106th Congress, 1st Session – – – – – – – – – – – – – – House Document 106–84

THE TEXT OF A PROPOSED PROTOCOL

MESSAGE

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

THE TEXT OF A PROPOSED PROTOCOL AMENDING THE AGREEMENT FOR COOPERATION CONCERNING CIVIL USES OF ATOMIC ENERGY BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF CANADA SIGNED AT WASHINGTON ON JUNE 15, 1955, AS AMENDED, PURSUANT TO 42 U.S.C. 2153(b)

JUNE 25, 1999.—Message and accompanying papers referred to the Committee on International Relations and ordered to be printed.

U.S. GOVERNMENT PRINTING OFFICE

69–011 WASHINGTON : 1999

To the Congress of the United States:

I am pleased to transmit to the Congress, pursuant to sections 123 b. and 123 d. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153(b) and (d)), the text of a proposed Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada signed at Washington on June 15, 1955, as amended. I am also pleased to transmit my written approval, authorization, and determination concerning the Protocol, and an unclassified Nuclear Proliferation Assessment Statement (NPAS) concerning the Protocol. (In accordance with section 123 of the Act, as amended by Title XII of the Foreign Affairs Reform and Restructuring Act of 1998 (Public Law 105–277), I have submitted to the Congress under separate cover a classified annex to the NPAS, prepared in consultation with the Director of Central Intelligence, summarizing relevant classified information.) The joint memorandum submitted to me by the Secretary of State and the Secretary of Energy and a letter from the Chairman of the Nuclear Regulatory Commission stating the views of the Commission are also enclosed.

The proposed Protocol has been negotiated in accordance with the Atomic Energy Act of 1954, as amended, and other applicable law. In my judgment, it meets all statutory requirements and will advance the nonproliferation and other foreign policy interests of the United States.

The Protocol amends the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada in two respects:

1. It extends the Agreement, which would otherwise expire by its terms on January 1, 2000, for an additional period of 30 years, with the provision for automatic extensions thereafter in increments of 5 years each unless either Party gives timely notice to terminate the Agreement; and

2. It updates certain provisions of the Agreement relating to the physical protection of materials subject to the Agreement.

The Agreement itself was last amended on April 23, 1980, to bring it into conformity with all requirements of the Atomic Energy Act and the Nuclear Non-Proliferation Act of 1978. As amended by the proposed Protocol, it will continue to meet all requirements of U.S. law.

Canada ranks among the closest and most important U.S. partners in civil nuclear cooperation, with ties dating back to the early days of the Atoms for Peace program. Canada is also in the forefront of countries supporting international efforts to prevent the spread of nuclear weapons to additional countries. It is a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and

has an agreement with the IAEA for the application of full-scope safeguards to its nuclear program. It also subscribes to the Nuclear Supplier Group (NSG) Guidelines, which set forth standards for the responsible export of nuclear commodities for peaceful use, and to the Zangger (NPT Exporters) Committee Guidelines, which oblige members to require the application of IAEA safeguards on nuclear exports to nonnuclear weapon states. It is a party to the Convention on the Physical Protection of Nuclear Material, whereby it has agreed to apply international standards of physical protection to the storage and transport of nuclear material under its jurisdiction or control.

Continued close cooperation with Canada in the peaceful uses of nuclear energy, under the long-term extension of the U.S.-Canada Agreement for Cooperation provided for in the proposed Protocol, will serve important U.S. national security, foreign policy, and commercial interests.

I have considered the views and recommendations of the interested agencies in reviewing the proposed Protocol and have determined that its performance will promote, and will not constitute an unreasonable risk to, the common defense and security. Accordingly, I have approved the Protocol and authorized its execution and urge that the Congress give it favorable consideration.

This transmission shall constitute a submittal for purposes of both sections 123 b. and 123 d. of the Atomic Energy Act. My Administration is prepared to begin immediate consultations with the Senate Foreign Relations and House International Relations Committees as provided in section 123 b. Upon completion of the 30-day continuous session period provided for in section 123b., the 60-day continuous session period provided for in section 123 d. shall commence.

WILLIAM J. CLINTON.

THE WHITE HOUSE, *June 24, 1999.*

PROTOCOL AMENDING THE AGREEMENT FOR COOPERATION
CONCERNING CIVIL USES OF ATOMIC ENERGY
BETWEEN THE
GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE
GOVERNMENT OF CANADA AS AMENDED

The Government of the United States of America and the Government of Canada;

Desiring to amend the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada signed at Washington on June 15, 1955, as amended by the Agreements signed at Washington on June 26, 1956, June 11, 1960, and May 25, 1962, and at Ottawa on April 23, 1980 (hereinafter referred to as "the Agreement");

Have agreed as follows:

ARTICLE 1

Article I of the Agreement is amended by changing the termination date to read "January 1, 2030" and by adding the following:

> "This Agreement shall continue in force thereafter for additional periods of five years each. Either Party may, by giving six months' written notice to the other Party, terminate this Agreement on January 1, 2030 or at the end of any subsequent five year period."

ARTICLE 2

Paragraph H of Article XII of the Agreement is amended to read:

> "Each Party shall take such measures as are necessary to ensure adequate physical protection of material, equipment and devices subject to this Agreement, over which a Party has jurisdiction and which are subject to the relevant Agreement specified in Article I bis, and apply criteria in accordance with the levels of physical protection at least equivalent to those set out in document INFCIRC/225/Rev. 3 of the International Atomic Energy Agency entitled 'The Physical Protection of Nuclear Material', or any revision of that document agreed to by the Parties. The Parties shall consult periodically, or at the request of either Party, concerning matters relating to physical protection."

ARTICLE 3

The 9th paragraph, paragraph "I," of Article XIV of the Agreement is amended by substituting "the Annex" in place of "Annex B."

ARTICLE 4

1. Article XV of the Agreement is amended to read: "The Annex shall constitute an integral part of this Agreement."

2. "Annex A" shall be deleted from the Agreement, and the heading of "Annex B" is amended to read: "Annex."

ARTICLE 5

This Protocol shall enter into force on the date on which the Parties exchange diplomatic notes informing each other that they have complied with all applicable requirements for its entry into force.

IN WITNESS WHEREOF the undersigned, being duly authorized, have signed this Agreement.

DONE at Washington, this 23rd day of June, 1999, in duplicate, in the English and French languages, both texts being equally authentic.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

FOR THE GOVERNMENT OF CANADA:

THE WHITE HOUSE

WASHINGTON

June 23, 1999

Presidential Determination
No. 99-30

MEMORANDUM FOR THE SECRETARY OF STATE
THE SECRETARY OF ENERGY

SUBJECT: Presidential Determination on the Proposed Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada

I have considered the proposed Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada signed at Washington on June 15, 1955, as amended, along with the views, recommendations, and statements of the interested agencies.

I have determined that the performance of the Protocol will promote, and will not constitute an unreasonable risk to, the common defense and security. Pursuant to section 123 b. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153(b)), I hereby approve the proposed Protocol and authorize you to arrange for its execution.

The Secretary of State is authorized and directed to publish this determination in the Federal Register.

William J. Clinton

NUCLEAR PROLIFERATION ASSESSMENT STATEMENT

Pursuant to Section 123 a. of the Atomic Energy Act of 1954, as Amended, With Respect to the Proposed Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada, as Amended

A. Introduction

This Nuclear Proliferation Assessment Statement (NPAS) relates to the proposed Protocol amending the 1955 U.S.-Canada civil nuclear cooperation agreement. This Protocol is being submitted concurrently to the President jointly by the Secretary of State and Secretary of Energy for his approval and authorization for signature.

Section 123 a. of the Atomic Energy Act, as amended by Title XII of the Foreign Affairs Reform and Restructuring Act of 1998 (P.L. 105-277) provides that an NPAS be submitted by the Secretary of State to the President on each new or amended agreement for cooperation concluded pursuant to that section. Pursuant to Section 123 a., the NPAS shall analyze the consistency of the text of the proposed agreement with all the requirements of the Act, with specific attention to whether the proposed Agreement is consistent with each of the criteria set forth in this subsection, and address the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the agreement for cooperation to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose.

The 1955 U.S.-Canadian civil nuclear cooperation agreement was amended extensively in 1980 pursuant to the requirements of the 1978 Nuclear Non-Proliferation Act. At that time, the U.S. Arms Control and Disarmament Agency (as authorized and required by law at that time) prepared a detailed NPAS, which concluded that the amended Agreement met all statutory requirements and advanced U.S. nuclear nonproliferation policy goals. U.S. law has added no new substantive requirements for these agreements since 1980, and there has been no

material change in Canadian nuclear nonproliferation policies since ACDA prepared the 1980 NPAS. Moreover, the proposed Protocol being submitted to the President concurrently with this NPAS makes no substantive change to the 1955 Agreement as amended, except to extend its duration and update the physical protection provisions. As a result, there is no need to repeat in this NPAS the detailed legal analysis prepared in 1980, which concluded that the Agreement fully complied with U.S. law. (The 1980 analysis is attached.) Other sections of this NPAS will also be briefer and offer only an overview and update of relevant information. The sections that follow provide background on Canada's nuclear program and nuclear nonproliferation policies, address a few relevant legal issues, review pertinent policy questions, and set forth the assessment, conclusions, views and recommendations of the Department of State as contemplated by Section 123 a.

B. Background

1. Canada's Nuclear Program and Nonproliferation Policy

Initial Canadian experience with nuclear energy was derived from close collaboration with the United States and the United Kingdom during World War II. Following the war, Canada was one of the first states to launch a civil nuclear energy program. Its program has grown significantly, and Canada is now at the forefront of the use of nuclear energy for peaceful purposes. Canada has abundant deposits of uranium and currently accounts for one-third of the world's production. Canada's nuclear power industry is based on the use of natural uranium fueled reactors with heavy water as a moderator, in contrast to the United States whose nuclear power industry uses enriched uranium fuel (i.e., uranium in which the percentage of the uranium 235 isotope is increased beyond that which occurs in nature) and moderated with ordinary or light water. (Heavy water absorbs fewer neutrons than light water and thus a chain reaction using natural uranium can be sustained.)

Canada has twenty CANDU (Canada deuterium-uranium) power reactors in operation, supplying about 20% of the nation's demand for electricity and 60% in Ontario alone.

Spent fuel from these reactors is stored with no plans to reprocess the fuel to obtain plutonium for recycling as reactor fuel. To support its nuclear power program, Canada has the world's largest industry for production of heavy water. There are a number of nuclear research reactors, including a facility at Chalk River, Ontario that produces a large fraction of the world's supply of radioisotopes for use in medicine. Two new isotope production reactors are under construction to ensure that Canada will continue to be a reliable supplier of these radioisotopes.

Canada has been a major nuclear exporting country for three decades. It supplied power reactors to India and Pakistan in the 1960's, Argentina in the 1970's, Romania in the 1980's and to South Korea and China over the past ten years.

Canada's commitment to nuclear nonproliferation has been consistently strong over the past 30 years. It could have been one of the first countries to acquire nuclear weapons, but decided that its security did not require it to exercise that option. In 1969, Canada was one of the first states to ratify the NPT. Its entire nuclear program is subject to safeguards applied by the International Atomic Energy Agency (IAEA), and Canada has been one of the strongest supporters of the IAEA. Canada took a leading role in international cooperation in improving nuclear export controls in the mid-1970's and was a founding member of both the Zangger (NPT Exporters) Committee and the Nuclear Suppliers Group. In December 1976, Canada was the first country to establish full-scope IAEA safeguards as a condition of nuclear supply to non-nuclear-weapon states. Canada is a party to the Convention on the Physical Protection of Nuclear Material, which obliges states to ensure that adequate protective measures are provided for nuclear material in international transport. Canadian diplomats are consistently among the world's leaders in stressing the dangers of nuclear weapons proliferation and in pushing for faster progress in nuclear disarmament.

Canada played a major role in the critical 1995 NPT Conference that was to make a decision on extension of the NPT. Canada rallied support from a diverse group of nations in favor of an indefinite extension of the Treaty, an effort that helped to demonstrate strong

majority support and contributed significantly to the successful outcome of that Conference. Canada has also been a strong critic of India's and Pakistan's 1998 nuclear tests and assertion of nuclear weapon state status and has played an important role in international efforts to respond to this important challenge to the NPT and the nuclear nonproliferation regime.

In the 1990's, Canada also strongly supported IAEA efforts to strengthen its safeguards system, an effort that was initiated by the IAEA in 1992 after discovery of Iraq's clandestine nuclear weapons program. With a Canadian chairman, an IAEA Board of Governors Committee negotiated a new model safeguards agreement, called "Model Protocol Additional to the Agreement(s) between State(s) and the International Atomic Energy Agency," that will improve the IAEA safeguards system, particularly with respect to its ability to detect clandestine nuclear activities. Canada's own additional protocol with the IAEA was approved by the IAEA Board of Governors in June, 1998.

Canada was an early signatory of the Comprehensive Test Ban Treaty and ratified it in December 1998. Canada has also played a leading role over the years in supporting negotiations at the Geneva-based Conference on Disarmament on a treaty that would place a permanent ban on the production of fissile material for nuclear weapons. The United States attaches considerable importance to both these treaties as measures that contribute significantly to nuclear nonproliferation and nuclear disarmament goals.

2. U.S.-Canadian Nuclear Cooperation

This cooperation dates from World War II and initially was directed at nuclear weapons. Weapons cooperation ceased in 1946 and mutual exchanges in civilian applications of nuclear energy got a boost from a 1955 bilateral agreement. This agreement provided for research and experimentation on various reactor types, joint use of research and test facilities, and the sale of uranium fuel and heavy water. U.S. firms helped to build heavy water production plants in Canada, have provided components for Canada's power reactors and have supplied enriched uranium fuel for use in Canada's

research and test reactors. Canada transfers natural uranium to the United States for enrichment and subsequent use in U.S. reactors and for re-export to third countries. Canada also supplies a substantial fraction of the medical radioisotopes used in the United States.

For many years the United States has supplied high enriched uranium (HEU) fuel for Canada's research reactors. The supply of HEU fuel by the United States to Canada has ceased and both countries are engaged in an effort to eliminate the use of HEU in Canadian research reactors. This is part of a global effort spanning some twenty years designed to reduce the amount of HEU (which is also usable in nuclear weapons) in international commerce. Some HEU-fueled Canadian research reactors have been shut down and others are partially converted to the use of low enriched uranium (LEU) fuel. Spent fuel containing U.S.-origin HEU has been returned to the United States, and two new isotope production reactors under construction will be fueled with LEU. The Canadian company producing these medical isotopes is also cooperating with the U.S. Argonne National Laboratory on the design and testing of LEU targets (vice fuel) which are used to produce the medical isotopes. In the interim and consistent with U.S. law, the United States will continue to support the export of HEU targets to Canada for medical isotope production until LEU targets can be qualified and shown to be economically viable.

Canada and the United States have also cooperated with South Korea on an experimental program to test the feasibility of recycling spent fuel from pressurized light water power reactors in Canadian-style heavy water reactors. (South Korea has both types of reactors.) The process, called DUPIC for "direct use of PWR fuel in CANDU reactors," does not require dissolution of spent fuel or separation of plutonium from radioactive fission products. It is therefore far more proliferation-resistant than reprocessing. This program supports U.S. policy, which opposes reprocessing on the Korean peninsula, while offering South Korean nuclear officials the opportunity to explore whether there is some economical way to "mine" the residual energy value of spent fuel from light water reactors. No judgments on the commercial feasibility of this process are likely for several years, but the economic and technical hurdles

appear formidable at this point. The IAEA has been brought into the development of DUPIC at an early stage to ensure that appropriate safeguards procedures will be ready if and when the process is deployed commercially. Safeguards are being applied to the R and D activities and will evolve in parallel with the DUPIC process.

While Canada's civil nuclear authorities have never had any plans for separating plutonium from spent fuel for reuse in power reactors, senior political leaders have expressed a willingness to consider the use of Canada's power reactors for burning (and thus disposing of) plutonium from U.S. or Russian military programs. U.S. and Canadian technical experts have discussed this option at various times over the past few years, and that possibility has not been discarded. Some experiments were conducted with gram quantities of plutonium at Canadian research facilities and there appear to be no technical obstacles to this option. However, at the present time, to the extent that reactor burning is adopted as a means of disposing of excess military plutonium, priority attention is being given to using power reactors in the United States and Russia. Public acceptance and cost are major factors in any decision to use plutonium as reactor fuel, no matter how noble the purpose (e.g., contributing to nuclear disarmament), and would pose serious obstacles should Canadian leaders make a major push for the Canadian option. Using power reactors in Canada to burn military plutonium would not raise any direct proliferation concerns, given Canada's unquestioned commitment to the NPT and to comprehensive IAEA safeguards.

C. Legal Issues

As noted above, the legal analysis contained in the 1980 ACDA NPAS (attached) concluded that the U.S. - Canada Agreement for Cooperation, as amended, met all the requirements of the Atomic Energy Act. Since 1980, there have been no changes or additions to the requirements specified in the Atomic Energy Act for such agreements for cooperation, and the Protocol does not alter the substantive undertakings by Canada contained in the Agreement for Cooperation, as amended in 1980. Thus, the Agreement for Cooperation as amended by the Protocol will continue to meet all the requirements of the Atomic

Energy Act. The Protocol also has no effect on the nature and scope of cooperation that may take place under the Agreement. The Agreement as amended in 1980 is unique among U.S. bilateral agreements of this type in that it authorizes cooperation in sensitive nuclear technologies (i.e., transfers of enrichment, reprocessing, or heavy water production technology, material or equipment). This was done in view of the historically strong cooperation between the two countries in heavy water production. No transfers of sensitive nuclear technology to Canada have occurred under the Agreement.

The primary purpose of the Protocol is to extend the duration of the existing Agreement, which otherwise would expire on January 1, 2000. The guarantees and controls on items and material already transferred under the current Agreement would continue in effect. Absent the Agreement, however, the transfer of nuclear material between the two countries would be very difficult and, in some cases, not possible under the Atomic Energy Act. The Protocol would extend the duration of the Agreement for a period of thirty years, and has a provision for automatic extensions thereafter of five years each unless either party gives timely notice that it intends to terminate the Agreement.

The Protocol also updates the language in the Agreement in which each party guarantees that adequate physical security measures will be applied to material, equipment and devices subject to the Agreement. It also eliminates an Annex to the Agreement that listed levels of physical protection, in favor of a reference to the levels contained in the most recent guidelines published by the International Atomic Energy Agency or in any revision of those guidelines agreed to by both parties. These changes do not alter the substantive commitment of Canada to provide a guarantee of adequate physical security over U.S. supply under the Agreement.

D. Policy Issues

Article IV of the NPT obliges its parties to engage in peaceful nuclear cooperation with other NPT parties so long as such activity is consistent with the basic principles of nuclear nonproliferation contained in

Articles I and II of that Treaty. Establishing bilateral civil nuclear trading relationships with NPT parties like Canada strongly serves the goals of the NPT and provides a firm foundation on which the United States and Canada can continue their close cooperation on nuclear nonproliferation. U.S. nuclear cooperation with Canada has a long tradition with significant benefits to both parties. The Protocol will ensure a continuation of that relationship, and its entry into force at the earliest date is strongly in the interests of the United States.

Among the more important issues on which the United States and Canada are currently working is the continuing effort to respond to the challenge posed to the nuclear nonproliferation regime by India's and Pakistan's nuclear testing in May 1998. Canada's leadership in this effort has been exemplary from the onset of the crisis. Canada joined the United States and other G-8 countries in issuing a Communique on June 12, 1998, which condemned India's and Pakistan's nuclear tests and urged them to take a number of steps to defuse regional tensions and to join the international community's efforts toward nuclear nonproliferation and nuclear disarmament. Canada imposed bilateral sanctions on both countries and joined in multilateral cooperation that postponed lending to India and Pakistan through international financial institutions. Canada is a member of the South Asia Task Force, which has met three times to coordinate a response to this situation. The United States and Canada continue to consult closely on the best strategy for moving India and Pakistan toward acceptance of the benchmarks established by the international community in the G-8 Communique and other documents including U.N. Security Council Resolution 1172 (June 8, 1998).

Canada has been a consistently strong supporter of IAEA safeguards and its cooperation with the IAEA in the application of safeguards in Canada has been exemplary. It has agreed to several measures in recent years that permit the IAEA to implement new safeguards measures in Canada including, as noted above, the negotiation of a Protocol additional to Canada's NPT safeguards agreement. (The IAEA is involved in a program to negotiate such Protocols with all NPT parties.) Exports to Canada under the Agreement are likely to be limited to low enriched uranium fuel, highly enriched uranium targets for use in medical isotope production, and components for Canadian

power reactors. At this point it seems unlikely that any sizable quantities of plutonium from the U.S. military stockpile will be exported to Canada for burning in civil reactors. On the basis of its close familiarity with the IAEA safeguards system and its confidence in Canada's commitment to nuclear nonproliferation, the Department of State is confident that the IAEA safeguards to be applied to the nuclear material subject to the Agreement for cooperation can provide reasonable assurance of its continued, peaceful non-explosive use.

Canada's nuclear export policies over the past twenty five years have been aligned exceptionally closely with those of the United States. Canada and the United States have worked together in the Zangger Committee and Nuclear Suppliers Group since the 1970s to ensure maximum participation in and effectiveness of these two multilateral groups of nuclear exporters -- which now each have in excess of thirty members. Canada adopted full-scope safeguards as a condition of supply in 1976, the United States in 1978; and both have continued to support strict application of that supply principle as a means to reward countries that accept this important nonproliferation principle. Both countries include comprehensive controls in their bilateral civil nuclear cooperation agreements and have eschewed nuclear cooperation in regions of tension such as the Middle East.

When assessing nuclear nonproliferation factors in connection with a civil nuclear cooperation agreement, it is appropriate to go beyond the specific terms of such an agreement to consider the credibility of a country's commitment to the NPT and what the future might hold. It is impossible to predict with absolute certainty what Canada's position will be on nuclear nonproliferation over the thirty-year period of the Agreement. That being said, Canada joined the NPT thirty years ago and its commitment to that Treaty and its underlying principles has never wavered. There is no imaginable security threat that might cause Canada to reconsider its commitment to nuclear nonproliferation. Canada is a member of NATO and benefits from the collective security guarantee of that alliance, which includes three nuclear weapon states. Canada is a stable democracy and its long history of involvement in world affairs demonstrates that it does not share the misguided notion demonstrated

recently by India that the way for non-nuclear powers to earn international respect is through the testing or acquisition of nuclear weapons. Canada's aversion to nuclear weapons leads it to occasional policy differences with the United States on nuclear disarmament-related issues, but such differences do not undermine strong and enduring U.S.-Canadian cooperation on the fundamental elements of the nuclear nonproliferation regime.

E. Conclusion

Extension of the U.S.-Canada Agreement for Cooperation will guarantee a continuation of mutually beneficial civil nuclear cooperation between the two countries and provide a foundation for continued close collaboration on nuclear nonproliferation goals. Canada's commitment to nuclear nonproliferation is unquestioned, its leadership role in this area well established, and its support over the years for U.S. policies second to none.

On the basis of the analysis in this assessment statement and all pertinent information of which it is aware, the Department of State has arrived at the following assessment, conclusions, views and recommendations:

1. The safeguards and other control mechanisms and the peaceful use assurances in the U.S.-Canada Agreement for Cooperation as amended by the proposed Protocol are adequate to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose.

2. The U.S.-Canada Agreement for Cooperation as amended by the proposed Protocol meets all the legal requirements of the Atomic Energy Act and the NNPA.

3. Execution of the proposed Protocol would be compatible with the nonproliferation program, policy, and objectives of the United States.

4. It is recommended that the President determine that the performance of the proposed Protocol will promote, and will not constitute an unreasonable risk to, the common defense and security; and that the President approve and authorize the execution of the proposed Protocol.

II. COMPLIANCE WITH STATUTORY REQUIREMENTS

As shown below, the existing Agreement, as it will be modified by the proposed Amendment and Agreed Minute, meets all applicable requirements of the NNPA and the Atomic Energy Act.

Section 123 a. of the Atomic Energy Act, as amended by Section 401 of the NNPA, requires new or amended agreements for cooperation to include the terms, conditions, duration, nature and scope of the cooperation.

The nature and scope of the cooperation authorized by the proposed Amended Agreement, as well as types of cooperation excluded therefrom, is described in Section A below.

The duration of the proposed Amended Agreement is until January 1, 2000 (Article I), thus extending the existing Agreement which would otherwise expire on July 14, 1980. Notwithstanding the suspension, termination or expiration of the proposed Amended Agreement for any reason, certain specified articles will (as discussed below) continue in effect as long as any material, equipment or components subject to those articles remain in the territory of Canada or under its jurisdiction or control anywhere, or until such time as the parties agree that such material, equipment or components are no longer useable for any nuclear activity relevant from the point of view of safeguards (Article XII BIS D).

The most pertinent terms and conditions of the cooperation are discussed in Sections B, C, F and G of this Part below.

A. Nature and Scope of Cooperation

(1) Coverage of the Proposed Amended Agreement

Article X BIS sets forth the description of items which are to be subject to the proposed Amended Agreement. Consequently throughout the text, specified controls extend to items described as being "subject to the Agreement." As provided in Article X BIS, this will apply not only to items transferred to Canada* but to items produced and replicated in Canada as well.

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* Most of the controls in the proposed Amendment are reciprocal; however, this assessment statement addresses the extent of US controls over items in Canada.

Paragraph A of Article X BIS provides generally that the proposed Amended Agreement covers all designated nuclear technology, equipment and devices, major critical components, components and material* transferred to Canada, if Canada and the United States have exchanged notifications in writing prior to the transfer.**

Paragraphs B, C and D of Article X BIS make subject to the proposed Amended Agreement source and special nuclear material or moderator material either produced through the use of, or produced, processed or used by, any material, equipment and devices, or major critical components which are subject to the proposed Amended Agreement (i.e., items which are themselves either transferred, replicated or produced).

A unique aspect of the proposed Amended Agreement is that it permits the transfer of enrichment, reprocessing and heavy water production technology.*** With respect to the imposition of US**** controls, paragraphs E - H of Article X BIS subject to the proposed Amended Agreement all equipment and devices, major critical components, and enrichment, reprocessing or heavy water production facilities in Canada as follows:

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* See definitions in paragraphs D, E, G, C, and H, respectively of Article XIV.

** Nuclear material and equipment which under US law may be exported only under an agreement for cooperation are so designated in the licensing process, and confirmation that such items will be subject to the relevant agreement takes place at that time. The purpose of this notification provision is to ensure that such nuclear exports are subject to the proposed Amended Agreement and in addition to provide a procedure for designating other nuclear exports which the parties agree should be transferred pursuant to the proposed Amended Agreement.

*** Articles I and IV permit such cooperation. No legal committment on the part of the United States is undertaken however, by such provisions, nor do they reflect any change in US policy regarding supply of sensitive nuclear technology. (See further discussion in Part III B(1).

**** Controls in the proposed Amended Agreement are reciprocal to the extent they could apply to US facilities eligible for application of IAEA safeguards under the Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America ("US-IAEA Safeguards Agreement") approved by the board of Governors of the IAEA on September 17, 1976 and now being considered by the Senate for its advice and consent to ratification.

- Paragraph E -- Any equipment or device or major critical component, designated by the United States,* which is designed, constructed or operated on the basis of or by use of US-supplied designated nuclear technology;

- Paragraph F -- Any major critical component, designated by the United States,* constructed or operated on the basis of or by the use of designated nuclear technology derived from a major critical component of the same type subject to the proposed Amended Agreement;

- Paragraph G -- Any enrichment, reprocessing or heavy water production facility, designated by the United States,* constructed or operated in Canada on the basis of or by the use of designated nuclear technology or a major critical component of the same type subject to the proposed Amended Agreement and which was transferred after entry into force of the proposed Amendment and within 20 years prior to first of operation of such facility; and

- Paragraph H -- Any enrichment, reprocessing or heavy water production facility; if a US-supplied facility of the same type, or a major critical component thereof or related designated nuclear technology, has been transferred to Canada after entry into force of the proposed Amendment and before first operation of such facility; and if

  (i) its design, construction or operating process is designated by the United States* as being of essentially the same type as another facility designed, constructed or operated in Canada on the basis of or by use of a US-supplied facility, or major critical component thereof or related designated nuclear technology, transferred to Canada during the above time period; and

  (ii) it first commenced operation within 20 years after the date of the first operation of either a US-supplied facility or major critical

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* The United States must consult with Canada before making any designation under Article X BIS; also Canada may make this designation with respect to such major critical components, equipment and devices or facilities in Canada.

component or another facility or any major critical component designed, constructed or operated in Canada on the basis of US-supplied designated nuclear technology, transferred to Canada during the above time period.

Paragraphs E and F of Article X BIS alone satisfy the requirements of US law. Paragraphs G and H were included in Article X BIS to provide for the 20 year conclusive presumption required by the Nuclear Suppliers Guidelines.* Paragraph H provides that those paragraphs shall not limit or restrict US rights under paragraphs E and F. Paragraph I of Article X BIS retroactively includes all items which were subject to the existing Agreement or three exchanges of notes between the two governments in 1969, 1976 and 1977, (attached as an appendix to this statement) if such items are included in an inventory to be prepared by appropriate government authorities of both parties.

In summary, with respect to US controls paragraphs E - H subject to the proposed Amended Agreement the following items:

- Paragraph E -- (By designation) Any equipment and devices and major critical components replicated from US-supplied designated nuclear technology;

- Paragraph F -- (By designation) Any major critical component replicated from any other major critical component of the same type as either a US-supplied or replicated major critical component;

- Paragraph G -- (Conclusive presumption and designation) Any enrichment, reprocessing or heavy water production facility replicated from designated nuclear technology or a major critical component of the same type as that transferred from the United States within 20 years prior to first operation of such facility; and

- Paragraph H -- (Conclusive presumption and designation) Any enrichment, reprocessing, or heavy water production facility if a US-supplied facility of the same type, or related major critical components or designated nuclear technology, have been transferred** before the facility operated; if it is replicated from another facility essentially the same type as a facility replicated from a US-supplied facility, or related major critical components or designated nuclear technology; and if it commenced operation within certain 20-year time frames.

* See IAEA INFCIRC/254.

** After entry into force of the proposed Amendment.

(2) Permitted Cooperation

All cooperation with Canada is subject to the condition in Article I BIS A requiring the application of IAEA safeguards with respect to all nuclear activities in Canada (See further discussion below).

Article II provides for the transfer of unclassified and classified information.* with respect to peaceful uses of nuclear energy. The fields which are included in Article II are reactor development and operation: exploration. extraction and processing of source material: production and utilization of special nuclear material and other material and by-product material: health and safety matters. including environmental problems: and development and use of equipment for all of the foregoing. Such cooperation is limited in several ways which is discussed in subsection (3).

Under Article II D. transfers of Restricted Data** not primarily of military significance regarding reprocessing and heavy water production are authorized. but the Department of Energy has advised that no reprocessing or heavy water production technology remains in this category. Article II BIS would permit the United States to transfer Restricted Data regarding US military reactors at such time that any such reactor warranted application to civil uses.*** Any transfer of such Restricted Data is governed by Section 144 a. of the Atomic Energy Act which requires Presidential authorization before it could be transferred.

Article III authorizes the transfer of source. special nuclear and by-product material for research applications. and the transfer of "research facilities" and "reactor testing facilities". Although these last two terms are not defined in the proposed Amended Agreement. they come within the definition of production or utilization facilities as defined in the Atomic Energy Act. which are included in the definition of "equipment and devices" in Article XIV E of the proposed Amended Agreement. US transfers of highly enriched uranium under Article III will be subject to the constraints of US policy described in the Agreed Minute. (See discussion of Article VI A. below.)

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* Defined in Article XIV F.

** Defined in Article XIV O.

*** Such information would not be transferred under the proposed Amended Agreement.

Article IV authorizes the transfer of equipment and devices, major critical components and components.

Articles VI A and B permit the transfer of low enriched uranium ("LEU") (i.e., uranium enriched to less than 20% in the isotope 235) and natural uranium for use in the power reactor program in Canada. Article VII authorizes the transfer of LEU and other special nuclear material to Canada for fabrication or conversion for return to the United States or retransfer to another country with which the United States has an agreement for cooperation. Such retransfer would be a subsequent arrangement and subject to the requirement of Atomic Energy Act 131.

Article VI A permits the transfer of highly enriched uranium ("HEU") (i.e., uranium enriched to 20% or greater in the isotope 235) in the "discretion" of the United States where technically or economically justified. The Agreed Minute sets forth US policy with respect to export of any special nuclear material other than LEU under Articles III and VI of the proposed Amended Agreement, namely, to permit such transfer "for specified applications where technically and economically justified or where justified for the development and demonstration of reactor fuel cycles to meet energy security and non-proliferation needs." Small quantities for standards or other agreed purposes would not be subject to this criterion. Article VI A limits the transfer of enriched uranium thereunder to quantities available for US distribution each year and states that the quantity of such material transferred to Canada under the proposed Amended Agreement shall not in the opinion of the United States, "be of military significance."

Under Article VI C, heavy water is authorized to be transferred, subject to US availability, to certain designated Canadian reactors and for other applications in the Canadian power reactor program.

(3) <u>Types of Cooperation Not Authorized</u>

Article II A excludes certain types of cooperation as follows:

(1) Classified information if not relevant to current or projected programs;

(2) Restricted Data related to design or fabrication of nuclear weapons or, if in the opinion of the United States it is "primarily of military significance;"

(3) Restricted Data pertaining to military applications of propulsion or package power reactors; and

(4) Private information the parties are not permitted to exchange.

Article II D(2) prohibits any transfer of Restricted Data pertaining to enrichment technology.

B. Specific Requirements for an Amended Agreement for Cooperation

Section 123 a. of the Atomic Energy Act provides that a new or amended agreement for cooperation shall include nine specific requirements. These are quoted below, together with an explanation of how they are satisfied by the proposed Amended Agreement.

(1) Application and Durability of Safeguards

Subparagraph (1) of Section 123 a. requires:

"a guaranty by the cooperating party that safeguards as set forth in the agreement for cooperation will be maintained with respect to all nuclear materials and equipment transferred pursuant thereto, and with respect to all special nuclear material used in or produced through the use of such nuclear materials and equipment, so long as the material or equipment remains under the jurisdiction or control of the cooperating party, irrespective of the duration of other provisions in the agreement or whether the agreement is terminated or suspended for any reason."

This provision is designed (1) to require the application of safeguards with respect to items subject to the proposed Amended Agreement, and (2) to provide protection against any termination of such safeguards. Articles XI, XII A and XII BIS D satisfy these requirements.

Article XI A of the proposed Amended Agreement provides that the NPT safeguards agreement between Canada and the IAEA*

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* Agreement between the Government of Canada and the International Atomic Energy Agency for the Application of Safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons, signed February 21, 1972.

("Canadian NPT Safeguards Agreement") shall apply to material "subject to this Agreement[*] and any source or special nuclear material used in or produced through the use of any components subject to this Agreement, over which Canada has jurisdiction."

Further Article XI C of the proposed Amended Agreement provides as follows:

> "If for any reason the International Atomic Energy Agency safeguards are not being or will not be applied to material subject to this Agreement or produced through the use of any components in a manner in which both parties are satisfied is in accordance with the [Canadian NPT Safeguards Agreement], to ensure effective continuity of safeguards with respect to such material the Parties shall immediately enter into arrangements which conform to the Agency's safeguards principles and procedures, with the coverage required in [Paragraph A of this Article] and provided for by applicable administrative arrangements and which provide assurances equivalent to that intended to be secured by the safeguards system they replace."

The Agreed Minute sets out the fallback safeguard rights which are to be included in the above described safeguards arrangements. These rights would apply to material and equipment transferred by the United States to Canada or otherwise subject to the proposed Amended Agreement and to any equipment or facility which is to use, fabricate, process or store any such material.

The existing Agreement contained no explicit provisions for fallback safeguards. Having such rights is not required by US law; however it is an important element of US non-proliferation policy. The process by which such rights may be implemented by the United States is not as explicit as is being sought in other agreements (see discussion in Part III).

Article XII also includes a guarantee by Canada that the safeguards provided for in this article shall be maintained.

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* As discussed in Section A(1) of this Part the term "subject to the Agreement" includes material or equipment which have been produced or replicated from US supply. Such "contamination" does not extend to components. See page II-1.

II-9

The safeguard rights contained in the proposed Amended Agreement continue in effect as required by the criterion in the law, as Article XII BIS D provides that

> "Notwithstanding the suspension, termination or expiration of this Agreement or any cooperation hereunder for any reason, Articles XI and XII and paragraphs A, B, and C of this article [*] shall continue in effect so long as any designated nuclear technology, material, equipment and devices, major critical components or components subject to these provisions remain in the territory of the Party concerned or under its jurisdiction or control anywhere, or until such time as the Parties agree that such designated nuclear technology, material, equipment and devices, major critical components or components are no longer useable for any nuclear activity relevant from the point of view of safeguards."

Moreover, Article XII BIS A of the proposed Amended Agreement provides that if Canada does not comply with the provisions of Articles XI or XII of the proposed Amended Agreement or "terminates, abrogates or materially violates a safeguards agreement with the IAEA," the United States shall have the rights "to (1) cease further cooperation under this Agreement; and (2) require the return of any material, equipment and devices, major critical components or components subject to this Agreement and any special nuclear material produced through the use of components subject to this Agreement."

Three additional safeguards measures not required by US law, are included in the proposed Amended Agreement as follows:

- The Agreed Minute provides that with respect all material subject to the proposed Amended Agreement, Canada shall maintain a system

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* Thus, in addition to providing for the continuation of safeguards, Article XII BIS D goes beyond the requirements of Section 123 a. by providing for the continuation of other important controls contained in the proposed Amended Agreement; viz., the requirements in Article XII for US approval regarding storage, retransfer, reprocessing, alteration or enrichment; that adequate physical security be maintained; the guaranty against military or explosive use; and the right of return in Article XII BIS A.

of inventory and control, the procedures of which shall be comparable to INFCIRC/153 (the IAEA document containing the terms required for NPT safeguards agreements);

- Article XI D permits the United States to obtain IAEA reports on the status of inventories of material subject to the proposed Amended Agreement and any source or special nuclear material produced through the use of US-supplied components, over which Canada has jurisdiction; and

- The Agreed Minute provides that Canada is to submit to the IAEA, in a timely fashion, design information of any new facilities required to be safeguarded under the proposed Amended Agreement.

Although the first and third of the above provisions are obligations Canada has undertaken by virtue of NPT adherence and are in the Canadian NPT Safeguards Agreement, their incorporation in the proposed Agreement established a bilateral commitment to the United States to undertake such actions and hence provide the means by which the United States could assist the IAEA in these areas. The US right in Article XI D is important because it provides the basis by which the United States may obtain IAEA reports on the inventory of material subject to the proposed Amended Agreement.

(2) Full-Scope Safeguards

Subparagraph (2) of Section 123 a. provides:

"in the case of non-nuclear-weapon states, a requirement, as a condition of continued United States nuclear supply under the agreement for cooperation, that IAEA safeguards be maintained with respect to all nuclear materials in all peaceful nuclear activities within the territory of such state, under its jurisdiction, or carried out under its control anywhere;"

Article I BIS A of the proposed Amended Agreement meets this requirement by providing that cooperation with Canada under the proposed Amended Agreement shall require the application of IAEA safeguards

"By the International Atomic Energy Agency with respect to all nuclear activities within the

> territory of Canada, under its jurisdiction [*] or carried out under its control anywhere. Implementation of the [Canadian NPT Safeguards Agreement] shall be considered as fulfilling this requirement."

Since February 21, 1972 the Canadian NPT Safeguards Agreement has been in force, under Article 1 of which Canada undertakes

> "to accept safeguards, in accordance with the terms of this Agreement, on all source or special fissionable material in all peaceful nuclear activities within the territory of Canada, under its jurisdiction or carried out under its control anywhere, for the exclusive purpose of verifying that such material is not diverted to nuclear weapons or other nuclear explosive devices."

The purpose stated in the Canadian NPT Safeguards Agreement is that specified in Article III of the NPT. While this does not forbid non-explosive military uses, as discussed in subsection (3) below, Article XII C of the proposed Amended Agreement includes a guaranty against use for <u>any</u> military purpose.

(3) <u>No Military or Explosive Use</u>

Subparagraph (3) of Section 123 a. requires:

> "a guaranty by the cooperating party that no nuclear materials and equipment or sensitive nuclear technology to be transferred pursuant to such agreement, and no special nuclear material produced through the use of any nuclear materials and equipment or sensitive nuclear technology transferred pursuant to such agreement, will be used for any nuclear explosive device, or for

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* Article XII D of the proposed Amended Agreement contains a guarantee by Canada that designated nuclear technology, material, equipment and devices, major critical components, components or Restricted Data subject to the proposed Amended Agreement and under its jurisdiction "shall not be transferred to unauthorized persons or, unless the Parties agree, beyond the territorial jurisdiction" of Canada. Accordingly, such items must remain subject to the jurisdiction of Canada unless the United States approves transfer beyond its jurisdiction.

research on or development of any nuclear explosive device, or for any other military purpose;"

Articles XII B and C meet this requirement wherein Canada guarantees that:

"B. Designated nuclear technology, material, equipment and devices, major critical components and components subject to this Agreement and material used in or produced through the use of the foregoing, and over which [Canada] has jurisdiction [*], shall not be used for any nuclear explosive device or for research on or development of any nuclear explosive device.

"C. Designated nuclear technology, material, equipment and devices, major critical components and components subject to this Agreement and source or special nuclear material used in or produced through the use of any components subject to this Agreement, and over which [Canada] has jurisdiction [*] shall not be used for any [**] military purpose."

The definition of material in Article XIV H of the proposed Amended Agreement does not include byproduct material. For purpose of Article XII B, the Agreed Minute provides that byproduct material is included in the definition of material. If any byproduct material is to be transferred under the proposed Amended Agreement, the United States and Canada would have to agree that it came under the definition of material, in which case any military use thereof would be prohibited by Article XII C.***

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* See footnote on page II-11 above.

** The word "other" is not used to describe "military purpose" as is the case in Section 123 a.(3); however, there is no substantive difference.

*** Article III A refers to transfers of material, "including... byproduct other radioisotopes, and stable isotopes..." The term "material" is now defined in the proposed Amended Agreement (not the case in the existing Agreement) and accordingly such quoted language will no longer have any operative effect.

Article XII C does not prohibit the use for military purposes of any byproduct material produced from the use of any US-supplied material or equipment. The Atomic Energy Act does not require such a prohibition for new or amended agreements for cooperation. Tritium, a byproduct material, is produced incidentally in heavy water during reactor operation. For safety reasons, Canadian reactor operators remove tritium from irradiated heavy water. Such tritium may have been produced through the use of US-supplied heavy water or components. There is no prohibition on military, non-explosive use of such "produced" tritium in the proposed amended Agreement. The principal US objective with respect to tritium is to develop cooperation among suppliers regarding appropriate export controls. Canada has agreed to exchange notes with the United States confirming its intention to consult with the United States to develop such guidelines (see additional discussion in Part III).

Section 123 a. of the Atomic Energy Act, prior to its amendment by the NNPA, stipulated that any "material" transferred under an agreement for civil nuclear cooperation was not to be used for any military purpose. The NPT does not bar non-nuclear-weapon states from engaging in non-explosive, military nuclear activities, nor does it require safeguards with respect thereto. Consequently, NPT safeguards agreements include a provision allowing for such uses. However, Article 14 of the Canadian NPT Safeguards Agreement, like other NPT safeguards agreements, provides that in the event Canada intended to engage in a non-explosive, military use of any safeguarded material, it would have to make clear to the IAEA that such use "will not be in

> conflict with an undertaking the Government of Canada may have given and in respect of which Agency safeguards apply, that the material will be used only in a peaceful nuclear activity; and ... the nuclear material will not be used for the production of nuclear weapons or other nuclear explosive devices; ..."

Canada clearly could not make such an assertion to the IAEA with respect to material covered by the guarantee in Article XII C.

While neither required by law nor essential to protect US legal rights, ACDA believes it would be useful, before licensing exports under the proposed Amended Agreement, to seek from Canada a confirmation that should it exercise its right* under Article 14 of the Canadian NPT Safeguards Agreement to use nuclear material for military, non-explosive

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* ACDA is not aware of any present intent on the part of Canada to exercise this right.

purposes, it would first satisfy the United States, as well as the IAEA, that no nuclear material to be used for such a purpose was subject to the guarantee in Article XII C of the proposed Amended Agreement.

(4) Right of Return

Subparagraph (4) of Section 123 a. requires:

> "a stipulation that the United States shall have the right to require the return of any nuclear materials and equipment transferred pursuant thereto and any special nuclear material produced through the use thereof if the cooperating party detonates a nuclear explosive device or terminates or abrogates an agreement providing for IAEA safeguards;"

Article XII BIS of the proposed Amended Agreement meets this requirement by providing that if Canada detonates a nuclear explosive device, or terminates, abrogates or materially violates an IAEA safeguards agreement, the United States shall have the right to "require the return of any

> material, equipment and devices, major critical components or components subject to the Agreement and any special nuclear material produced through the use of components subject to this Agreement."*

Article XII BIS also provides that this right of return is applicable if Canada does not comply with the provisions of Articles XI or XII of the proposed Amended Agreement.

The procedures for implementing this right of return are covered in Article XII BIS C. Payment for the item removed would be made by the United States only after removal from Canada. Also, once the item is removed it would not be subject to the provisions of Articles XII relating to prior agreement between the parties on storage, retransfer, high enrichment, reprocessing and alteration.

(5) Retransfer

Subparagraph (5) of Section 123 a. requires:

> "a guaranty by the cooperating party that any material or any Restricted Data transferred

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* This provision goes beyond the statutory requirements by including a right to require the return of any transferred component and special nuclear material produced through its use.

pursuant to the agreement for cooperation and...[*] any production or utilization facility transferred pursuant to the agreement for cooperation or any special nuclear material produced through the use of any such facility or through the use of any material transferred pursuant to the agreement, will not be transferred to unauthorized persons or beyond the jurisdiction or control of the cooperating party without the consent of the United States;"

Section 109 of the Atomic Energy Act requires that recipient nations also agree to obtain US approval before retransferring any components, items and substances exported from the United States which the Nuclear Regulatory Commission ("NRC") has found to be "significant for nuclear explosive purposes." The NRC has identified a series of such components, items and substances in regulations contained in 10 CFR Part 110, and accordingly this retransfer requirement is now in effect.

Article XII D of the proposed Amended Agreement satisfies both retransfer criteria of the Atomic Energy Act by providing a guarantee by Canada that designated nuclear technology, material, equipment and devices, major critical component, components or Restricted Data subject to the proposed Agreement, and over which Canada has jurisdiction,** "shall not be transferred to unauthorized persons or, unless the Parties agree, beyond the territorial jurisdiction" of Canada.

The exercise of this right and those in paragraphs E, F, G and H of Article XII is clarified by a provision in the Agreed Minute, which states that

> "... with respect to special nuclear material produced through the use of material subject to the Agreement, and not used in or produced through the use of any equipment and devices or major critical components subject to the Agreement, such rights shall, in practice, be applied to that proportion of special nuclear material produced which represents the ratio of material subject to the Agreement used in the production of the special nuclear material to the total amount of material so used."

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* Omitted words, relating to agreements for military cooperation, are inapplicable.

** See footnote on page II-11 above.

This is the principle of proportionality* which is incorporated in the proposed Amended Agreement. This provision clarifies, for example, that, irradiation of fuel in a non-US-supplied reactor in Canada only partially involving US material will not mean that US approval must be sought to retransfer (or otherwise dispose of) all of the spent fuel. The use of such language is consistent with the provisions in the law and is further discussed in Part III.

(6) Physical Security

Subparagraph (6) of Section 123 a. requires:

"a guaranty by the cooperating party that adequate physical security will be maintained with respect to any nuclear material transferred pursuant to such agreement and with respect to any special nuclear material used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to such agreement;"

Article XII H of the proposed Amended Agreement meets this requirement by providing a guaranty by Canada that

> "Adequate physical security shall be maintained with respect to all material and equipment and devices subject to this Agreement and over which [Canada] has jurisdiction."**

With respect to the meaning of "adequate," Section 127(3) of the Atomic Energy Act, as added to the law by Section 305 of the NNPA, provides that physical security measures shall be deemed adequate if they provide a level of protection equivalent to that required by regulations to be promulgated by the NRC establishing levels of physical security (see NNPA Section 304(d)). Such regulations have been promulgated,*** thus establishing a standard by which to judge compliance with this criterion.

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* This principle does not apply to the basic obligations in the proposed Amended Agreement to maintain IAEA safeguards and not to engage in any military or explosive use of items subject to the proposed Amended Agreement.

** See footnote on page II-11 above.

*** 10 CFR Part 110 Section 110.43 (May 19, 1979).

The balance of Article XII H and the related Annex A to the proposed Amended Agreement contain implementing provisions, such as a description of the levels of physical security contemplated and measures to be taken. These provisions are consistent with the Guidelines for Nuclear Transfers published by the IAEA in February 1978 and the above-mentioned NRC regulations.

Article XII H provides that the United States and Canada shall consult concerning physical security measures in Canada. Article XII H goes beyond the requirements of Section 123 a.(6) in that it extends to transferred equipment.* The proportionality provision in the Agreed Minute is applicable to Article XII H.**

(7) Reprocessing, Enrichment or other Alteration

Subparagraph (7) of Section 123 a. requires:

> "a guaranty by the cooperating party that no material transferred pursuant to the agreement for cooperation and no material used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to the agreement for cooperation will be reprocessed, enriched or (in the case of plutonium, uranium 233, or uranium enriched to greater than twenty percent in the isotope 235, or other nuclear materials which have been irradiated) otherwise altered in form or content without the prior approval of the United States;"

This criterion contains several restrictions. First, US approval must be obtained prior to any reprocessing of material

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* While direct coverage over transferred equipment is not mentioned in Section 123 a., it is a requirement in the comparable export criteria in Section 127 of the Atomic Energy Act -- thereby de facto strengthening the Section 123 requirement.

** See discussion above at page II-15.

supplied under a new or amended agreement or of any material produced from such material or produced or used in a production or utilization facility so supplied (e.g., a reactor). Second, such approval must be obtained for enrichment, after export, of any uranium supplied under a new or an amended agreement or of any uranium used in any such equipment so supplied. Third, such approval must be obtained for any alteration of weapons useable material or irradiated nuclear material which has either been supplied under a new or an amended agreement or produced from such material or used in any such equipment so supplied.

Article XII E and G satisfy this criterion by providing the following guarantees by Canada:

[Reprocessing]

> "E. Source and special nuclear material subject to this Agreement and over which [Canada] has jurisdiction [*] shall not be reprocessed unless the Parties agree."

[Other Alteration]

> "Plutonium, uranium containing more than 12% of the isotope 233, uranium enriched to 20% or more in the isotope 235, or irradiated source or special nuclear material, subject to this Agreement and over which [Canada] has jurisdiction, [*] shall not, unless the Parties agree, be altered in form or content, except by irradiation or further irradiation."

[Enrichment]

> "G. Uranium subject to this Agreement and over which [Canada] has jurisdiction [*] shall not be enriched to twenty percent or greater in the isotope 235 unless the Parties agree."

The reference in the alteration control to uranium containing more than 12 percent of the isotope 233 is not inconsistent with the intent of Section 123 a. (7) which is to impose US control over alteration of spent fuel and weapons useable

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* See footnote on p. II-11 above.

material. Just as there is a distinction between HEU and LEU in this regard, uranium containing less than 12% of the isotope 233, practically speaking, is not directly useable in a nuclear weapon.

The language in the alteration control of Article XII E permitting "irradiation or further irradiation" is intended to make clear that the control does not conflict with other provisions of the proposed Amended Agreement permitting the supply of material for use as reactor fuel, which necessarily involves its irradiation. This provision is not inconsistent with the intent of the criterion in the law, which was to prohibit such alteration as chopping or dissolution of spent fuel.

The alteration control refers to "irradiated source or special nuclear material," which is consistent with the intent of the Section 123 a. (7) criterion, which in fact refers to "nuclear materials which have been irradiated." Although it is possible to interpret this provision more broadly,* the intent of Section 123 a. (7) was to cover alteration of reactor fuel after irradiation.

Article XII G provides authorization for Canada to enrich US-supplied uranium up to twenty percent in the isotope 235. This provision is set forth in the proposed Amended Agreement to comply with Section 402(a) of the NNPA, which provides that any nation amending an agreement for cooperation after the enactment of the NNPA (March 10, 1978), may enrich US-supplied uranium only if such activity is specifically authorized in the amended agreement.**

The enrichment control covers any degree of high enrichment and relates to uranium and not to other types of nuclear material since the usage of the term "enrichment" in this criterion of the law refers only to the increase of the isotope 235, in relationship to other uranium isotopes, beyond the amount which exists

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* Following enactment of the NNPA, the NRC exercised its authority under Section 109 of the Atomic Energy Act to determine that certain components, items or substances other than source or special nuclear material have "significance for nuclear explosive purposes." This action had the effect of extending the definition of "nuclear materials" in Section 4 of the NNPA to cover heavy water and nuclear grade graphite.

** Permitting enrichment up to twenty percent in the isotope 235 is in US interest, considering the reciprocal nature of this provision, because of the substantial amounts of Canadian natural uranium exported to the United States for enrichment for use in light water power rectors here and abroad.

in nature. Any other "enrichment" of material not found in nature, such as uranium 233, could be controlled by the alteration provision discussed above. The enrichment control covers US-supplied uranium both before and after its irradiation.

The controls in Articles XII E and G are subject to the proportionality provisions in the Agreed Minute.*

(8) Storage

Subparagraph (8) of Section 123 a. requires:

> "a guaranty by the cooperating party that no plutonium, no uranium 233, and no uranium enriched to greater than twenty percent in the isotope 235, transferred pursuant to the agreement for cooperation, or recovered from any source or special nuclear material so transferred or from any source or special nuclear material used in any production facility or utilization facility transferred pursuant to the agreement for cooperation, will be stored in any facility that has not been approved in advance by the United States;"

Article XII F of the proposed Amended Agreement satisfies this requirement by providing a guarantee by Canada that:

> "Plutonium (except as contained in irradiated fuel elements), uranium containing more than 12% of the isotope 233 and uranium enriched to 20% or greater in the isotope 235, subject to this Agreement, over which [Canada] has jurisdiction, [**] shall only be stored in facilities that have been agreed to in advance by the Parties."

The parenthetical phrase excluding plutonium in irradiated fuel elements from the approval requirement of Article XII F is not inconsistent with the storage criterion in the law, because the control is designed to cover material directly useable in nuclear explosives. This is not the case for plutonium contained in irradiated fuel elements, which would not be useable in

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* See discussion above at page II-15.

** See footnote on page II-11 above.

weapons unless such fuel were reprocessed -- an undertaking which would require US approval under Article XII E.* An early version of S.897 contained a storage provision which applied to all special nuclear material. The Executive Branch in commenting on this bill pointed out the impracticality of imposing storage control on material that is not weapons useable and proposed the formulation for the storage criterion which is now in the Atomic Energy Act.** Also, in explaining this criterion the Senate Report states that it relates to storage facilities for transferred or recovered plutonium, uranium 233 or HEU.*** It is important that irradiated HEU fuel be subject to storage scrutiny, as required by Article XII F, because of the high percentage of HEU present in such fuel after irradiation.

The storage control in Article XII F is subject to the proportionality provision in the Agreed Minute.****

(9) Sensitive Nuclear Technology

Subparagraph (9) of Section 123 a. requires:

> "a guaranty by the cooperating party that any special nuclear material, production facility, or utilization facility produced or constructed under the jurisdiction of the cooperating party by or through the use of any sensitive nuclear technology transferred pursuant to such agreement for cooperation will be subject to all the requirements specified in this subsection."

Articles XI and XII satisfy this criterion. As discussed in Section A(1) of this Part, under Article X BIS E - H, all source or special nuclear material, moderator material, equipment and devices (which include production and utilization facilities) and major critical components which are produced or constructed in Canada by or through the use of any designated nuclear technology (includes sensitive nuclear technology) transferred pursuant to the proposed Amended Agreement, are made subject to the proposed Amended Agreement. The requirements referred to in Section 123 a.(9)

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* See discussion regarding uranium 233 on page II-19.

** Senate Report 95-467, pp. 52-53 (October 3, 1977)

*** Ibid, p. 22.

**** See discussion above at page II-15.

are the controls rights discussed in the above eight subsections (1) through (8). Such rights extend to all of the items described in Section 123 a. (9) which might be produced or constructed in Canada through the use of any designated nuclear technology transferred by the United States pursuant to the proposed Amended Agreement.

Under the provisions of Articles X BIS E - H, the control rights do not attach automatically but only after the United States designates the facility or equipment in question, after consultation with Canada. In practice designation is the only acceptable way for administering such control rights as Canada would not necessarily know which equipment or material had become subject to US controls in the proposed Amended Agreement through replication. For example, it is possible that US technology could be transferred for a project which is never completed, but later a facility based on technology of the same type as that transferred might be built. In that case such facility would become subject to the proposed Amended Agreement upon designation by the United States. The Agreed Minute provides an administrative procedure to provide for notification being given at the time of the transfer of designated nuclear technology or a major critical component containing such technology of the basis on which the supplier party may, in the future, designate replicated equipment or facilities in the jurisdiction of the recipient party. Prior to the actual transfer the parties are to consult on the arrangement pertaining to such designations.*

C. NNPA Section 402 -- Additional Requirements

Section 402(a) contains additional enrichment controls quoted and discussed below.

> "Except as specifically provided in any agreement for cooperation, no source or special nuclear material hereafter exported from the United States may be enriched after export without the prior approval of the United States for such enrichment;"

Article XII F of the proposed Agreed Agreement, which deals with this restriction, is discussed above. By limiting the need to obtain US consent to enrichment of twenty percent or greater in the isotope 235, the United States is approving

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* The language in the Agreed Minute provides flexibility to develop these arrangements. However, for the United States they would have to be sufficient to meet US statutory requirements.

enrichment up to twenty percent. Canada does not have any enrichment capability; accordingly, in practice, US retransfer procedures will provide the opportunity for US control of such enrichment.

Section 402(a) further requires that:

> "[N]o source or special nuclear material shall be exported for the purpose of enrichment or reactor fueling to any nation or group of nations which has, after the date of enactment of the [NNPA], entered into a new or amended agreement for cooperation with the United States, except pursuant to such agreement."

As applied to the present case, this provision means that after entry into force of the proposed Amended Agreement no US source or special nucledar material can be exported to Canada for enrichment or reactor fueling except pursuant to the proposed Agreement. This will foreclose transfers of source material for such purposes outside an agreement for cooperation, which would otherwise be possible under Section 64 of the Atomic Energy Act.

Section 402(b) of the NNPA provides that:

> "In addition to other requirements of law, no major critical component of any uranium enrichment, nuclear fuel, reprocessing, or heavy water production facility shall be exported under any agreement for cooperation...[*] unless such agreement for cooperation specifically designates such components as items to be exported pursuant to the agreement for cooperation."

Article IV of the proposed Amended Agreement authorizes the transfer of major critical components for uranium enrichment, reprocessing, and heavy water production facilities.**

D. NNPA Section 404 -- Relationship of Existing Agreement

The proposed Amendment results from a renegotation of the agreement for cooperation between Canada and the United States

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* Omitted words, relating to agreements for military cooperation, are inapplicable.

** See discussion above in footnote *** on page II-2.

signed June 15, 1955, as amended, thus meeting the objective of Section 404(a) of the NNPA as applied to Canada.

Section 404(a) contains three provisions with respect to the relationship of such a renegotiated agreement to the pre-existing agreement and transactions thereunder; the first two of which are as follows:

> "To the extent that an agreement for cooperation in effect on the date of enactment of [the NNPA] with a cooperating party contains provisions equivalent to any or all of the criteria set forth in Section 127 of the [Atomic Energy] Act with respect to materials and equipment transferred pursuant thereto or with respect to any special nuclear material used in or produced through the use of any such material or equipment, any renegotiated agreement with that cooperating party shall continue to contain an equivalent provision with respect to such transferred material and equipment and such special nuclear material.
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> "To the extent that an agreement for cooperation in effect on the date of enactment of [the NNPA] with a cooperating party does not contain provisions with respect to any nuclear materials and equipment which have previously been transferred under an agreement for cooperation with the United States and which are under the jurisdiction or control of the cooperating party and with respect to any special nuclear material which is used in or produced through the use thereof and which is under the jurisdiction or control of the cooperating party, which are equivalent to any or all of those required for new and amended agreements for cooperation under Section 123 a. of the [Atomic Energy] Act, the President shall vigorously seek to obtain the application of such provisions with respect to such nuclear materials and equipment and such special nuclear material."

Article X BIS I of the proposed Amended Agreement provides the following with respect to subjecting previously transferred items to the proposed Amended Agreement:

> "I. Source and special nuclear material, moderator material, equipment and devices,

> major critical components, components, classified information, Restricted Data and designated nuclear technology which were subject to this Agreement or to the Exchanges of Notes of January 28 and 30, 1969, March 18 and 25, 1976, or November 15, 1977, before the entry into force of this Article, and which are included on an agreed inventory to be established by the appropriate governmental authorities of both Parties, shall be subject to this Agreement."

While the inventory contemplated in the above provision has not been completed, it is the intent of the parties to have the provisions in the proposed Amended Agreement apply retroactively. Preparation of the inventory has already been initiated, and when it is completed the requirements of Section 404(a) above will be fully satisfied. As shown above, the proposed Amended Agreement contains all the provisions required for an amended agreement for cooperation under Section 123 a. of the Atomic Energy Act. The provisions not only meet, but go beyond, the export criteria set forth in Section 127 of the Atomic Energy Act.

The third such requirement of Section 404(a) is as follows:

> "Nothing in [the NNPA] or in the [Atomic Energy] Act shall be deemed to relinquish any rights which the United States may have under any agreement for cooperation in the force on the date of enactment of [the NNPA]."

The rights of the United States under the proposed Amended Agreement are in general more extensive than those provided for in the existing Agreement. While a few provisions of the existing Agreement have been deleted and have no exact counterparts in the proposed Amended Agreement, this does not amount to a relinquishment of rights attributable to any provision in the NNPA or the Atomic Energy Act.

E. NNPA Section 307 -- Conduct Resulting in Termination of Nuclear Exports

Section 307 added Section 129 to the Atomic Energy Act, which prohibits nuclear exports to nations which engage in certain proscribed activities. The activities in Section 129 are those which are directly related to weapons acquisition or which could have a weapons-related motivation. Based on all information of which ACDA is aware, it believes that there is no basis for a

finding that Canada has engaged in any of the types of conduct specified in Section 129.*

F. NNPA Section 309 -- Components, Items and Substances

Section 309 of the NNPA amended Section 109 of the Atomic Energy Act to authorize the NRC to determine that certain component parts, items and substances, because of their significance for nuclear explosive purposes, should be subject to its licensing authority. For such licenses, the NRC must find that the following criteria or their equivalent are met:

> "(1) IAEA safeguards as required by Article III(2) of the [NPT] will be applied with respect to such component, substance, or item; (2) no such component, substance, or item will be used for any nuclear explosive device or for research on or development of any nuclear explosive device; and (3) no such component, substance or item will be retransferred to the jurisdiction of any other nation or group of nations unless the prior consent of the United States is obtained for such retransfer."

The NRC promulgated regulations on May 19, 1978 (10 CFR Part 110) which identified certain reactor components and two substances -- heavy water and nuclear grade graphite (moderator materials) -- the export of which would be subject to these criteria. In the case of Canada the first two criteria are both met by reason of its status as a NPT party and because of the language in Articles XI and XII B. The third criterion (retransfer) can be met by having components and moderator material identified as being exported under the proposed Amended Agreement,** in which case Article XII D would apply.

G. Overlapping Controls

The Agreed Minute contains a mechanism to avoid administrative complications caused by exercise of controls both parties have with respect to material or equipment subject to the

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* For a general discussion of non-proliferation policy of Canada, see Parts I and III.

** US law does not require that such exports be transferred under an agreement for cooperation; however, they may be so transferred.

proposed Amended Agreement when consents are sought by a third party. Under this provision the approval of the party which originally supplied the item in question shall be obtained before the other party gives its consent to the third party. This applies to enrichment, reprocessing, alteration and retransfer requests when the third party has informed the recipient party that the other party had an equivalent right. An example of how this would be applied would be the case of a shipment of natural uranium from Canada to the United States for toll enrichment and retransfer to a reactor operator in country X. When country X sought approval from the United States to retransfer the fuel after irradiation and advised that Canada had the same control, the United States could not consent to this until Canada likewise gave its approval to such retransfer. If country X had not so advised the United States, the Agreed Minute provides that the United States would consult with Canada before exercising its consent. In practice, country X would likely have notified the United States because this would have relieved it of the administrative burden of seeking the same consent from Canada.

This provision in the Agreed Minute does not derogate from US control rights in the proposed Amended Agreement, but is an administrative arrangement to accommodate third nations by permitting them to obtain Canadian approval in the process of seeking US permission under Article XII or vice versa. Such arrangements are recognized in Section 126 of the Atomic Energy Act.

S/S 9911552

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DEPARTMENT OF STATE
WASHINGTON

June 18, 1999

MEMORANDUM FOR: THE PRESIDENT

FROM: Bonnie Cohen
Acting Secretary of State

Bill Richardson
Secretary of Energy

SUBJECT: Proposed Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada

The United States has negotiated a proposed Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada signed at Washington on June 15, 1955, as amended ("the Agreement"). This memorandum recommends that you sign the determination, approval and authorization at Attachment 1, which, pursuant to section 123 b. of the Atomic Energy Act of 1954, as amended ("the Act"), sets forth: (1) your approval of the proposed Protocol; (2) your determination that performance of the proposed Protocol will promote, and will not constitute an unreasonable risk to, the common defense and security; and (3) your authorization for execution of the Protocol.

If you authorize execution of the Protocol, it will be signed by representatives of the United States and Canada. Afterward, in accordance with section 123 b. and d. of the Act, it will be submitted to both Houses of Congress. A draft letter of transmittal to the Congress is at Attachment 2 for your signature. (This letter will be held until after the Protocol is signed.) The Protocol must lie before Congress for 90 days of continuous session. Unless a joint resolution of disapproval is enacted, the Protocol may thereafter be brought into force.

The text of the proposed Protocol is at Attachment 3. It amends the Agreement in two respects:

1. It extends the Agreement, which would otherwise expire by its terms on January 1, 2000, for an additional period of 30 years, with a provision for automatic extensions thereafter in increments of five years each unless either Party gives timely notice to terminate the Agreement; and

2. It updates certain provisions of the Agreement relating to the physical protection of materials subject to the Agreement.

The Agreement itself was last amended on April 23, 1980, to bring it into conformity with all requirements of the Act. As amended by the proposed Protocol, it will continue to meet all requirements of U.S. law.

In accordance with the provisions of section 123 of the Act, the proposed Protocol was negotiated by the Department of State, with the technical assistance and concurrence of the Department of Energy. The proposed Protocol has also been reviewed by the members of the Nuclear Regulatory Commission. Their views are at Attachment 4.

Canada ranks among the closest and most important U.S. partners in civil nuclear cooperation, with ties dating back to the early days of the Atoms for Peace program. Canada is also in the forefront of countries supporting international efforts to prevent the spread of nuclear weapons to additional countries. It is a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and has an agreement with the IAEA for the application of full-scope safeguards to its nuclear program. It also subscribes to the Nuclear Supplier Group (NSG) Guidelines, which set forth standards for the responsible export of nuclear commodities for peaceful use, and to the Zangger (NPT Exporters) Committee Guidelines, which oblige members to require the application of IAEA safeguards on nuclear exports to non-nuclear weapon states. It is a party to the Convention on the Physical Protection of Nuclear Material, whereby it has agreed to apply international standards of physical protection to the storage and transport of nuclear material under its jurisdiction or control. A more detailed discussion of Canada's nuclear non-proliferation policies is provided in the Nuclear Proliferation Assessment Statement (NPAS) at Attachment 5, and in a classified annex to the NPAS submitted to you separately.

Continued close cooperation with Canada in the peaceful uses of nuclear energy, under the long-term extension of the U.S.-Canada Agreement for Cooperation provided for in the proposed Protocol, will serve important U.S. national security, foreign policy and commercial interests. We recommend, therefore, that you determine, pursuant to section 123 b. of the Atomic Energy Act of 1954, as amended, that performance of the Protocol will promote, and will not

constitute an unreasonable risk to, the common defense and security; and that you approve the Protocol and authorize its execution.

RECOMMENDATION

That you sign the determination, approval and authorization at Attachment 1 and the transmittal to Congress at Attachment 2. (The transmittal will be held until the Protocol itself is signed.)

ATTACHMENTS

1. Draft Determination, Approval and Authorization
2. Draft Transmittal to the Congress (To be held until after the agreement is signed)
3. Proposed Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy Between the Government of the United States of America and the Government of Canada
4. Views of the Members of the Nuclear Regulatory Commission
5. Unclassified Nuclear Proliferation Assessment Statement

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

April 28, 1999

The President
The White House
Washington, D.C. 20500

Dear Mr. President:

In accordance with the provisions of Section 123 of the Atomic Energy Act, as amended, the Nuclear Regulatory Commission has reviewed the proposed Protocol to Extend the U.S.-Canada Agreement for Peaceful Nuclear Cooperation as forwarded to NRC by the Department of State on February 8, 1999. It is the view of the Commission that the proposed Protocol includes all the provisions required by Section 123 of the Atomic Energy Act, as amended. The Commission, therefore, recommends that you make the requisite statutory determination, approve the Protocol, and authorize its execution.

Respectfully,

Shirley Ann Jackson