reached."). See also *Wisconsin Electric Power Co.* v. *Reilly* ("WEPCO"), 893 F.2d 901, 909 (7th Cir. 1990) (finding that the purpose of the "modification" rule is to ensure that pollution control measures are undertaken when they can be most effective, at the time of new or modified construction).

[5] See H.R. Rep. No. 95–294, at 186 ("For some of the older and smaller sources, it is not physically or economically feasible to retrofit sulfur oxide control technology.").

[6] Pub. L. No. 95–95, 91 Stat. 685 (codified at 42 U.S.C. §§ 7401–7642).

[7] See 42 U.S.C. §§ 7475, 7501–7503.

[8] See id. § 7470(5).

trol technology for each pollutant subject to regulation under this chapter emitted from, or which results from, such facility."[9]

The Act defines "construction" to include "modification."[10] The term "modification" is in turn defined as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted."[11] The statute does not further limit the definition of "modification"; however, EPA regulations promulgated after 1977 exclude "routine maintenance, repair, and replacement" from the term's scope.[12]

Industry representatives often complain of difficulty determining what kinds of activity qualify as "routine." Although EPA has issued guidance in the form of individual applicability determinations, it has not promulgated any regulations specifying what types of projects are always "routine" and thus exempt from New Source Review. In evaluating industry's complaints about lack of clarity, it is important to keep in mind the fact that, as early as 1994, EPA staff circulated draft regulatory language that would have equated "routine" with "minor."[13] The draft stated that "routine activities would generally include . . . minor maintenance or repair of parts or components and the replacement of minor parts or components with identical or functionally equivalent items."[14] In response to industry comments, including a recommendation that "routine" be defined as "undertaken in an industrial category,"[15] EPA abandoned the effort to craft a regulatory definition of the term.

EPA thus continues to determine what is "routine" on a case-by-case basis. In making these determinations, the agency weighs several factors, including "the nature, extent, purpose, frequency and cost of the work."[16]

The U.S. Court of Appeals for the D.C. Circuit has observed that "[i]mplementation of the statute's definition of "modification" will undoubtedly prove inconvenient and costly to affected industries." The court nevertheless held that "the clear language of the statute unavoidably imposes these costs except for *de minimis* increases." While "[t]he statutory scheme intends to 'grandfather' existing industries[,] the provisions concerning modifications indicate that this is not to constitute perpetual immunity . . . ."[17]

B. The History of NSR Enforcement

The regulations implementing the 1977 New Source Review provisions were not fully in effect until the early 1980's, after several rounds of judicial review and repromulgation. Thereafter followed a period, coinciding with the Reagan Administration, in which EPA did little enforcement of any kind. During this period of nonenforcement, the utility industry essentially ignored the New Source Review requirements.

One company, Wisconsin Electric Power ("WEPCO"), did approach EPA in 1988 to ask whether the construction planned at one of its coal-fired power plants could be considered "routine maintenance, repair, and replacement." WEPCO wanted to undertake renovations so that its plant could operate beyond its planned retirement date of 1992. To that end, the company wanted to repair or replace the turbine-generators, boilers, rear steam drums, air heaters, mechanical and electrical auxiliaries, and common plant support facilities. These refurbishments would require the company to take various units of the plant out of service for 9 months.[18]

When EPA told WEPCO that the planned renovations could not be considered routine, the company petitioned for review by the U.S. Court of Appeals for the Seventh Circuit. In court, WEPCO argued that "Congress did not intend for simple

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[9] Id. § 7475(a).

[10] Id. § 7479(2)(C).

[11] Id. § 7411(a)(4). In the words of Senator Edmund Muskie, one of the principal supporters of the 1977 amendments, "A source . . . is subject to all the nonattainment requirements as a modified source if it makes any physical change which increases the amount of any air pollutant . . . ." 123 Cong. Rec. 26,847 (1977).

[12] 40 C.F.R. §§ 51.166(b)(2)(I); 52.21(b)(2)(iii)(a); 52.24(f)(5)(iii)(a); 60.14(e)(1).

[13] See New Source Review Reform 106–09 (EPA, Preliminary Staff Draft 1994).

[14] Id.

[15] Letter from Mary Nichols to Bill Lewis, May 30, 1995, at 19.

[16] WEPCO, 893 F.2d at 910.

[17] Alabama Power Co. v. *Costle*, 636 F.2d 323, 400 (D.C. Cir. 1980). See also Legislative History of the Clean Air Act Amendments of 1990, 6675–76, Senate Debate on S. 1630, Remarks of Senator Baucus ("The issue is whether old facilities that are substantially renovated and refurbished should continue to be allowed to emit at much higher rates or to emit more pollution, and with little or no pollution control equipment, compared to new sources. The obvious answer is that they should not, so long as common sense exceptions to the rules *de minimus* exceptions and exceptions for pollution control equipment] continue to apply . . . .").

[18] WEPCO, 893 F.2d at 906–08.

equipment replacement to constitute a physical change for purposes of the Clean Air Act's modification provisions."[19] The Seventh Circuit held, however, that "to adopt WEPCO's definition of 'physical change' would open vistas of indefinite immunity from the provisions of NSPS and PSD [the latter being the version of New Source Review that applies in areas that are in attainment of air quality standards]."[20] The court found that EPA had not acted arbitrarily or capriciously in determining that the proposed changes were not routine.[21]

The electric power industry's response to the WEPCO decision was to stop seeking applicability determinations from EPA. The power companies did not, for the most part, apply for NSR permits before undergoing construction at their existing plants, nor did they report the resulting emissions increases.

At the same time, the industry prevailed upon the Office of Management and Budget to kill a broader examination of industry practices initiated by EPA. The industry also pressured Congress to amend the Clean Air Act to create broad new exemptions for modification projects at power plants. When they did not get new statutory exemptions, the power companies lobbied the first Bush Administration for regulatory loopholes. In 1992, the Administration amended the NSR rules to give the electric utilities a more generous formula for calculating whether an emission increase had occurred. The rule did not change the definition of routine maintenance, however. When EPA initiated a new investigation to determine why so few NSR applications had been filed, industry again sought intervention by OMB, using the Paperwork Reduction Act as a pretext. While this effort succeeded in delaying EPA's investigation, OMB ultimately dismissed the industry's claims.

In the mid 1990's, EPA focused its NSR enforcement efforts on refineries and pulp and paper mills.[22] Budget cuts and congressional attacks associated with the 104th Congress limited EPA's ability to mount serious enforcement efforts against the power industry. Moreover, efforts to revise the national ambient air quality standards for ozone and particulate matter, to address interstate ozone transport problems, and to strengthen mobile source controls dominated EPA's air pollution control activity.

Finally, in 1996, EPA began to investigate the electric power industry in earnest.[23] That investigation uncovered a capital investment strategy, starting in the 1980's, to upgrade existing coal-fired power plants to run longer and harder rather than letting them retire and be replaced by new, cleaner facilities (as Congress had anticipated). Not only was the utility industry deliberate in pursuing this strategy, but industry representatives were even candid about it, or at least they were in non-environmental proceedings. For instance, in January 1995, a plant manager for Ohio Power ("OPCo"), a subsidiary of American Electric Power ("AEP"), testified about his company's "life-optimization programs" to the Public Utilities Commission of Ohio:

> The company has recognized for some years the benefits of extending or optimizing the lifetimes of several of its older coal-fired generating units . . . and has developed and begun to implement life-optimizations programs to accomplish that objective. The life-optimization programs extend over several years, and require significant capital expenditures during those years. Without those expenditures, the units' lives could not be extended, and they would most likely achieve more traditional lifetimes, on the order of 35–40 years. As a direct result of the life-optimization programs, the company expects those units to achieve, instead, lifetimes on the order of 50 years for certain of those units and of 60 years for others . . . .[24]
>
> Utilities today, including OPCo, have much greater incentives than in the past to keep existing generating units operating as long as possible beyond their nominal lifetimes, even at considerable expense, so as to put off the need for incurring the even greater expense of adding costly new replacement capacity.[25]

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[19] Id. at 908.

[20] Id. at 909. See also id. ("The legislative history suggests and courts have recognized that in passing the Clean Air Act Amendments, Congress intended to stimulate the advancement of pollution control technology. . . . The development of emission control systems is not furthered if operators could, without exposure to the standards of the 1977 Amendments, increase production (and pollution) through the extensive replacement of deteriorated generating systems.") (citations omitted).

[21] Id. at 913.

[22] OLP Report at 17–19, 31, Appendix II.

[23] Id. at 13.

[24] Public Utilities Commission of Ohio, Case No. 94–996-EL-AIR, Supplemental Testimony of Myron D. Adams on behalf of Ohio Power Company, July 20, 1994, at 6–7.

[25] Id. at 23.

> [T]he achievement of lifetimes in excess of 40 years is directly dependent on carrying out the life optimization program; such lifetimes simply could not be achieved without the unit modernization program, and without incurring the program's considerable capital cost.[26]

In light of the industry's "life-optimization" strategy, it is not surprising that EPA's investigation of coal-fired power plants uncovered myriad construction projects that were anything but routine:

- At the Tennessee Valley Authority's Allen plant, the replacement of a reheater and other large components involved cutting a twenty-five-foot hole in the boiler wall at a location 10 stories off the ground and constructing a monorail line and trolley system to transport the old components out of the boiler. The project required a work force of over 70 people.[27]
- AEP modified its Big Sandy plant in Kentucky in ways that allegedly led to an annual increase in sulfur dioxide emissions of 18,000 tons—more than the total emissions from a new coal-fired plant.[28]
- At its Tanners Creek plant in Indiana, AEP replaced 11 furnaces.[29]
- At its Scherer plant in Georgia and its Miller plant in Alabama, the Southern Company constructed entirely new units.[30]

The companies did not apply for NSR permits before undertaking any of these upgrades and reconstruction projects.

Beginning in 1999, EPA sent a number of referrals to the Department of Justice for civil enforcement actions against the owners and operators of some of the largest coal-fired power plants in the country, including those identified above, alleging widespread violations of the New Source Review provisions. After reviewing the referrals, the DOJ in November 1999 filed seven enforcement actions in U.S. District Courts against nine companies. That same month, EPA issued an administrative compliance order to the Tennessee Valley Authority alleging multiple NSR violations at nine of TVA's 11 coal-fired power plants located in Alabama, Kentucky, and Tennessee. The following May, TVA petitioned for review of the EPA order by the U.S. Court of Appeals for the Eleventh Circuit. In December 2000, the DOJ filed an additional NSR enforcement action against Duke Energy alleging major modifications at the company's coal-fired power plants in the Carolinas.[31]

One of these enforcement actions—against Tampa Electric—has been resolved with a consent decree. The rest are still in litigation.[32]

C. The Backlash Against NSR

In response to the enforcement actions, industry renewed its political assault on New Source Review. Lawyers and lobbyists for the coal and oil companies descended once again on Washington with claims that NSR was having a host of pernicious effects. A review of the facts reveals each of these industry claims to be specious.

t, the lobbyists have asserted that NSR subjects companies to an expensive and interminable permitting process whenever they seek to undertake even the most minor maintenance at their facilities. A popular claim is that NSR could potentially apply to the replacement of a single light bulb at a plant.

The reality is that NSR's permitting requirements are only triggered by modifications that significantly increase air pollution emissions. What is more, EPA's regulations already calculate the baseline against which increases are measured in a way that is generous to industry. Only if emissions increase significantly above these generous levels does a facility trigger NSR.

The Department of Justice has not filed enforcement actions against companies for replacing light bulbs. As the examples presented above demonstrate, the instances in which the government has asserted that NSR applied are ones in which companies undertook large-scale construction projects at their plants, refurbishing, replacing, and upgrading equipment in ways that greatly increased the amount of air pollution emitted from those facilities.

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[26] Id. at 25.

[27] In re: Tennessee Valley Authority: Transcript of Proceedings at 240–242; Direct Testimony of Plant Manager Alan Heckking at 17.

[28] September 15, 1999 letter from Eliot Spitzer, Attorney General of New York, to William J. Lhota, president of Kentucky Power Company.

[29] *United States* v. *AEP*, Complaint.

[30] *United States* v. *Alabama Power Co.* and *Georgia Power Co.*, Complaint.

[31] OLP Report at 13–17.

[32] Id. at 15, 17.

The second claim the lobbyists make is that NSR's onerous requirements prevent industry from meeting the country's power needs. Nothing could be farther from the truth.

First of all, energy market analysts do not see environmental regulation as a driver of recent trends in electricity capacity expansion and utilization relative to other factors.[33]

Moreover, all signs indicate that this country will produce more than enough electricity to satisfy its needs. PA Consulting has estimated that more that 245 GW of new capacity is under development; and that it is likely that 175 GW to 230 GW of that planned capacity will come on line by 2006. To put that growth in perspective, the group states that 215 GW of capacity additions would be equivalent to "what the entire rest of the world built in 3 years." PA Consulting emphasizes that the total includes 11 GW of coal-fired generation capacity under development and that 20,000 MW of new coal-fired capacity had been announced in the 6 months preceding the report alone. Finally, the group observes:

> With the current wave of new plant announcements, it is even likely that the industry will overbuild, as players seek to increase market share by displacing older capacity. By 2006, some 30–50 GW of 'excess' capacity might become operational and some regional markets might experience excess capacity and very low prices in the next 3–4 years.[34]

Likewise, the Cato Institute has estimated that 150 to 200 GW of new capacity is scheduled to come on line by 2004, threatening an "electricity glut."[35] Clearly, the current NSR regulations have not hindered the construction of new generating capacity.

The fact is that a great deal of new capacity is being built, even with NSR requirements in place. According to the North American Electric Reliability Council,[36] "Near term generation adequacy is deemed satisfactory." The NERC expects reserve margins in the 15–27 percent range, with 15 percent generally considered adequate.[37] These estimates may need to be adjusted to account for recent investor reluctance owing not to NSR, but rather to disclosures of corporate fraud in the energy industry and elsewhere.

With respect to oil production, refiners have affirmed that the reason they did not build new refineries in the 1990's is that the low profitability of the business simply did not justify the investment. Valero's senior vice president has emphasized that it was "the poor margins that had the biggest impact, not the environmental rules."[38] Refiners and analysts also point to low profitability—not to NSR or other environmental requirements—when explaining why companies are not investing in new refineries. For example, Exxon Mobil's chairman and chief executive recently stated that no oil company is prepared to build a new refinery because they cannot make money from doing so.[39] Finally, environmental requirements cannot be blamed for the low profitability of the industry and the resulting reluctance to invest in new refineries. The EIA has concluded that environmental requirements accounted for only a very small share of the refining industry's decline in profitability in the early 1990's.[40]

The third industry claim is that requiring older power plants meet modern pollution standards will mean higher electricity prices for consumers. An analysis by

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[33] See, e.g., Economists Tell Senate Committee that FERC May Need More Economic Expertise to Monitor Power Markets Effectively, Foster Electric Report, June 20, 2001 (comments by Severin Borenstein); Power Companies and Regulators Must Take Steps to Avoid Spread of California Power Virus, Business Wise, April 24, 2001; Charles J. Cicchetti and Colin M. Long, Politics as Usual: A Roadmap to Backlash. Backtracking and Re-Regulation, Public Utilities Fortnightly, October 1, 2000, at 34.

[34] PA Consulting Group, The President's 2001 US Energy Blueprint: What Does It Mean For the Utility Industry? (May 25, 2001) (emphasis in original).

[35] Jerry Taylor, Just Say "No" to the Energy Plan, May 19, 2001, at http://www/cato.org/dailys/05–19–01.html.

[36] "Reliability Assessment 2000–2009", North American Electric Reliability Council, October 2000.

[37] Clean Air Task Force, et al., Comments on Review of Interpretation, Implementation, & Enforcement of Clean Air Act New Source Review Programs, EPA Docket No. A–2001–19, July 24, 2001 ("Environmental Comments on NSR Background Paper"), at 47.

[38] Nelson Schwartz, Is Dick Cheney the New Hillary? Fortune, June 11, 2001, at 37.

[39] Alexei Barrionuevo, Exxon-Mobil CEO Doubts Anyone Would Build US Refinery, Dow Jones News Service (May 30, 2001).

[40] ICF Consulting, Review of Data on the Impact of New Source Review on Investment Decisions: Power Generation and Refinery Sectors, Draft Report (June 22, 2001), at 53. See also Energy Information Administration, The Impact of Environmental Compliance Costs on US Refining Profitability.

MSB Energy Associates analysis demonstrates that the cost of requiring best available control technology on the fifty-one plants that have been charged with NSR violations is quite modest relative to industry revenues. The annual cost (including the amortization of the capital cost) would be about $4 billion. This amounts to about 8 percent of the revenues for the companies involved. On average, the cost impact would be 0.5 cents per kWh based on year 2000 reported sales for the companies involved. This must be compared to the health benefits, which are four-to-five times the cost of controls.[41]

The other important point to take away from MSB's analysis is that the lion's share of the cost of the clean up will be eaten by the plant owners, who in a competitive power market cannot automatically pass-through those costs to consumers. In fact, the Energy Information Administration in its recent Analysis of Strategies for Reducing Multiple Emissions from Power Plants found that requiring best available control technology at all of the nation's grandfathered power plants would not increase electricity prices appreciably. Indeed, EIA found that relative to 1998 prices, even requiring modern controls at all power plants, electricity prices will fall. This is the so-called "McIntosh Report" that President Bush used as justification to reverse his pledge to control carbon dioxide from power plants.[42]

The fourth claim that the power companies make is that NSR prevents them from making improvements to increase the efficiency of their plants. Specifically, they argue that fear of triggering NSR keeps power plant owners from making investments in heat rate improvement that would reduce emissions from those plants.

To check this claim, environmental groups calculated the potential impact of heat rate improvements at coal-fired power plants on emissions and compared that to the potential emission reductions from enforcement of New Source Review standards.[43]

The comparison is striking. The actual potential for heat rate improvement is small. The Electric Power Research Institute investigated this a number of years ago and reported its findings in a 1986 report, "Heat-Rate Improvement Guidelines for Existing Fossil Plants." In this report EPRI found that, if cost were no object, there could be, on average, an improvement in heat rate of about 400 BTUs per kWh (about 4 percent). Cost, however, is very much an important consideration. Work done by a major northeast utility in the early to mid-1990's found that a fair amount of the heat rate improvement potential at their plants had already been tapped, and that any further improvements were extremely non-cost-effective.[44]

Nevertheless, to give heat rate improvement the benefit of the doubt, the environmental groups assumed that half of the average heat rate improvement potential could actually be achieved in a cost-effective manner at every major coal-fired generating unit (over 1,000 generating units with a total installed capacity of almost 300,000 MW).[45]

Even under these generous assumptions, heat rate improvement at coal-fired power plants would only reduce SO_2 emissions by about 218,000 tons out of a total of 11.2 million tons (about 2 percent). NOx emission would be reduced by 88,000 tons out of a total of 5.1 million tons (less than 2 percent).[46]

In contrast, NSR enforcement at the 51 plants currently subject to enforcement actions under Federal law would reduce SO_2 by 2.8 million tons—over 12 times as much as the heat rate improvements, and NOx by one million tons—over 11 times as much as the heat rate improvements. NSR enforcement at all coal-fired power plants would reduce SO_2 by 8.8 million tons and NOx by 3.3 million tons.[47]

Heat rate improvements would reduce CO_2 emissions by about thirty-eight million tons out of 2,454 million tons (1.5 percent). It is more difficult to compare this to CO_2 reductions from NSR enforcement, because those would be a byproduct of other actions taken. However, we have estimated that NSR enforcement at all coal-fired power plants would reduce CO_2 by 95 million tons, and NSR enforcement at the 32 plants initially charged with violations would reduce CO_2 by 40 million tons.[48]

In a speech before the National Association of Manufacturers on June 12, 2001, EPA Administrator Whitman said, "I have heard too many instances where we interpreted [NSR] so literally in the field that we, in fact, are hindering environmental progress . . . ."[49] When NRDC submitted a Freedom of Information Act re-

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[41] Environmental Comments on NSR Background Paper, Appendix D.
[42] *See id.*, Appendix K.
[43] *Id.* at 49–50.
[44] *Id.* at 49.
[45] *Id.*
[46] *Id.* at 50.
[47] *Id.*
[48] *Id.*
[49] Remarks by Christine Todd-Whitman, Administrator of the U.S. Environmental Protection Agency, at the National Association of Manufacturers, June 12, 2001.

quest seeking all documentation of those "instances," EPA responded that "Administrator Whitman was referring to oral statements that had been made to her by various industry stakeholders" and that the agency did not have any information to substantiate the oral statements.[50] In light of the analysis presented above, it is not surprising that industry has not been able to provided EPA with documentary evidence to support its claim that NSR undermines efficiency.

Finally, the industry lobbyists assert that the operation of NSR means higher electricity prices for consumers, and that those costs overwhelm the environmental benefits of the law. The facts explode this specious claim as well.

First, an analysis by MSB Energy Associates demonstrates that the cost of requiring best available control technology on the 51 plants that have been charged with NSR violations is modest relative to industry revenues. The annual cost (including the amortization of the capital cost) would be about $4 billion. That is approximately 8 percent of the revenues for the companies involved. On average, the cost impact would have been 0.5 cents per kWh based on year 2000 reported sales for those companies.[51]

The lion's share of this cost is borne by the plant owners, who in a competitive power market cannot automatically pass those costs through to consumers. In fact, the Energy Information Administration found in its Analysis of Strategies for Reducing Multiple Emissions from Power Plants that requiring state-of-the-art control technology at all of the nation's grandfathered power plants would not increase electricity prices appreciably. Indeed, EIA concluded that even if best-available controls are required at all power plants, electricity prices will fall.[52]

Although money is not the measure of everything, monetized value provides one metric of the efficacy of these actions. Data collected by Abt Associates on the 51 plants charged with NSR violations shows $27 billion to $45 billion in annual benefits from requiring those plants to implement best available control technology.[53] That figure dwarfs the $4 billion estimated by MSB Energy Associates as the annual cost of clean up.

The lack of support for industry's claims about New Source Review has not stopped the nation's worst polluters from making them. With the election of President Bush and the convening of Vice President Cheney's Energy Task Force, the polluters found themselves with a friendly audience and a forum in which to make their pitch for the effective elimination of NSR.

Documents that NRDC has obtained from the Department of Energy, the lead agency on the Cheney Task Force, reveal that the companies and industry groups who most sought the demise of New Source Review enjoyed extraordinary access to the task force:[54]

- Edison Electric Institute had contact with the task force at least 14 times (EEI contributed $598,169 to Republican candidates and the GOP from 1999 to 2002).
- North American Electric Reliability Council had contact with the task force at least 11 times.
- National Mining Association had contact with the task force at least nine times (NMA contributed $575,496 to Republican candidates and the GOP from 1999 to 2002).
- Westinghouse had contact with the task force at least nine times (Westinghouse Electric Company contributed $65,060 to Republican candidates and the GOP from 1999 to 2002).
- Electric Power Research Institute had contact with the task force at least eight times.
- Southern Company had contact with the task force at least seven times (Southern contributed $1,626,507 to Republican candidates and the GOP from 1999 to 2002).
- American Petroleum Institute had contact with the task force at least six times (API contributed $44,301 to Republican candidates and the GOP from 1999 to 2002).[55]

These firms made the most of their access. On March 23, 2001, an executive of the coal giant, Southern Company, sent the task force coordinator at the Energy De-

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[50] Letter from William T. Harnett, director, EPA Information Transfer and Program Integration Division, to NRDC, October 1, 2001.

[51] *See* Environmental Comments on NSR Background Paper, Appendix D.

[52] *See id.*, Appendix K.

[53] *See id.* at 49.

[54] *See* http://www.nrdc.org//media/pressreleases/020521.asp.

[55] Industry's intimate access to the Cheney Task Force stands in stark contrast to the limited access afforded environmental groups. *See* http://www.nrdc.org/air/energy/taskforce/bkgrd2.asp.

partment a memorandum arguing that "EPA has re-interpreted [the NSR] regulations in extreme ways that not only places [sic] in legal jeopardy past work conducted at facilities but also threatens the safe, reliable and efficient operation of energy production facilities across the country." The paper urged the Administration to undertake a "reaffirmation of historical interpretations" of the New Source Review provisions.[56]

The previous day, an official with the National Petroleum Refiners Association had written in a message to the same Energy Department official that "[t]he EPA's enforcement campaign against U.S. refineries should be halted and reexamined." He characterized EPA's enforcement actions as "nothing more than an attempt to discredit the industry and collect tribute in the form of fines on order to allow refiners to get on with their business." In concluding, he wrote that "this activity goes far beyond the pale of reasonable enforcement action and should cease."[57]

This heavy-handed lobbying bore fruit in the form of two final recommendations issued by Vice President Cheney on May 16, 2001:

• The NEPD Group [the task force] recommends that the President to [sic] direct the Administrator of the Environmental Protection Agency, in consultation with the Secretary of Energy and other relevant agencies, to review New Source Review regulations, including administrative interpretation and implementation, and report to the President within 90 days on the impact of the regulations on investment in new utility and refinery generation capacity, energy efficiency, and environmental protection.[58]

• The NEPD Group recommends that the President direct the Attorney General to review existing enforcement actions regarding New Source Review to ensure that the enforcement actions are consistent with the Clean Air Act and its regulations.[59]

President Bush issued both of the recommended directions. In January 2002, the Department of Justice responded to the second one with a report concluding that "EPA may reasonably argue that the new source review enforcement actions against coal-fired power plants are consistent with the C[lean]A[ir]A[ct], as well as with the A[dministrative]P[rocedure]A[act]."[60]

EPA issued its report 6 months later. The report concluded that the NSR program has not significantly impeded investment in new power plants or refineries. For the utility industry, this is evidenced by significant recent and future planned investment in new power plants. Lack of construction of new Greenfield refineries is generally attributed to economic reasons and environmental restrictions unrelated to NSR.[61]

EPA also found that "preventing emissions of pollutants covered by NSR does result in significant environmental and public health benefits."[62] At the same time, however, it concluded that, with respect to existing power plants and refineries, the NSR program has impeded or resulted in the cancellation of projects which would maintain and improve reliability, efficiency and safety of existing energy capacity. Such discouragement results in lost capacity, as well as lost opportunities to improve energy efficiency and reduce air pollution.[63]

This conclusion is based largely on self-serving, anecdotal evidence submitted by industry commenters. For example, EPA relies on one company's complaint that it did not install new Teflon-coated nozzles in a process dryer for fear of triggering NSR. EPA blindly accepts as true the company's claims that the change it forwent would have actually triggered NSR, that the desire to avoid NSR was really the motivation for abandoning the change, and that the change would have improved the reliability, efficiency, and safety of the facility in question.[64]

EPA concedes that industry has offered little more than undocumented anecdotes and sketchy hypotheticals to support its critique of NSR. The agency nevertheless takes the position that such material can substitute for verifiable data if industry shovels enough of it into the administrative record:

> In light of the volume of anecdotal evidence presented, the EPA concludes that concern about the scope of the routine maintenance exclusion is having an adverse impact.[65]

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[56] *See* http://www.nrdc.org/air/energy/taskforce/doc150.html.
[57] *See* http://www.nrdc.org/air/energy/taskforce/doc6368.html.
[58] Report of the National Energy Policy Development Group, ch. 7, at 14 (May 16, 2001).
[59] *Id.*
[60] OLP Report at 4.
[61] EPA, New Source Review: Report to the President, at 1 (June 13, 2002).
[62] *Id.* at 2.
[63] *Id.* at 1.
[64] *Id.* at 34.
[65] *Id.* at 17.

Under the leadership of John Graham, the Office of Regulatory and Information Affairs at the Office of Management and Budget has repeatedly returned to agencies for reconsideration regulations that, in OIRA's view, lacked adequate data to substantiate the purported grounds for the rulemaking. For example, the office returned one regulation to the Office of Veteran Affairs because, "[w]hile VA staff have argued that there are currently inconsistencies in billing practices, OMB has not been presented with evidence of this problem or evidence of how this rule would reduce, rather than increase inconsistency."[66] It returned to the Department of Transportation a rule requiring the retrofitting of exterior piping on tanker trucks carrying hazardous substances, because while the Department presented an estimate of what the retrofitting would cost, the estimate was itself based upon "anecdotal evidence."[67] To date, OIRA has only returned rules that the private sector finds too onerous. Dr. Graham insists, however, that he will apply the same standards to regulations that are criticized as not providing adequate protection to the public. If this is in fact the case, then he will return EPA's proposed changes to New Source Review, for EPA has failed to present adequate data to substantiate the purported problems that supposedly justify eviscerating the program.[68]

III. THE ANNOUNCED ROLLBACKS

On June 13, the day that EPA released its report on NSR, the agency announced that it would be making eight regulatory changes. If these changes are allowed to take effect notwithstanding their incompatibility with the Clean Air Act, the New Source Review requirements will in effect no longer apply to the modification of existing facilities.

A. Dirtiest Two Years in Ten Baseline

The New Source Review requirements are only triggered by changes that cause air pollution emissions to increase significantly, *i.e.*, by at least 40 tons per year. To determine whether pollution will increase significantly, it is necessary to compare a source's pre-change emissions, known as its "baseline," with its post-change emissions. With respect to the approximately 15,500 major industrial facilities in this country that are not electric utilities, EPA currently interprets the Clean Air Act to require that the baseline be calculated as the average of the source's last 2 years of emissions, unless the source can demonstrate that another period is more representative of its pre-change emissions.

On June 13, EPA announced that it will promulgate a final rule allowing the baseline to be calculated as the average of the source's emissions during any 2-year period that the company chooses from the last 10 years.[69] If this rule takes effect, a plant that currently emits 1,000 tons-per-year of an air pollutant could institute a change causing its emissions to go up to 1,640 tons-per-year without triggering NSR, provided that its emissions nine and 10 years ago averaged 1,600 tons-per-year. Under EPA's new rule, in other words, a change that causes a source's emissions to go from 1,000 tons-per-year to 1,640 tons-per-year will not be deemed a "modification," even though the Clean Air Act defines that term to mean "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source."[70]

During internal EPA discussions leading up to the June 13 announcement, officials within the agency included this change to the baseline calculation among the "proposals present[ing] a risk of significantly diminished program benefits." The officials elaborated on what they meant by "significantly diminished":

> Based on our review . . . , moving to a "high 2 in 5" from a "last 2 years" as the pre-change baseline will have some reduction (perhaps 20 percent) on the scope of the NSR program as it impacts non-utility sources . . . . A 10-yr baseline would substantially diminish the scope of the program. *Our best estimate*

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[66] Letter from OIRA Administrator John Graham to VA General Counsel Tim McClain, October 3, 2001 (posted at http://www.whitehouse.gov/omb/inforeg/va—medical—care—rtnltr.html).

[67] Letter from OIRA Administrator John Graham to DOT General Counsel Rosalind Knapp, August 8, 2001 (posted at http://www.whitehouse.gov/omb/inforeg/wetlines—return—letter3.html).

[68] See Exec. Ord. 12866, Section 1(b)(7) (Sep. 30, 1993) ("Each agency shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation.").

[69] EPA, New Source Review: Recommendations (June 13, 2002), at 4.

[70] 42 U.S.C. § 7411(a)(4).

is that it would reduce the number of facilities subject to NSR by 50 percent or more compared to a high 2 in 5 baseline.[71]

B. Using Accounting Gimmicks to Low-Ball Projected Future Emissions

As noted above, one must compare a source's pre-change emissions with its post-change emissions to determine whether the change is causing a significant increase in emissions. EPA's change to the baseline calculation will exaggerate pre-change emission levels. The agency has also announced that it will take final action on a rule that will under-represent the post-change emissions attributable to the change. Specifically, the new rule will allow a company to exclude from the calculation of post-change levels those emissions that can be attributed to old capacity, even if the source would not be able to continue using that capacity without making the proposed change.[72] In essence, this rule will enable companies to cook the books in order to hide significant emissions increases that should trigger the New Source Review requirements.

C. Exemption for Units That May Once Have Been Considered Clean

EPA also announced on June 13 that it would promulgate a final rulemaking any source that goes through an NSR review for best available control technology exempt from having to go through the review again for a period of 15 years—regardless of what changes the source undergoes and how much its emissions increase. What is more, the exemption would apply retroactively, meaning that if, 10 years ago, a source installed pollution controls that have long since been rendered obsolete by more effective technology, the source could nevertheless undergo dramatic renovations today that significantly increase emissions without installing new controls, and it could continue making such changes with impunity for 5 years into the future.[73]

In the pre-announcement internal agency discussions, EPA's attorneys noted the lack of a "solid legal rationale" for this change.[74] Indeed, there is no authority whatsoever in the Clean Air Act for allowing a company to ignore the New Source Review requirements—when it undertakes radical changes that significantly increase emissions—just because the company long ago installed control equipment that may now be obsolete.

D. Exemption for Plantwide Applicability Limits

In *Alabama Power Co.* v. *Costle,* the U.S. Court of Appeals for the D.C. Circuit concluded that "EPA ha[d] properly exempted from best available control technology (BACT) and ambient air quality review those 'modifications' of a source that do not produce a net increase in any pollutant.[75] The court noted that, under the Clean Air Act, "any offset changes claimed by industry" to demonstrate the lack of a net increase "must be substantially contemporaneous."[76]

In response to the ruling in Alabama Power, EPA solicited public comment on whether the agency should "specify that no emission reductions which occurred more than 3 years before the date a [pre-construction] application was complete may offset the increase that would result from the change proposed in the application."[77] After reviewing the voluminous industry comments submitted on this proposal, EPA selected 5 years as the outer limit of contemporaneity.[78]

In 1996, EPA proposed a rule pursuant to which "a source, if authorized by a State in a SIP, may base its NSR applicability on a plantwide emissions cap, termed a plantwide applicability limit ("PAL"). So long as source activities do not result in emissions above the cap level, the source will not be subject to NSR."[79] Although EPA never finalized this proposal, further analysis brought recognition that a PAL could not be a means for escaping the contemporaneity requirement enunciated in Alabama Power and quantified in the agency's 1980 netting rule. This recognition is reflected in a 1998 Federal Register notice, in which EPA renewed its proposed to authorize PALs:

> Having again reviewed Alabama Power and the Agency's subsequent interpretation of the case, the Agency is concerned that, because PAL's may be characterized as a form of netting and result in the avoidance of major NSR, the con-

[71] Internal EPA document provided to NRDC.
[72] New Source Review: Recommendations at 3–4.
[73] Id. at 2.
[74] Internal EPA document provided to NRDC.
[75] 636 F.2d at 401.
[76] Id. at 402.
[77] 45 Fed. Reg. 6802, 6803 (January 30, 1980).
[78] 45 Fed. Reg. 52676, 52701 (August 7, 1980).
[79] 61 Fed. Reg. 38249, 38264 (July 23, 1996).

> temporaneity requirement for netting set forth in Alabama Power may also need to be applied to PAL's. Therefore, EPA is soliciting comment on whether and when to provide for subsequent adjustment of PAL's to address contemporaneity issues associated with Alabama Power.[80]

Although the Clinton Administration never finalized its 1998 PAL proposal, the Bush Administration has now, 4 years later, decided to promulgate a final PAL rule. Despite the 5-year netting limit promulgated in 1980 and EPA's 1998 recognition that PALs are subject to the same legal requirement of contemporaneity that governs netting, the agency is now planning to finalize a rule under which a PAL could remain unchanged for 10 years or more.[81] This stretches the meaning of "contemporaneity" past the breaking point. What is more, EPA's rule would allow the plant-wide limit to be renewed at higher levels under certain circumstances.[82]

Internal EPA documents reveal that as late as January 2002, EPA lawyers still did not have a legal rationale for the Administration's new PAL rule. In fact, during a 2-day meeting held that month at EPA headquarters, the agency's lawyers informed their clients that the new PAL proposal was "in conflict" with the Clean Air Act. The attorneys argued that any PAL approach must adhere to the legal framework of netting, a stricture which the political appointees refused to accept. According to a memorandum memorializing the meeting, the lawyers also insisted that a "PAL must be based on [a] reasonably contemporaneous period, which is more consistent with a 5-year period." Again, the political appointees resisted. The final PAL rule announced June 13 reveals that, in the end, the political appointees at EPA elected to ignore the law.

If the change takes effect, a company will be allowed to pretend that a significant pollution increase at its facility in, say, 2010 is not occurring on account of a decrease that happened at the plant in 2001. What is more, EPA has announced that its new method of calculating baselines will apply to PALs, meaning that the limits will be set so high as to allow massive pollution increases over current levels.

E. Exemption for "Pollution Control and Prevention Projects"

The last of the final rules that EPA announced on June 13 would exempt a proposed change to a source from the New Source Review requirements even if the change would cause a significant increase in the emissions of an air pollutant, so long as EPA deemed the change environmentally beneficial in the aggregate. EPA has announced, moreover, that it will consider as environmentally beneficial a project that reduces emissions per unit of energy output, even if the project causes the source's emissions to increase.[83] In a recent applicability determination, EPA itself recognized the flaw in this type of exemption:

> [V]irtually any major capital improvement project at an existing source is designed in part to increase efficiency of production, and this will in turn almost always have the collateral effect of reducing emissions per unit of production, even though it may provide an economic incentive to increase total production, with the net result that actual emissions of air pollution to the atmosphere could increase significantly. There is nothing in the statutory terms or structure or in EPA's regulations which suggests that such major changes should be accorded exempt status under the NSR program. To the contrary, major capital investments in industrial equipment, where they could result in an increase in emissions, appear to be precisely the type of change at an existing source that Congress intended should be subject to PSD and nonattainment area NSR permitting.[84]

The Clean Air Act has not changed in the 2 years since EPA made the above determination. The exemption for improved heat rate projects announced June 13 is as unsound and unlawful now as it was in 2000.

F. Defining "Routine Maintenance, Repair, and Replacement"

In addition to announcing final rules on June 13, EPA announced that it would be submitting proposed rules for notice and comment. Most significantly, the agency announced that it would propose to define certain parameters that industry will be

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[80] 63 Fed. Reg. 39857, 39863 (July 24, 1998).
[81] *New Source Review: Recommendations* at 1.
[82] *Id.*
[83] *Id.* at 2–3.
[84] Detroit Edison Applicability Determination, at 5–6, n.1 (May 23, 2000). See also *Puerto Rican Cement Co.* v. *EPA,* 889 F.2d 292, 297–98 (1st Cir. 1989) (modification of emissions unit that decreases emissions per unit of output, but may result in sufficient production increase such that actual emissions will increase, is subject to the New Source Review requirements).

able to follow safe in the knowledge that its activities will be deemed "routine maintenance, repair, and replacement."[85]

Under the first set of proposed parameters, any changes that a company makes at a facility—irrespective of how much increased pollution results—will be per se "routine" as long as the annual cost of the changes does not exceed 15 percent of the cost of the entire plant. Costs attributable to the installation of pollution control equipment and the remedying of unanticipated equipment failures would be excluded from the annual cap.[86] The upshot would be that a company could replace every single part of its facility over the course of five or 6 years and never trigger NSR, regardless of the amount by which the plant's emissions increased.

Under the second set of parameters, the replacement of existing equipment with new equipment that serves the same function and does not alter the heat input and fuel consumption specifications of the unit would never trigger New Source Review. In other words, a power plant could replace all of its deteriorating boilers with new ones, and as long as the new ones had the same specifications as the old ones when they were new, the plant would not need to install state-of-the-art pollution controls.[87] This rule would thus open the "vistas of indefinite immunity" that the WEPCO court found to be impermissible under the Clean Air Act.[88]

Under the third set of parameters, any change that fell within a set of categories identified by EPA would automatically be deemed "routine," no matter how much new pollution the change caused. EPA has announced that it is considering allowing its list of per se routine activities to be informed by ones that industry itself identifies as common practice.[89]

In its June 13 announcement, EPA took pains to emphasize that changes falling outside the proposed parameters would not be disqualified as "routine." All of the other announced limitations on NSR's applicability (dirtiest 2 years in 10 baseline calculation, new method of calculating post-change emissions, etc.) would still be available to industry.[90]

It is impossible to miss the fact that if this proposed rule were allowed to become final, the New Source Review requirements would never apply in the case of modifications at existing facilities.

G. Exemption for "Debottlenecking"

EPA also announced that it would propose a new rule that would provide a company with additional leeway to under-represent the emissions increase caused by a change to a source. Specifically, if a change to one emissions unit at a plant caused emissions to increase at an "upstream" or "downstream" unit at the same plant, that increase would not be considered in determining whether the change had caused a significant emissions increase such to trigger the NSR requirements.[91]

During the deliberations of the Cheney Task Force, EPA enforcement officials estimated that the "debottlenecking" proposal would reduce the effectiveness of New Source Review by approximately 5 percent.[92]

H. Allowing Dis-aggregation of Modifications

Finally, EPA announced that it would propose a new rule that would make it easier for a company to evade NSR by taking a change that does cause a significant pollution increase, and treating it as a collection of sub-changes, no one of which causes a significant increase.[93]

IV. WHAT THE EFFECTS OF THE ROLLBACKS WILL BE

After some details of EPA's regulatory plans became public in January 2002, the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials ("STAPPA/ALAPCO") wrote to Administrator Whitman expressing "considerable trepidations regarding what we understand the reforms will allow and the impact that these changes will have on our nation's ability to achieve and sustain clean, healthful air." STAPPA/ALAPCO pointed out that, "when taken in combination, these reforms will allow most source modifications to

[85] *New Source Review: Recommendations* at 4–6.
[86] *Id.* at 4–5.
[87] *Id.* at 5–6.
[88] WEPCO, 893 F.2d at 909.
[89] *New Source Review: Recommendations* at 6.
[90] *Id.* at 4.
[91] *Id.* at 6.
[92] Internal EPA document provided to NRDC.
[93] *New Source Review: Recommendations* at 7.

avoid NSR, resulting in unchecked emission increases that will degrade our air quality and endanger public health."[94]

EPA has ignored STAPPA/ALAPCO's request for "a broad stakeholder meeting to allow for an open dialog on the reforms under consideration"[95] and announced rollbacks every bit as extreme as the ones rumored to be under consideration in January. The announced changes threaten, by operation of "no more stringent than" provisions in State statutes, to force States to weaken their air quality measures at a time when they will be struggling to achieve attainment of stricter national ambient air quality standards for ozone and particulate matter. Indeed, EPA has indicated that it will require State implementation plans to include the announced changes to NSR program. As a result, even States that do not want to adopt the changes will be forced to in order to retain control of their permitting programs.

EPA has long been on notice of the devastating impact that the changes the agency has now announced would have on public health and the environment. In his February 2002 resignation letter, former director of EPA's Office of Regulatory Enforcement Eric Schaeffer reminded Administrator Whitman that the agency stood to keep more than five million tons per year of combined SO_2 and NOx pollution out of the air by means of the compliance orders and enforcement actions it had brought under the New Source Review provisions.[96] Since all of those cases involve modifications, and the announced rules would effectively end NSR for modifications, it follows that the new rules would allow millions of tons more pollution to be emitted into the air every year than the proper application and enforcement of NSR as it exists today.

A report by the Clean Air Task Force reveals the stakes, in terms of public health, of the NSR enforcement cases alone.[97] Key findings of this report include:

- Pollution from the 51 plants that are targets of NSR enforcement actions shortens the lives of between 5,500 and 9,000 people every year.
- Requiring these plants to meet modern pollution standards as required by law would avoid between 4,300 and 7,000 of these deaths.
- Pollution from the 51 NSR plants leads to between 107,000 and 170,000 asthma attacks each year.
- Between 80,000 and 120,000 of these asthma attacks could be avoided by requiring the plants to meet modern pollution standards as required by law.
- Although all of the plants that are currently targets of NSR enforcement are located in the Midwest or Southeast, there is a "transport of death and disease." The pollution from these plants affects downwind States resulting in 1,500 to 2,100 premature deaths and 30,000 to 39,000 asthma attacks per year in the Northeast.
- 1,200 to 1,700 of the deaths and 23,000 to 31,000 of the asthma attacks in downwind Northeastern States would be avoided if the plants met modern pollution standards.
- The pollution reductions from the announced settlements with Tampa Electric, Cinergy, Inc., and Dominion Power alone would result in avoiding between 780 and 1,150 premature deaths every year.

If NSR did not apply to the modification of existing units—a result EPA hopes to achieve with the rules announced on June 13—then the prevention of death and disease outlined above would not be achieved.

On June 24, the Clean Air Task Force released another study. It shows that prosecution of power plants charged with violating the New Source Review provisions is a highly cost effective way to clean up the air. Using methodologies approved by EPA, the study demonstrates that the benefits of the NSR enforcement cases outweigh the costs by as much as 10 to 1. Specifically, it shows that using New Source Review to force the 51 sued coal plants to reduce their soot and smog emissions would produce annual public health benefits valued at $24–38 billion in avoided deaths and avoided asthma attacks while costing utilities only about $3.5 billion per year in control costs.[98]

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[94] Letter from STAPPA President Lloyd Eagan and ALAPCO President Arthur Williams to EPA Administrator Christine Todd-Whitman, January 23, 2002.

[95] *Id.*

[96] Letter from Office of Regulatory Enforcement Director Eric V. Schaeffer to Administrator Christine Todd-Whitman, February 27, 2002.

[97] Power to Kill, Clean Air Task Force, July 2001. The report draws upon data from Abt Associates, Inc., The Particulate-Related Health Benefits of Reducing Power Plant Emissions (October 2000). See also, Clean Air Task Force, Death, Disease, and Dirty Power: Mortality and Health Damage Due to Air Pollution from Power Plants (October 2000) (posted at www.cleartheair.org).

[98] L. Bruce Hill, A Preliminary Analysis of the Benefits and Costs of Current New Source Review Litigation, June 24, 2002 (posted at http://www.clnatf.org/press—room/index.html).

When EPA proposed to reform the New Source Review program in 1996, it prepared a Final Draft Regulatory and Economic Impact Analysis. The agency characterized the results of that analysis in its notice of proposed rulemaking:

> The EPA estimates that 20 percent fewer sources will be classified as major as a result of revising the period for establishing the baseline for actual emissions from which to calculate emissions increases to the highest 12 consecutive months operation by the source. Another 6 percent reduction is anticipated from the "clean unit" and "clean facility" tests and the exclusion for pollution control and pollution prevention projects. The EPA estimates still another 25 percent of modifications, which would otherwise be subject to major NSR, would be excluded due to allowing sources to use projected future actual emissions to calculate emissions increases rather than requiring the calculation to be based on the source's potential to emit in each case.[99]

EPA concluded, in other words, that only forty-nine percent of the sources that would otherwise be subject to NSR would be subject to those provisions in the event that the proposed rules entered into effect. Those proposed rule changes were, in virtually every aspect, less extreme than the ones EPA announced on June 13. One can only conclude, then, that the announced changes will have an effect on NSR applicability far more dramatic than the one EPA quantified in 1996.

Executive Order 12866 states in part:

> Each agency shall assess both the costs and the benefits of the intended regulations and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.[100]

Where a regulatory action is likely to result in a rule that may "[h]ave an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments of communities,"[101] the same executive order requires the agency to provide OIRA, "as part of the agency's decisionmaking process,"

> An assessment, including the underlying analysis, of costs anticipated from the regulatory action (such as, but not limited to, the direct cost both to the government in administering the regulation and to businesses and others in complying with the regulation, and any adverse effects on the efficient functioning of the economy, private markets (including productivity, employment, and competitiveness), health, safety, and the natural environment), together with, to the extent feasible, a quantification of those costs.[102]

As indicated above, EPA is in possession of evidence indicating that the announced changes to New Source Review will result in tens of thousands of premature deaths, asthma attacks, and hospitalizations, tens of billions of dollars' worth of forfeited public health benefits each year, and—on account of increased haze in national parks and acid deposition across the Northeast—serious detriment to the nation's tourism industry. EPA has nevertheless refused to perform an analysis of the impacts that the announced rules will have on public health, the environment, and the economy. That refusal flies in the face of Executive Order 12866. I am thus compelled to call upon OIRA Administrator Graham—again—to return any NSR rulemaking package to EPA pending the agency's submission of the required analysis.

Whenever political appointees at EPA are confronted with the devastating effects that the announced NSR rollbacks will have on public health and the environment, they assert that President Bush's Clear Skies Initiative will obviate New Source Review.[103] This assertion ignores a key fact: whereas the announced NSR rollbacks will apply to all of the approximately 17,000 large industrial facilities in this country, the caps proposed for the CSI would only apply to the nation's approximately 1,500 power plants. CSI would actually allow 50 percent more sulfur emissions than current law, and delay safer standards by 8 years. It would also permit three times more toxic mercury emissions than existing law, and it would allow hundreds of thousands of tons of additional nitrogen oxide pollution. And of course, whereas EPA

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[99] 61 Fed. Reg. 38,250 38,319 (July 23, 1996).
[100] Exec. Ord. No. 12866, Section 1(b)(6) (Sept. 30, 1993).
[101] Id., Section 3(f)(1) (Sept. 30, 1993).
[102] Id., Section 6(a)(3)(C)(ii).
[103] See, e.g., BNA Daily Environment Report, "Whitman Says Clear Skies Proposal Will Reduce Emissions Faster Than Clean Air Act," April 8, 2002.

has announced final rules eviscerating New Source Review, the Clear Skies initiative has not even been introduced as legislation yet.

The Administration thus fails to offer any effective rebuttal to the evidence indicating that rules announced on June 13 will impose a staggering cost on this country—in the form of premature deaths, asthma attacks, birth defects, heart attacks, haze, acid rain, and all the attendant horrors of climate change. For that reason, and because the announced rules purport to repeal a vital portion of the Clean Air Act, I respectfully ask that these Committees do everything in their power to prevent these rollbacks from ever taking effect.

STATEMENT OF DONALD ELLIOTT, CO-CHAIR, ENVIRONMENTAL PRACTICE GROUP, PAUL, HASTINGS, JANOFSKY AND WALKER, PROFESSOR OF LAW, YALE AND GEORGETOWN LAW SCHOOLS[1]

Mr. Chairman and distinguished members of the committee: It is a great pleasure to be testifying again before these two distinguished Committees in a rare joint session on the very important legal and policy issues raised by the Administration of the "new source review" (NSR) provisions of the Clean Air Act.

EPA's many changing interpretations of NSR over the years have created a legal mess of baffling complexity that raises a host of separation of powers and administrative law issues that only a law professor could love. The good news is that the NSR controversy makes a great hypothetical for a law school exam (and I have used it as such at least twice in my administrative law courses at Yale and Georgetown). Unfortunately, the bad news, which is much more important, is that major parts of our country's economic infrastructure—including but not limited to the electric power industry—are now threatened with great legal uncertainties and huge penalties. As a result, as documented by EPA's recent NSR report, plants are delaying making needed repairs and changes to equipment. In the long run this threatens the reliability of our electricity supply and keeps inefficient equipment on line when it would benefit our economy to replace it with more modern equipment.

The ultimate solution in my view is to replace the antiquated, inefficient NSR program for existing plants with a modern trading system. But in the meantime, I applaud the Administration's recent attempt to do what it can to resolve the huge uncertainties about what is legal and what is illegal under the NSR program by creating safe harbors through the rulemaking process. It took great courage to touch the issue at all, because NSR is rapidly becoming the proverbial "third rail" of U.S. environmental politics. Any action—no matter how modest and reasonable—will immediately be denounced as a rollback of historic proportions in an election year. It is very easy for us no longer in the political arena to criticize. I must admit that I was General Counsel of EPA at the time of the 7th Circuit's WEPCO decision in 1990, which helped to create the current NSR controversies.[2] Urged on by majorities in both houses of Congress during the 1990 Clean Air Act Amendments to "fix the WEPCO problem," the first Bush Administration came out with an NSR interpretative rule in 1992,[3] which I thought had resolved the WEPCO problem, at least for the electric utility industry. However, as a prelude to the current NSR enforcement initiative, the Clinton Administration attempted to renounce our interpretation of NSR—without any notice and comment—by renouncing it in a proposed rule in 1998.[4]

So I have to admit that I was unsuccessful in getting the problem resolved when I was in the government, so perhaps it is churlish of me to criticize others. But nevertheless, I do feel that the current Bush Administration did not go far enough in two ways. First, in my opinion, the safe harbor portions of the proposed NSR rule should have been made immediately effective as an "interim final" rule under the "good cause" provisions of the Administrative Procedure Act.[5] Massive uncertainty has been created by vague caselaw (which is almost certainly wrongly decided under more recent Supreme Court precedents[6]) and by EPA's misguided NSR enforcement

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[1] Co-Chair Environmental Practice Group, Paul, Hastings, Janofsky & Walker; Professor (adj) of Law, Yale and Georgetown Law Schools; Former General Counsel, Environmental Protection Agency.

[2] *WEPCO* v. *Reilly,* 893 F.2d 901 (7th Cir. 1990).

[3] *WEPCO Interpretative Rule*, 57 Fed. Reg. 32314 (July, 1992).

[4] 63 Fed. Reg. 39860 (July 24, 1998).

[5] 5 U.S.C. § 553(b)(3)(B).

[6] The WEPCO court gave "substantial deference" to EPA's interpretations of the statutory terms and "even more" to EPA's interpretations of its NSR regulations under the Chevron doctrine. 893 F.2d at 906–907. However, under more recent Supreme Court precedent, Chevron def-

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initiative. While notice and comment is important, it is simply untenable to wait another 3–5 years or more for a resolution of this controversy in the courts and through the rulemaking process. Administrative law specifically recognizes the power of agencies to put rules into immediate effect for good cause in the meantime while taking comments. EPA has often used this power in the past when court decisions have created undesirable uncertainty, such as following the invalidation of the mixture-and-derived from rule under RCRA in 1991.[7]

Second, I believe that the Administration should immediately conform its litigating position in the pending NSR enforcement cases to the policy position that the Administration has taken in the proposed rules. I disagree with my good friend Assistant Attorney General Thom Sansonetti that it is going to be viable for the U.S. Government to pursue multi-billion dollar cases based on the premise that the same words in the law meant one thing in 1985, another thing in 1992, still another in 1996, yet another in 1998 and will someday mean something still different in the future.

I also disagree strongly with those who imply that the pending enforcement cases brought in a previous Administration should somehow disable a new Administration from implementing its views of good public policy. As I indicated in my testimony before Government Affairs last March, I see this as a fundamental Constitutional question of who is running the government—the President and the Officers of the United States confirmed by this Senate, or the career enforcement staff at EPA. Just as the Clinton Administration was free to walk away from the first Bush Administration's NSR interpretation in 1998—provided of course that proper procedural formalities were observed[8]—so too the second Bush Administration should be free to reinstate its own NSR interpretations and policies.

Of course, the Congress can make the Administration pay a price politically for its actions. But, in my opinion, NSR is the wrong issue to make the touchstone for good environmental policy. The NSR program is the greatest failure in the Administration of our environmental laws in my professional lifetime. It has failed to work for 25 years, and now it badly needs to be replaced with something that does work. Case-by-case, plant-by-plant litigation to force individual plants to install best available control technology is at best an antiquated regulatory technology. It is slow, expensive and uncertain. There has to be a better way. The better way is clear. It is a modern, efficient cap and trade system—a concept that has proven remarkably successful in the Acid Rain Trading system under the 1990 Amendments,[9] and which now has tri-partisan support in both the Administration's "Clear Skies Initiative" and Senator Jeffords' S. 556, which was recently reported out by this Committee. A modern, efficient trading system will achieve far greater pollution reductions in far less time and at far less expense—not to mention the side-benefit of putting lots of pesky environmental lawyers out of business! In my view, we should move promptly on a tri-partisan basis as quickly as possible to replace the antiquated, dysfunctional NSR system for existing plants by legislating a modern efficient trading system.

What has caused the great NSR debacle? There is plenty of blame to go around—and I probably share some of it. I had been nominated as General Counsel of EPA but not yet confirmed when the WEPCO case was argued, and I failed to properly supervise my staff and did not know the position on NSR issues that EPA was advocating until after the decision came down. The courts are partially to blame, because the cases to date have temporized by promulgating vague, multi-factor tests that fail to give clear guidance to industry as to what is and is not permitted. EPA has issued multiple and inconsistent interpretations over the years. There have been so many of them that I doubt that any of them will ultimately receive much deference from the courts. When invited by the Administration to review the legal situation, the Department of Justice in its recent report ducked the key issues, and said merely that EPA's latest interpretation was not so clearly wrong that it would be uneth-

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erence is not appropriate for lower level agency interpretations that did not go through rulemaking or adjudication or for positions first advanced in litigation. See *U.S.* v. *Mead Corp.*, 533 U.S. 218 (2001).

[7] *Shell Oil Co.* v. *EPA*, 950 F.2d 741 (D.C. Cir. 1991)(per curiam).

[8] *Motor Vehicle Manufacturers Assn.* v. *State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29 (1983).

[9] The White House, Executive Summary—The Clear Skies Initiative February 14, 2002 ("The acid rain cap and trade program created by Congress in 1990 reduced more pollution in the last decade than all other Clean Air Act command-and-control programs combined, and achieved significant reductions at two-thirds of the cost to accomplish those reductions using a "command-and-control" system. . . . The Acid Rain program enjoys nearly 100 percent compliance and only takes 75 EPA employees to run—a track record no command-and-control program can meet.")

ical to continue to argue it.[10] DOJ then ducked entirely the key issue of whether industry had been given fair notice of EPA's newest interpretation of NSR requirements, punting that central issue entirely to the courts. Unless Congress steps in, I fear that we are now embarked on a decade-long process of litigation that will require several Supreme Court decisions to clarify the law.

Much of the blame for the current NSR mess must also be laid squarely at the doorstep of Congress. In the text of the 1970 Clean Air Act, Congress created a basic distinction between the pollution requirements applicable to "new" as opposed to existing plants. Then, in so-called "technical amendments" in 1977—which were never debated or properly vetted in Committee hearings—Congress extended the concept of "new" plants to included "modifications" of existing plants.[11] But in its wisdom, Congress failed to adequately define the key operative concept of a "modification" in the statute.[12] That statutory ambiguity over how to define the nature of the "modifications" that convert an existing plant into the equivalent of a "new" plant for purposes of installing state-of-the-art pollution controls has been at the root of a great deal of unproductive and unnecessary NSR legal controversy over the years.

It simply cannot be that literally any modification—no matter how trivial—triggers NSR and converts every existing plant into a new plant. Somehow someone has to distinguish between those physical and operational changes that trigger new source review and those that don't. To date, it has proved impossible for the legal system to come up with any clear dividing line that will stand the test of time. EPA has repeatedly tried to resolve this controversy through a variety of changing rules and interpretations over the years. By rule, EPA has exempted certain activities such as "routine repair and replacement of equipment,"[13] and required an increase in emissions for a modification to trigger NSR. But how to define what repairs and replacements of equipment are "routine"? At one point, EPA even officially defined "routine" in the Federal Register as what is "routine . . . within the relevant industrial category"[14]—which brings to mind Churchill's line about a question wrapped in a riddle wrapped in an enigma. EPA's legal staff also developed the fascinating theory of "potential emissions," so that a plant was considered to have "increased" its emissions even though its actual emissions went down! Over the years, EPA has come out with many shifting interpretations of what constitutes a "routine" repair and replacement, and now in its enforcement cases, EPA is arguing for yet a different definition than the ones that it advanced in the past or the ones that it is now proposing to implement through the rulemaking process. I do applaud the Administration's courageous attempt to bring some clarity to the legal chaos that is the NSR program today through its proposed safe harbor rule. There have already been so many varied and shifting interpretations by EPA in the past, however, that I seriously doubt that the courts will ultimately give much deference to whatever construction EPA now attempts to place on the statutory terms.[15]

That unpleasant fact leaves us with only two real options going forward—either slug it out in many more years of unproductive litigation, probably going to the Supreme Court several times, before we finally find out what the term "modification" really means in the NSR provisions of the Clean Air Act. Or alternatively, as I prefer, Congress should act to put a merciful end to the NSR controversy by legislating a modern, more efficient replacement, such as the trading system advocated by the Administration in its Clear Skies Initiative and also endorsed in Senator Jeffords' proposal.

Realistically, I don't think there can be any serious question that slugging it out in continuing litigation is bad environmental policy that will really only benefit the lawyers—and law professors—and maybe a few politicians who can claim to be taking decisive action to fight polluters, if not actually to benefit the environment. NSR litigation makes those who participate in it feel good, because they can imagine that they are taking tough action to benefit the environment. But in reality, the NSR approach of case-by-case litigation to force each individual plant to install best available control technology is not going to produce anything approaching the environ-

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[10] United States Department of Justice Office of Legal Policy, New Source Review: An Analysis Of The Consistency Of Enforcement Actions With The Clean Air Act And Implementing Regulations (January 2002).

[11] 123 Cong. Rec. H36327–36334, S36250–36259 (Nov. 1, 1977).

[12] The Clean Air Act has only one statutory definition of "modification" and it is in a different section: "The term "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." CAA § 111(a)(4).

[13] 40 C.F.R. § 52.21(b)(2)(iii)(a).

[14] 57 Fed. Reg. 32326 (July 21, 1992).

[15] Compare city of *Chicago* v. *Environmental Defense Fund,* 511 U.S. 328 (1994).

mental benefits that will come from legislating a trading system to replace the antiquated and dysfunctional NSR program for existing sources.

RESPONSES OF E. DONALD ELLIOTT TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. During the hearing and in your testimony, you advocate for the replacement of the NSR program with a cap and trade system. How does a cap and trade system meet the goals that the NSR program is directed toward?

Response. The NSR program for existing plants can require the installation of pollution control technology on a unit-by-unit basis if a major "modification" occurs. This requirement to install pollution control technology is not an end in itself, but rather is a means to the ultimate end of achieving air quality goals. A well-designed cap and trade program will achieve air quality goals much more quickly, efficiently, fairly and effectively with less expenditure of private and government resources than a litigation-driven, unit-by-unit command-and-control system such as NSR. The fundamental insight behind a cap-and-trade program is to use the market to allocate control requirements and to achieve the most efficient mix of controls system-wide. This approach is fundamentally inconsistent with the idea behind NSR, which is for government to decide what pollution control system is the "best available control technology" (BACT) for each individual unit on a case-by-case basis. The ultimate goal is the same, but cap-and-trade uses market trading to allocate the control burden, whereas NSR uses case-by-case bureaucratic decisions and litigation (with their inherent uncertainties, delays, expense and unintended consequences). NSR as envisioned in EPA's recent NSR litigation position loses sight of the big picture goals, and diverts enormous resources to micro-manage constantly moving unit-by-unit targets for every change that EPA deems to be a "modification."

Question 2. What effect does a program like NSR have on the effectiveness of a cap and trade system?

Response. Maintaining the present NSR program for existing sources could eviscerate a trading program. There would be nothing left to trade under EPA's recent litigation-driven interpretation of NSR that essentially deems all units "modified" and subject to stringent, technology-based controls under NSR. As indicated above, trading and NSR are fundamentally incompatible and mutually redundant. Because of its high transaction costs, NSR cannot be implemented effectively, but if somehow it could be, and all plants magically already had BACT controls, there would be nothing left to trade. The whole philosophy behind trading is that some plants will control more stringently than others, creating the most efficient system-wide mix. EPA's recent NSR litigation position, on the other hand, imagines that government can specify the "best" control system for each individual plant every time that it has a scheduled outage. In practice, however, government is not able to design a system-wide mix of controls that is as efficient as that which will emerge from market trading. We can have a litigation-driven approach to NSR or trading, but not both.

Question 3. If abolishing the NSR program was not an option, how would you recommend that Congress clarify or reform NSR?

Response. If it is not possible to abolish NSR outright, the program should be amended to limit NSR to truly "new" plants and to exempt "modified" plants that are covered by an effective cap-and-trade program. Requiring retrofit of additional control technology for simply using a unit up to its fully capacity makes no sense. If this is also not possible, and NSR must be maintained for existing plants as well, it should be clarified to have clear triggers for installing technology. For example, modest minimum technology requirements could become applicable to a plant after a specified number of years of operation. This compromise approach would essentially combine section 481 of the Administration's Clear Skies Initiative S. 2815 with section 711(a) of Senator Jeffords' S. 556. A two-tiered system is possible in which an NSR program is maintained to impose minimum technology requirements on existing plants automatically after a period of years of operation. This would maintain an NSR program and would not be too damaging to a cap-and-trade program, provided that the minimum technology requirements are modest and not too constraining on trading.

RESPONSES OF E. DONALD ELLIOTT TO ADDITIONAL QUESTIONS FROM SENATOR WYDEN

Question 1. You have testified that the Clinton Administration attempted to renounce EPA's previous interpretation of NSR without any notice and comment, but

you say they did this by doing so in a proposed rule. Isn't a proposed rule just that? I believe the Agency by publishing it as a proposed rule satisfied the notice and comment requirement, is that correct?

Response. No. With all due respect, the situation is not that simple. Both your question and my testimony are not sufficiently clear about the difference between legislative and interpretative rules. Interpretative rules state the agency's interpretation of law, and they can become immediately effective without notice and comment (provided that affected parties receive appropriate notice). See Administrative Procedure Act, 5 U.S.C. § 553(b)(3)(A) and § 552(a)(1)(D) and (E). In the course of a preamble to a proposed legislative rule, EPA may promulgate new interpretations of existing law or statutory terms. Those interpretations then become immediately effective as the agency's current view of the law even if the proposed legislative rule is never finalized. That is exactly what happened in the case of the Clinton Administration's 1998 renunciation of the 1992 Bush Administration NSR interpretations. In the course of the preamble to the 1998 legislative rule that was cited in my testimony, EPA disavowed and renounced its 1992 legal interpretations, claiming that the 1992 legal interpretations were an unwarranted deviation. Not only is this "revisionist history," but it was a major change in policy that was not preceded by any public input. In direct contradiction to its own 1992 WEPCO-Fix rulemaking, EPA's 1998 preamble states:

> One particular circumstance where EPA has been dissatisfied with the WEPCO rule is in the exclusion of demand growth from predictions of utility units' future actual emissions. The Agency's promulgation of the WEPCO rule represented a departure from longstanding practice under which emissions increases that followed non-routine and otherwise nonexempt changes at a source were presumed to result from the change. At the same time, EPA believed that there was a way to disassociate utility units' post-change emission increases which would have otherwise occurred due to demand growth as a purely independent factor from those that resulted directly from the physical or operational change. The EPA has reconsidered that departure, and has tentatively concluded that its 1992 departure is not appropriate and should not be continued, both as a general matter and especially in view of recent developments in the electric power sector.
>
> The EPA's experience leads to the conclusion that sources generally make non-routine physical or operational changes which are substantial enough that they might trigger NSR in order to increase reliability, lower operating costs, or improve operational characteristics of the unit and do so in order that they may improve their market position. . . . For these reasons, EPA now seriously questions whether market demand should ever be viewed as a significant factor in answering the relevant regulatory question of whether an emissions increase results from a physical or operational change at an existing source, since in a market economy, all changes in utilization—and hence, emissions—might be characterized as a response to market demand.
>
> [T]here is no plausible distinction between emissions increases due solely to demand growth as an independent factor and those changes at a source that respond to, or create new, demand growth which then result in increased capacity utilization. 63 Federal Register 39860 (July 24, 1998, emphasis added).

These statements are legally significant and immediately effective in that courts give little or no deference to agency interpretations that are inconsistent and shifting. See, e.g. *City of Chicago* v. *Environmental Defense Fund*, 511 U.S. 328 (1994). My discussions with EPA legal staff persuade me that EPA knew exactly what it was doing and was renouncing prior legal interpretations that could prove troublesome for EPA in the NSR enforcement cases that were about to be brought. This major change in NSR policy was not preceded by notice and comment, nor any other form of public participation.

I do not contend that these major changes in NSR legal interpretations were technically illegal because they were not preceded by notice and comment. As noted above, interpretative rules are exempt from notice and comment requirements by statute. Similarly, much of what the current Bush Administration is proposing to do regarding NSR is also in my view an interpretation of statutory terminology that is technically an interpretative rule that does not require notice and comment for a legalistic perspective. However, notice and comment can be provided in the agency's discretion. Much of the discussion within this Committee about the desirability of notice and comment is not based on the technical requirements of the Administrative Procedure Act, but rather proceeds from the sensible notion, which I share, that as a matter of good public policy, major changes in important policies should be preceded by public participation and input. My point was that this norm, which is now

being invoked so strongly by the Committee against the Bush Administration, was clearly breached by the Clinton Administration in 1998. The current Bush Administration has already provided far more opportunity for public participation, scrutiny and comment on its contemplated changes in NSR policy than was provided by the Clinton Administration in reversing its predecessor's policies and putting the new NSR policies into effect in 1998.

Question 2. In your testimony you refer to EPA's definition of "potential emissions" and attribute this definition to resulting in a plant being considered to increase its emissions even though there is a decrease in actual emissions. Do you have any actual examples that you can quantify? Are you aware of (or can you provide) any estimates that have been made of the decrease in actual emissions that have been reported as increases in potential emissions?

Response. Yes, I am aware of a number of actual cases in which actual emissions have decreased but hypothetical "potential" emissions increased, but I have not done a quantitative study to collect all of these cases and add up the total tons involved. (If a comprehensive quantification is really desired, this might be a good project for GAO, which has the resources to conduct such studies, which I do not.) Increases in "potential emissions" were the essence of EPA's legal position in both the *Puerto Rican Cement* case (which involved construction of an entirely new emission unit never before operated) and *WEPCO* (which rejected the actual-to-potential test for already existing units) cases. A major controversy over EPA's "potential emissions" theory then erupted as a result during the first Bush Administration. In the 1992 Interpretative Rule, EPA partially backed off from its potential emissions theory by committing to using instead an "actual to projected actual" approach for existing electric utility plants in the future, but the actual to potential test was maintained in effect for all other industry segments. Thus, contrary to the implication of the question, the "potential emissions" theory is definitely still very much alive and still being applied today by EPA as a matter of stated agency policy to most industries.

EPA's official Background Paper for the Administration's NSR Review explains the current status of the potential emissions theory as follows: "Current emissions are measured using actual emissions over the recent past, usually designated as the last 2 years. Future increases are generally determined using potential to emit (which, as described above, is the maximum capacity to emit, except as limited by a permit). The difference between the future potential and the past actual emissions is compared to the relevant significance level. An exception is the electric utility industry, which estimates future emissions using a special calculation that resulted from a Federal rulemaking following a Federal court opinion. The utility calculation is established in a rule, commonly known as the "WEPCO rule", which EPA finalized on July 21, 1992. This rule provides that utilities compare past actual emissions to projected future actual emissions." EPA, NSR 90-Day Review Background Paper (June 22, 2001)(Docket A–2001–19 Document II-A–01) *http://www.epa.gov/air/nsr-review/nsr-review.pdf* at p. 7 (emphasis supplied; footnotes omitted).

The actual-to-potential test makes no attempt to correlate a causal link between a particular "physical change or change in the method of operations" and a resulting "increase in the amount of emissions." Historically, EPA had required a real increase in emissions to trigger NSR. The wording of Section 111(a)(4) of the Clean Air Act on its face, as well as it has been interpreted by EPA historically and in the 1992 Federal Register preamble, clearly requires a real increase in emissions to trigger NSR. You need only look at EPA's annually published air quality and emissions trends reports to confirm that in the aggregate, actual tons per year of emissions of SO_2, NOx, and PM/PM_{10} are decreasing, despite increases in population, GNP, energy production, and vehicle miles traveled. See http:www.epa.gov/airtrends and related links.

Question 3. You compare the Clear Skies Initiative to Senator Jeffords' S. 556 recently reported out by the EPW Committee. You praise them both, in fact. S. 556 requires that new or modified power plants still go through New Source Review, and some people are opposed to that. Are you saying you are in favor of that?

Response. No. When an effective cap-and-trade program is put in place, I believe that it should replace NSR for existing sources, for all the reasons that are indicated above in my answers to Senator Voinovich above. As it presently exists, NSR for modified plants is not only redundant but destructive of trading.

STATEMENT OF JOSEPH BAST, PRESIDENT OF THE HEARTLAND INSTITUTE ON NEW SOURCE REVIEW REFORM

Gentlemen, I respectfully add my voice to those of many who believe the New Source Review Program requires substantial and immediate reform.

The Heartland Institute is a national nonprofit research and education organization based in Chicago. Since our founding in 1984, we have produced research and commentary on a wide range of public policy issues, including environmental policy. Since 1998, Heartland has published *Environment & Climate News*, a monthly newspaper devoted to covering environmental news.

Because of the importance of New Source Review reform, I assembled a three-person team to study the Environmental Protection Agency's June 13, 2002, New Source Review: Report to the President, and to produce a Heartland Policy Study evaluating its findings and recommendations. The team consisted of Heartland's Science Director, Dr. Jay H. Lehr, editor of McGraw-Hill's Standard Handbook of Environmental Science, Health, and Technology (2000); the managing editor of Environment & Climate News, James Taylor; and myself. My bio and Dr. Lehr's appear at the end of these comments; past issues of *Environment & Climate News* featuring Mr. Taylor's reporting can be found on Heartland's Web site at www.heartland.org.

Our complete evaluation runs to some 23 pages and can also be viewed on The Heartland Institute's Web site at www.heartland.org. Printed copies are available by calling 312/377–4000. We found:

• EPA accurately described instances where current NSR policy has discouraged investments needed to improve productivity and plant safety, even when those investments would reduce emissions of pollutants.

• EPA's recommended reforms would remove counterproductive policies without harming air quality.

• EPA's recommendations and some of the ideas that apparently will be part of President Bush's "Clear Skies Initiative" represent progress in bringing one of the nation's least effective environmental regulations up-to-date.

Following is a more complete summary of our evaluation.

WHAT THE REPORT TO THE PRESIDENT SAYS

EPA's Report to the President summarizes extensive public comments and previous EPA reviews of NSR enforcement policies, along with case studies showing how current NSR enforcement policies have had negative effects on businesses, workers, consumers, and the environment. EPA identified three areas where reform is needed:

• EPA's uncertain and increasingly narrow interpretation of the "routine maintenance, repair and replacement" exclusion.

Consistent with Congress's intent, EPA until 1999 generally excluded "routine maintenance, repair and replacement" (RMR&R) activities from the NSR permitting process. As early as 1988, though, EPA began to challenge the meaning of "routine," subjecting or threatening to subject more activities to NSR than before.

The Report to the President concludes that "concern about the scope of the routine maintenance exclusion is having an adverse impact on [utility] projects that affect availability, reliability, efficiency, and safety." Concerning nonutility companies, EPA says "concern about the scope of the routine maintenance exclusion is having an adverse impact on industries outside the energy sector. It also is credible to conclude that projects have been discouraged that might have been economically and/or environmentally beneficial without increasing actual emissions."

• EPA's substitution of "actual-to-future-potential" for "actual-to-future-actual" in estimating likely changes in emissions.

In 1996, EPA changed the way it estimates the effect of facility modifications on emissions for nonutility emitters from "actual-to-future-actual" to "actual-to-future-potential," which means the decision to apply NSR is determined by the emitter's "potential to emit" rather than the actual change in emissions likely to occur.

In its Report to the President, EPA concluded "the current NSR program is having an adverse impact on energy efficiency by discouraging projects that may improve energy efficiency, or may increase capacity and reliability without actually increasing pollutant emissions. In some cases it may be discouraging projects that decrease emissions because of the 'actual-to-potential' test used for these industries."

• Emissions from de-bottlenecking and aggregation

Originally, EPA ruled that only the direct effect on emissions from the unit being modified would be considered in determining whether an NSR permit was required. More recently, EPA has moved to a more expansive definition under which ancillary increases in emissions from unmodified but "de-bottlenecked" units must be in-

cluded. EPA is also combining separate projects and claiming the aggregate effect on emissions is sufficient to trigger NSR.

EPA'S REFORM RECOMMENDATIONS

When it released its Report to the President, EPA also issued seven recommendations for NSR reform. The first four were proposed by the Clinton Administration in 1996 but never implemented:

- *Plantwide Applicability Limits (PALs).*—Regulated emitters would be allowed to modify their plants without obtaining a major NSR permit provided their emissions do not exceed a plantwide cap based on an actual emissions baseline. Such "Plantwide applicability limits" (PALs) would effectively expand the RMR&R exclusion and resolve conflicts over de-bottlenecking.
- *"Clean unit" exclusion.*—Regulated emitters who achieved Federal BACT or LAER control levels or comparable State minor source BACT since 1990 would be entitled to a "clean unit exclusion" from NSR. A clean unit would trigger NSR only if permitted allowable emissions increase.
- *Exclusion for pollution control and prevention projects.*—Modifications that result in a net overall reduction in air pollutants, including when an emitter switches to a cleaner-burning fuel, would be excluded from NSR, subject to certain conditions. Caps on emissions under the National Ambient Air Quality Standards program and other programs would remain in place.
- *Return to actual-to-future-actual methodology.*—The "actual-to-future-potential" emissions test would be replaced with the previously used (and still used for utilities) "actual-to-future-actual" test, which is a more realistic calculation of future emissions. Only emission increases caused by a given modification would be considered. The baseline for calculating current actual emissions would be the highest consecutive 24-month period within the immediately preceding 10 years.

Three additional reforms of NSR recommended by EPA would need to go through the formal rulemaking procedure (including public comment) before being implemented. They are:

- *More objective definition of the RMR&R exclusion.*—EPA proposes to set cost-based thresholds below which projects would automatically qualify for the RMR&R exclusion. The thresholds would be set on an industry-by-industry basis and would exclude costs incurred for installing and maintaining pollution control technology.
- *De-bottlenecking.*—EPA proposes to clarify that, when calculating actual emissions associated with a modification, emitters generally will need to look only at the unit undergoing the change. Emissions from units "upstream" or "downstream" of the unit being changed would be considered only when the permitted emissions limit of the upstream or downstream unit would be exceeded or increased.
- *Aggregation.*—EPA proposes to consider modifications to be separate and independent projects unless they are dependent upon another project to be economically or technically viable or the project has been intentionally split from other projects to avoid NSR. EPA says it "generally would defer to the States to implement the Agency's aggregation rule."

EVALUATION OF EPA'S RECOMMENDATIONS

Since 1980, EPA has released some 4,000 pages of "guidance" and produced many (often conflicting) letters and several proposals for NSR revision, none of them finalized. Testimony to EPA contains many reports by industry spokespersons alleging that EPA has frequently and substantially changed its enforcement policies without going through the formal (and legally required) rulemaking procedure, causing considerable uncertainty within the regulated community.

We found these reports to be credible and uncertainty to be justified. Current policies plainly have the unintended consequences of discouraging worthwhile investments and maintenance activities that would benefit companies and consumers as well as the environment. Many of these investments and activities were once correctly understood to be outside the scope of NSR, and ought once again be put beyond NSR's reach.

EPA's recent enforcement of policy reinterpretations has forced companies to count imaginary emissions from previously unused capacity in determining whether a repair or other moderation would cause a significant increase in emissions. As a result, under current rules most repair projects would trigger a full New Source Review, even if actual emissions decrease as a result of the modification. Given the cost of complying with the NSR permitting process, many companies choose not to upgrade and modernize plants or even make routine changes and repairs. Efficiency improvements that would have reduced emissions and energy consumption or improved worker or community safety have been foregone.

The NSR policy changes recommended by EPA, if put into practice, would not compromise air quality. We are skeptical that NSR has had a major positive effect on air quality since 1977, since air quality was improving prior to that year and other air quality regulations were responsible for much larger emission reductions than can be traced to the NSR program. Predictions that NSR reform would result in substantial increases in emissions strike us as partisan rhetoric, not analysis. The air quality goals and standards for protecting public health and the environment remain intact, and those aspects of the current program that unintentionally increase emissions by discouraging investments in energy efficiency would be avoided.

EPA's proposals would fix some of the biggest problems encountered by an aging, inefficient, and expensive environmental regulatory program. Replacing the program outright as it affects utilities with the "Clear Skies Initiative," as also proposed by the Bush Administration, would be a further step in the right direction, though judgment must be reserved until legislation for the Initiative is made public.

The country would be better served if NSR were changed to clarify and make more certain the scope of the routine maintenance exclusion and the method used to measure future emissions. Even better would be a move away from the costly and often counterproductive style of end-of-the-pipe regulation represented by NSR.

CONCLUSION

Everyone agrees that clean air is one of the most important rights of American citizens and goals of national environmental policy. The failure to apply common sense to the New Source Review program, though, has burdened American consumers and American industry with higher economic costs and higher levels of pollution than were envisioned by Congress when it wrote the Clean Air Act amendments of 1977. As EPA itself now admits on pages 31–32 of its Report to the President:

> Our findings in this report ratify a longstanding and broadly-held belief that parts of the NSR program can and should be improved. For example, we conclude above that changes to NSR that add to the clarity and certainty of the scope of the routine maintenance exclusion will improve the program by reducing the unintended consequences of discouraging worthwhile projects that are in fact outside the scope of NSR.

NSR was adopted at a time when forecasts of a "post-industrial era" were naively thought to justify anti-manufacturing policies. Balancing costs against benefits was thought to be unnecessary, and the effects of regulations on the incentives of regulators and members of the regulated community alike were poorly understood and often dismissed as unimportant.

Since 1977, air quality, technology, and regulatory theory have improved dramatically, creating new opportunities to more cost-effectively protect air quality. Investors, too, have rediscovered the inherent value of companies that manufacture real goods and services, and the negative impact that defective regulations can have on global competitiveness.

It is entirely appropriate, at this time in U.S. history, to re-examine the rules and regulations known to be ineffective or damaging to the manufacturing sector of the country's economy. EPA's recommendations and the Bush Administration's Clear Skies Initiative are good places to start, but they do not mark the end of the need for reform.

Thank you for this opportunity to submit my comments to the record. Please do not hesitate to contact me or members of my staff if I can be of any assistance to your Committees or to you and your staffs.

STATE ATTORNEYS GENERAL

A COMMUNICATION FROM THE CHIEF LEGAL OFFICERS OF THE FOLLOWING STATES: ALASKA, CALIFORNIA, CONNECTICUT, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, RHODE ISLAND, VERMONT

July 17, 2002.

Hon. GEORGE W. BUSH,
The White House,
Washington, DC.

RE: CLIMATE CHANGE

DEAR PRESIDENT BUSH: Climate change presents the most pressing environmental challenge of the 21st century. We applaud the efforts of your Administration in the

release this May of a formal, comprehensive report that details the seriousness of this problem. U.S. Climate Action Report 2002, U.S. Dept. of State, Washington, DC, May 2002 ("Report"). Unfortunately, however, the Administration's current policy is inconsistent with the import of the Report's findings by failing to mandate reductions of greenhouse gas emissions. To fill this regulatory void, States and others are being forced to rely on their available legal mechanisms. The resulting combination of State-by-State regulations and litigation will necessarily lessen regulatory certainty and increase the ultimate costs of addressing climate change, thereby making the purported goals of the Administration's current policy illusory. For these reasons, we write today to urge you to reconsider your position on the regulation of greenhouse gases and to adopt a comprehensive policy that will protect both our citizens and our economy.

The Report Documents the Need for Dramatic Action

The Report documents ongoing climate change that will cause significant impacts on virtually every aspect of our planet and way of life. We already see the signs of such change everywhere. Some are dramatic, such as the recent collapse of a portion of the Antarctic ice shelf the size of Rhode Island, the open water at the North Pole, or millions of acres of spruce trees in Alaska killed by insects. Others are less overt, but are also powerful statements of the enormity and pervasiveness of the problem. The Report is replete with examples. For instance, the Report documents that average temperatures have already increased 1 degree Fahrenheit over the past century, and it projects that over the next century, average temperatures will likely increase 5–9 degrees Fahrenheit. Increased temperatures will dramatically change climates in every State and destroy some fragile ecosystems. The Report also documents that sea levels have already risen 4–8 inches over the last century, and it projects that they will likely rise another 4–35 inches over the next. Rising sea levels will cause more flooding along the coast and it will obliterate vital estuaries, coastal wetlands and barrier islands. While some areas will face increased storms and storm damage, other areas—such as California and other parts of the West—will face dwindling supplies of water. Of perhaps the most concern, the Report documents potential health-related impacts of climate change, and a just-published study in the journal Science warns of increased risks from insect-borne diseases such as malaria and yellow fever.

The Report makes it clear that the question of whether global climate change is occurring is no longer in doubt, only the precise rate of change and the specific impacts of that change. It also repeatedly acknowledges that the dominant cause of climate change is carbon dioxide produced from the combustion of fossil fuels. Notably, the Report projects that greenhouse gas emissions will increase by 43 percent by 2020. Report at 6. It also notes "the long lifetimes of greenhouse gases already in the atmosphere and the momentum of the climate system." Report at 82. According to the Report, this means that impacts of climate change will continue to be felt for several centuries, "even after achieving significant limitation in emissions of CO_2 and other greenhouse gases." See Report at 103. The evidence marshaled in the Report refutes its own counsel of inaction and delivers a different message: an effective response to the confirmed dangers of global climate change must include immediate action to limit greenhouse gas emissions.

The Existing Administration Proposal is Inadequate and Increases Uncertainty

While we are certainly heartened that the United States has now officially recognized the existence and scope of the climate change problem, the Administration has yet to propose a credible plan that is consistent with the dire findings and conclusions being reported. The Administration's one proposal calls for a voluntary reduction of greenhouse gas "intensity" at roughly the same pace such reductions have occurred over the last 20 years. The Report itself strongly suggests that such voluntary reductions will be grossly overshadowed by existing atmospheric gases and, combined with ongoing and increasing emissions, will actually allow the problem to continue to worsen. In light of this, the Report implicitly calls this policy approach into question. See Report, at 50–51 (stating that there is "a need to re-evaluate existing climate change programs to ensure they effectively meet future economic, climate, and other environmental goals").

Despite conceding that our consumption of fossil fuels is causing serious damage and despite implying that current policy is inadequate, the Report fails to take the next step and recommend serious alternatives. Rather, it suggests that we simply need to accommodate to the coming changes. For example, reminiscent of former Interior Secretary Hodel's proposal that the Government address the hole in the ozone layer by encouraging Americans to make better use of sunglasses, suntan lotion and broad-brimmed hats, the Report suggests that we can deal with heat-related health

impacts by increased use of air-conditioning. Report at 82. Far from proposing solutions to the climate change problem, the Administration has been adopting energy policies that would actually increase greenhouse gas emissions. Notably, even as the Report identifies increased air conditioner use as one of the "solutions" to climate change impacts, the Department of Energy has decided to roll back energy efficiency standards for air conditioners.

To fill the void left by Federal inaction on this issue, some States are now initiating measures, within their borders, to reduce greenhouse gas emissions. For example, Massachusetts last year adopted State regulations requiring carbon dioxide reductions by power plants, and New Hampshire recently enacted "cap and trade" legislation. California's legislature has just passed a bill that will lead to the "maximum feasible" reductions of carbon dioxide emissions from vehicles. New York is also considering a carbon cap. Continued Federal inaction will inevitably lead to a wider range of State regulatory efforts. In addition, States and others are beginning to review their litigation options.

Only Mandatory Federal Carbon Caps of Appropriate Levels Can Provide Regulatory Certainty

We obviously support our States' regulatory and litigation efforts on this issue. At the same time, however, we want to make it clear that State-by-State action is not our preferred option. We believe that such regulation or litigation will increase the uncertainty facing the business community, thus potentially making the most cost-effective solutions more difficult. Moreover, we agree that the global nature of the climate change problem would be most efficiently addressed by comprehensive regulatory action at the national level. A recent Department of Energy Report concluded that the United States could address carbon dioxide emissions issues with minimal disruption of energy supply and at modest cost, but *only* with fully integrated planning. See Energy Information Administration, Office of Integrated Analysis and Forecasting, U.S. Department of Energy, "Analysis of Strategies for Reducing Multiple Emissions from Electric Power Plants with Advanced Technology Scenarios," SR/OIAF/2001–05 (October 2001). This integrated planning can only come with regulatory certainty.

In particular, we believe that a market-based program that would cap greenhouse gases holds great promise. Such an approach has a proven track record as one effective tool in the regulatory toolbox, as you have noted in other contexts. We strongly believe that prompt implementation of a market-based approach that caps greenhouse gas emissions would promote significant benefits for public health, welfare and the environment in a manner that would be consistent with strong economic policies.

Conclusion

We very much appreciate your Administration's formally acknowledging the magnitude and nature of the climate change problem. In light of the Report's findings, however, we urge you now to rethink the Administration's policy response to the problem. While individual States are prepared to lead the way, we believe that a strong national approach will allow for more efficient solutions that will better protect the American economy in the long run. Please do not hesitate to contact us on this critical issue.

Very truly yours,

Thomas F. Reilly, *Massachusetts Attorney General;* Bruce M. Botelho, *Alaska Attorney General;* Bill Lockyer, *California Attorney General;* Richard Blumenthal, *Connecticut Attorney General;* G. Steven Rowe, *Maine Attorney General;* Philip T. McLaughlin, *New Hampshire Attorney General;* David Samson, *New Jersey Attorney General;* Eliot Spitzer, *New York Attorney General;* Sheldon Whitehouse, *Rhode Island Attorney General;* J. Joseph Curran, Jr., *Maryland Attorney General;* William H. Sorrell, *Vermont Attorney General.*

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