

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

The Government of the United States of America, represented by the United States Atomic Energy Commission (hereinafter referred to as the "Commission"), and the Government of Canada, through its wholly-owned Corporations, Eldorado Mining and Refining Limited and Atomic Energy of Canada Limited, have for several years been engaged in atomic energy programs within their respective countries and from the inception of these programs have collaborated closely in certain areas. The principal objective of Canada's atomic energy program is the civil use of atomic energy and, in particular, the use of atomic energy as a source of electric energy. The objective of the atomic energy program in the United States is twofold: (1) the use of atomic energy for peaceful purposes, and (2) the use of atomic energy for defense purposes. There exists a unique tradition of cooperation between Canada and the United States. Based on similar national interests, this cooperation produces special industrial and economic inter-relationships. Consequently, progress in each country toward the full benefits of the peaceful uses of atomic energy will be accelerated through an arrangement which is consistent with the cooperation existing in other areas. Accordingly, the Government of the United States of America and the Government of Canada, the parties to this Agreement, agree, as provided herein, to assist each other in the achievement of the objectives of their respective atomic energy programs to the extent such assistance is relevant to current projected programs and subject to applicable laws of the respective governments and the availability of material and personnel. While for the present, and for the foreseeable future priority of materials and personnel must be given to defense needs, an increasing number of opportunities exist for the development of the peaceful applications of atomic energy. It is expressly understood that the design, fabrication, disposition, or utilization of atomic weapons are outside the scope of this Agreement.

ARTICLE I-Period of Agreement

This Agreement shall enter into force on the date of receipt by the Government of Canada of a notification from the Government of the United States of America that the period of thirty days required by Section 123c of the United States Atomic Energy Act of 1954 has elapsed, and it shall remain in force through July 31, 1965.

ARTICLE II-Exchange of Information

Classified and unclassified information will be exchanged between the Commission and the appropriate agencies of the Government of Canada with respect to the application of atomic energy to peaceful uses, including research and development relating thereto, and including problems of health and safety. There are set forth in this Article the specific fields in which classified information will be exchanged. The

exchange of information provided for in this Article will be accomplished through the various means available, including reports, conferences, and visits to facilities.

A. Limitations

Of the information which is classified, only that relevant to current or projected programs, will be exchanged. The parties to the Agreement will not exchange Restricted Data under this Agreement which, in the opinion of either country, is primarily of military significance, or exchange Restricted Data relating to the design or fabrication of atomic weapons. Within the subject matter of this Agreement, the parties may come into possession of privately developed and privately owned information and information received from other governments which the parties are not permitted to exchange.

It is mutually understood and agreed that, except as limitations are stated to apply specifically to one party or the other, any limitations to cooperation imposed pursuant to this Agreement shall be reciprocal.

B. Reactors

(1) Information on the development, design, construction, operation and use of research, production, experimental power, demonstration power, and power reactors, except as provided in Paragraph A and (2) and (3) of this paragraph,

(2) The development of submarine, ship, aircraft, and certain package power reactors is presently concerned primarily with their military uses. Accordingly, it is agreed that the parties to this Agreement will not communicate to each other under this Agreement Restricted Data pertaining primarily to such reactors, until such time as these types of reactors warrant civil application, and as the exchange of information on these types of reactors may be mutually agreed. Restricted Data pertaining to the adaptation of these types of reactors to military use, however, will not be exchanged under this Agreement. Likewise, the parties to the Agreement will not exchange under this Agreement Restricted Data pertaining primarily to any future reactor-types the development of which may be concerned primarily with their military use, until such time as these types of reactors warrant civil application find as exchange of information on these types of reactors may be mutually agreed; and Restricted Data pertaining to the adaptation of these types of reactors to military use will not be exchanged under this Agreement. Nevertheless, information pertaining to military nuclear power plants in furtherance of the joint Canada United States defense effort in the development of an early warning radar network may be exchanged.

(3) It is agreed that neither of the parties to this Agreement, will exchange Restricted Data on any specific production, experimental power, demonstration power, and power reactor, unless that type of reactor is being operated currently by the other party, or is being considered seriously for construction by the other party as a source of power or as an intermediate step in a power production program. There will, however, be exchanged such general information on design and characteristics of various types of reactors as is required to permit evaluation and comparison of their potential use in a power production program.

C. *Source Materials*

Geology, exploration techniques, chemistry and technology of extracting uranium and thorium from their ores and concentrates, the chemistry, production technology, and techniques of purification and fabrication of uranium and thorium compounds and metals, including design, construction and operation of plants, except as provided in Paragraph A.

D. *Materials*

(1) Physical, chemical and nuclear properties of all elements, compounds, alloys, mixtures, special nuclear materials, byproduct material, other radioisotopes, and stable isotopes and their behavior under various conditions, except as provided in Paragraph A.

(2) Technology of production and utilization, from laboratory experimentation and theory of production up to pilot plant operations (but not including design and operation of pilot plants and full scale plants, except as may be agreed), of all elements, compounds, alloys, mixtures, special nuclear material, by-product material, other radioisotopes, and stable isotopes, relevant to and subject to the limitations of Paragraphs B, E, and F of this Article, except as provided in Paragraph A and (a), (b), (c) and (d) of this subparagraph.

(a) The Commission will not communicate Restricted Data pertaining to design, construction and operation of production plants for the separation of U-235 from other uranium isotopes. The Commission, however, will supply the Government of Canada with uranium enriched in U-235 as provided in Article III A and Article VI.

(b) The Commission will not communicate Restricted Data on the design, construction and operation of specific production plans for the separation of deuterium from the other isotopes of hydrogen until such time as the Government of Canada shall determine that the construction of such plants is required. The Commission will, however, supply the Government of Canada with heavy water as provided in Article III A and Article VI.

(c) No Restricted Data will be exchanged pertaining to the design, construction and operation of production plants for the separation of isotopes of any other element, except as may be agreed.

(d) No Restricted Data will be exchanged pertaining to the underlying principles, theory, design, construction and operation of facilities, other than reactors, capable of producing significant quantities of isotopes by means of nuclear reactions, except as may be agreed.

E. *Health and Safety*

The entire field of health and safety as related to this Article. In addition, those problems of health and safety which affect the individual, his environment, and the civilian population as a whole and which arise from nuclear explosion (excluding such tests data as would permit the determination of the yield of any specific weapon or nuclear device and excluding any information relating to the design or fabrication of any weapon or nuclear device), and except as provided in Paragraph A.

F. *Instruments, Instrumentation and Devices*

Development, design, manufacture, and use of equipment and devices of use in connection with the subjects of agreed exchange of information provided in this Article, except as provided in Paragraph A.

ARTICLE III-Research Materials and Research Facilities

A. *Research Materials*

Materials of interest in connection with the subjects of agreed exchange of information as provided in Article II, and under the limitations set forth therein, including source materials special nuclear material, by-product material, other radioisotopes, and stable isotopes, will be exchanged for research purposes in such quantities and under such terms and conditions as may be agreed, except as provided in Article VII, when such materials are not available commercially. These materials for non-research purposes may be supplied by one party of this Agreement to the other as provided in Article VI.

B. *Research Facilities*

Under such terms and conditions as may be agreed, and to the extent as may be agreed, specialized research facilities and reactor testing facilities will be made available for mutual use consistent with the limits of space, facilities and personnel conveniently available, except that it is understood that the Commission will not be able to permit access by Canadian personnel to facilities which, in the opinion of the Commission, are primarily of military significance.

ARTICLE III-Transfer of Equipment and Devices

With respect to the subjects of agreed exchange of information as provided in Article II, and under the limitations set forth therein, equipment and devices may be transferred from one party to the other to the extent and under such terms and conditions as may be agreed, except as provided in Article VII. It is recognized that such transfers will be subject to limitations which may arise from shortages of supplies or other circumstances existing at the time.

ARTICLE V-Other Arrangements for Materials, including Equipment and Devices, and Services

It is contemplated that, as provided in this Article, private individuals and private organizations in either the United States or Canada may deal directly with private individuals and private organizations in the other country. Accordingly, with respect to the subjects of agreed exchange of information as provided in Article 11, and under the limitations set forth therein, persons under the jurisdiction of either the Government of the United States of America or the Government of Canada will be permitted to make arrangements to transfer and export materials, including equipment and devices, to and perform services for the other government and such persons under the jurisdiction of

the other government as are authorized by the other government to receive and possess such materials and utilize such services, subject to:

- (a) The limitation in Article VII;
- (b) Applicable laws, regulations and license requirements of the Government of the United States of America and the Government of Canada.
- (c) The approval of the government to which the person is subject when the materials or services are classified or when the furnishing of such materials and services requires the communication of classified information.

ARTICLE VI-Non-Research Quantities of Materials

A. The Commission will sell to Atomic Energy of Canada Limited, a wholly-owned corporation of the Government of Canada, under such terms and conditions as may be agreed, such quantities of uranium enriched in the isotope U-235 as may be required in the power reactor program in Canada during this period, subject to any limitations in connection with the quantities of such material available for such distribution by the Commission during any year, and subject to the limitation that the quantity of uranium enriched in the isotope U-235 of weapon quality in the possession of Atomic Energy of Canada Limited by reason of transfer under this Agreement shall not, in the opinion of the Commission, be of military significance. It is agreed that the uranium enriched in the isotope U-235 which the Commission will sell to Atomic Energy of Canada Limited under this Article will be limited to uranium enriched in the isotope U-235 up to a maximum of 20 percent U-235. It is understood and agreed that, although Atomic Energy of Canada Limited intends to distribute uranium enriched in the isotope U-235 to authorized users in Canada, Atomic Energy of Canada Limited will retain title to any uranium enriched in the isotope U-235 which is purchased from the Commission until such time as private users in the United States are permitted to acquire title to uranium enriched in the isotope U-235.

The Government of Canada, or its appropriate agent, will give to the Commission a first refusal of any special nuclear materials which the Government of Canada may desire to transfer outside of Canada, where such special nuclear materials have been produced from the irradiation of fuel elements enriched with U-235 purchased from the Commission under the terms of this Agreement.

In addition, any special nuclear material transferred by Atomic Energy of Canada Limited to the United States may be retransferred to Canada on such terms and conditions as may be agreed.

B. The Commission will continue the present understanding with Atomic Energy of Canada Limited, a wholly-owned corporation of the Government of Canada., covering the sale of uranium of normal isotopic composition for use in the NRX and NRU reactors.

The Commission will also sell to Atomic Energy of Canada Limited such quantities of uranium of normal isotopic composition, and to the extent practical in such form, as may be required for the power reactor program in Canada and under such terms and

conditions as may be agreed, subject to the availability of supply and the needs of the United States program.

C. The Commission will continue the present understanding with Atomic Energy of Canada Limited, a wholly-owned corporation of the Government of Canada, covering the sale of heavy water for use in the NRX and NRU reactors. The Commission will also sell to Atomic Energy of Canada Limited, under such terms and conditions as may be agreed, such quantities of heavy water as may be required in the power reactor program in Canada, subject to the availability of supply and the needs of the United States program.

D. It is understood and agreed that the existing contract between the Commission and Atomic Energy of Canada Limited relating to the sale of plutonium, and extensions thereof, will continue in full force and effect.

E. Collaboration between the two countries in the field of raw materials has resulted in the development of substantial uranium production in Canada which has been made available to the United States under arrangements and contracts now in effect. These arrangements and contracts shall remain in full force and effect except as modified or revised by mutual agreement.

F. As may be necessary and as mutually agreed in connection with the subjects of agreed exchange of information as provided in Article II, and under the limitations set forth therein, specific arrangements may be made from time to time between the parties for lease or sale and purchase of non-research quantities of other materials under such terms and conditions as may be mutually agreed, except as provided in Article VII.

ARTICLE VII-Materials and Facilities Primarily of -Military Significance

The Commission will not transfer any materials under Article III A or Article VI F and will not transfer or permit the export of any materials or equipment and devices under Article IN' and Article V if such materials or equipment, and devices are in the opinion of the Commission primarily of military significance.

ARTICLE VIII-Classification Policies

The Governments of the United States of America and Canada agree that mutually agreed classification policies shall be maintained with respect to all information and materials, including equipment and devices, exchanged under this Agreement. In addition, the parties intend to continue the present practice of periodic consultation with each other on the classification of atomic energy information.

ARTICLE IX-Patents

A. With respect to any invention or discovery employing information which has been communicated hereunder and made or conceived thereafter during the period of

this Agreement, and in which invention or discovery rights are owned by the Government of the United States or by the Government of Canada or an agency or corporation owned or controlled by either, each party:

(1) Agrees to transfer and assign to the other all right, title, and interest in and to any such invention, discovery, patent application or patent in the country of the other, to the extent owned, subject to a royalty-free, non-exclusive, irrevocable license for its own governmental purposes and for purposes of mutual defense.

(2) Shall retain all right, title, and interest in and to any such invention, discovery, patent application or patent in its own or third countries but will, upon request of the other party, grant to the other party a royalty-free, non-exclusive, irrevocable license for its own governmental purposes in such countries including use in the production of materials in such countries for sale to the other party by a contractor of such other party. Each party may deal with any such invention, discovery, patent application or patent in its own country and all countries other than that of the other party as it may desire, but in no event shall either party discriminate against citizens of the other country in respect of granting any license under the patents owned by it in its own or any other country.

(3) Waives any and all Claims against the other party for compensation, royalty or award as respects any such invention or discovery, patent application or patent and releases the other party with respect to any such claim.

B. (1) No patent application with respect to any classified invention or discovery made or conceived during the period of this Agreement in connection with subject matter communicated hereunder may be filed by either party except in accordance with mutually agreed upon conditions and procedure.

(2) No patent application with respect to any such classified invention or discovery may be filed in any country other than a party to this Agreement except as may be mutually agreed and subject to Article X.

(3) Appropriate secrecy or prohibition orders will be issued for the purpose of effectuating this provision.

ARTICLE X-Security

A. The Governments of the United States of America and Canada have adopted similar security safeguards and standards in connection with their respective atomic energy programs. The two governments agree that all classified information and material, including equipment and devices, within the scope of this Agreement, will be safeguarded in accordance with the security safeguards and standards prescribed by the security arrangement between the Commission and the Atomic Energy Control Board of Canada in effect On June 15, 1955.

B. It is agreed that the recipient party of any material, including equipment and devices, and of any classified information under this Agreement, shall not further disseminate such information, or transfer such material, including equipment and devices, to any other country without the written consent of the originating country. It is further agreed that neither party to this Agreement will transfer to any other country any equipment or device, the transfer of which would involve the disclosure of any

classified information received from the other party, without the written consent of such other party.

ARTICLE XI-Guaranties Prescribed by the United States Atomic Energy Act of 1954

The Government of Canada guarantees that:

A. The security safeguards and standards prescribed by the security arrangements between the Commission and the Atomic Energy Control Board of Canada in effect on June 15, 1955 will be maintained with respect to all classified information and materials, including equipment and devices, exchanged under this Agreement.

B. No material, including equipment and devices, transferred to the Government of Canada or authorized persons under its jurisdiction by purchase or otherwise pursuant to this Agreement will be used for atomic weapons, or for research on or development of atomic weapons, or for any other military purpose.

C. No material, including equipment and devices, or any Restricted Data transferred to the Government of Canada or authorized persons under its jurisdiction pursuant to this Agreement will be transferred to unauthorized persons or beyond the jurisdiction of the Government of Canada, except as the Commission may agree to such a transfer to another nation, and then only if the transfer of the material or Restricted Data is within the scope of an Agreement for Cooperation between the United States and the other nation.

ARTICLE XII-Guaranties by the Government of the United States of America

The Government of the United States of America guarantees that:

A. The security safeguards and standards prescribed by the security arrangements between the Commission and the Atomic Energy Control Board of Canada in effect on June 15, 1955 will be maintained with respect to all classified information and materials, including equipment and devices, exchanged under this Agreement.

B. No material, including equipment and devices, or any Restricted Data transferred to the Government of the United States or authorized persons under its jurisdiction pursuant to this Agreement, will be transferred to unauthorized persons or beyond the jurisdiction of the Government of the United States of America, except as the Government of Canada may agree to such a transfer to another nation.

ARTICLE XIII-Statement Concerning Construction of Article II A and B (2) and Article XI B

Article II A and B (2) and Article XI B shall not be construed to prevent the Government of Canada from selling materials produced in its reactors to the Government of the United States for defense use or from making available, to the extent the Government of Canada may agree to do so, its reactor testing facilities for use by the Government of the United States in connection with the defense aspects of atomic energy.

ARTICLE XIV -Definitions

For purposes of this Agreement:

A. "Classified" means a security designation of "Confidential" or higher applied under the laws and regulations of either Canada or the United States to any data, information, materials, services or any other matter, and includes "Restricted Data."

B. "Equipment and devices" means any instrument, apparatus or facility, and includes production facilities and utilization facilities and component parts thereof.

C. "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency or government corporation, but does not include the parties of this Agreement.

D. "Pilot Plant" means a device operated to acquire specific data for the design of a full-scale plant and which utilizes the process, or a portion thereof, and the type of equipment which would be used in a full-scale production plant.

E. "Reactor" means an apparatus, other than an atomic weapon, in which a self-supporting fission chain reaction is maintained by utilizing uranium, plutonium or thorium, or any combination of uranium, plutonium or thorium.

F. The terms "production facilities," "utilization facilities," "source materials," "special nuclear materials," "by-product material," "Restricted Data," and "atomic weapon" are used in this Agreement as defined in the United States Atomic Energy Act of 1954.

IN WITNESS THEREOF, the parties hereto have caused this Agreement to be executed pursuant to duly constituted authority.

DONE AT Washington in duplicate this 15th day of June, 1955.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

Robert Murphy
Lewis L Strauss

FOR THE GOVERNMENT OF CANADA:

A. D. P. Heeney
W J Bennett

AMENDMENT TO AGREEMENT FOR COOPERATION ON
THE CIVIL USES OF ATOMIC ENERGY BETWEEN THE
GOVERNMENT OF THE UNITED STATES OF AMERICA
AND THE GOVERNMENT OF CANADA

The Government of the United States of America (including the United States Atomic Energy Commission) and the Government of Canada;

Desiring to amend in certain respects the Agreement for Cooperation on the Civil Uses of Atomic Energy (hereinafter referred to as the "Agreement for Cooperation") signed between them in Washington on the fifteenth day of June, 1955:

Have agreed as follows:

ARTICLE 1

The following amendments shall be made to the Agreement for Cooperation concerning the exchange of information on reactors of primarily military significance:

(1) In lieu of Article II A of the Agreement for Cooperation substitute the following:

"A. *Limitations.*

"(1) Of information which is classified, only that relevant to current or projected programs will be exchanged.

"(2) The Parties to this Agreement will not exchange Restricted Data relating to design or fabrication of atomic Weapons or exchange Restricted Data which, in the opinion of either Party, is primarily of military significance under this Article II.

"(3) The development of submarine, ship, aircraft, and certain package power reactors is presently concerned primarily with their military use, and there may be future types of reactors the development of which is concerned primarily with their military use. Accordingly, Restricted Data pertaining primarily to any of these types of reactors will not be exchanged under this Article II.

"(4) Within the subject matter of this Agreement, the parties may come into possession of privately developed and privately owned information and information received from other Governments which the Parties are not permitted to exchange.

"(5) It is mutually understood and agreed that except as limitations are stated to apply specifically to one Party or the other, any limitations to cooperation imposed pursuant to this Agreement shall be reciprocal."

(2) Article II B is amended as follows:

1. In lieu of subparagraph (1), substitute the following:

"(1) Information on the development, design, construction, operation and use of research, production, experimental power, demonstration power, and power reactors, except as provided in paragraph A and subparagraph (2) of this paragraph."

(3) Subparagraph (2) of Article II B is hereby deleted.

(4) Amend subparagraph (3) of Article II B by deleting the number (3) and substituting therefor the number (2).

(5) The following new Article shall be inserted after Article II:

"ARTICLE II bis

"Exchange of Information on Reactors of Primarily Military Significance"

"A. At such time any one of the types of reactors referred to in Article 11 A (3) warrants application to civil uses, Restricted Data on that type shall be exchanged as may be agreed, subject to the other provisions of Article II A.

"B. In the meantime, and subject to the provisions of Article 11 A, classified and unclassified information on the development, design, construction, operation and use of military package power reactors and reactors for the propulsion of naval vessels, aircraft, or land vehicles for military purposes, shall be exchanged to the extent, and by such means as may be agreed. Each Party will use its best efforts to insure that any classified information received from the other Party pursuant to this paragraph will be used only in connection with reactors intended for military use, until such time as it has been agreed under Article 11 bis A to exchange Restricted Data on the type of reactor to which such classified information pertains or such information has been removed from the category of classified information by the Party from which it has been received."

ARTICLE 2

Article XIII is amended by deleting therefrom all references to Article II B (2).

ARTICLE 3

The following new Article shall be inserted after Article XIII of the Agreement for Cooperation:

"ARTICLE XIII bis

"Responsibility for Use of Information, Material, Equipment and Devices

"The application or use of any information (including design drawings and specifications), material, equipment, or device, exchanged or transferred between the Parties under this Agreement shall be the responsibility of the Party receiving it, and the other Party does not warrant the accuracy or completeness of such information and does not warrant the suitability of such information, material, equipment, or device for any particular use or application."

ARTICLE 4

This Amendment, which shall be regarded as an integral part of the Agreement for Cooperation, shall enter into force on the date on which each Government shall receive from the other Government written notification that it has complied with all statutory and constitutional requirements for the entry into force of such Amendment.

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

DONE at Washington this twenty-sixth day of June, 1956, in two original texts.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

C. Burke Elbrick
Acting Assistant Secretary of State for European Affairs,

Lewis L STRAUSS
Chairman, United States Atomic Energy Commission

FOR THE GOVERNMENT OF CANADA:

G. De T. Glazebrook
Charge d'Affaires ad interim

AMENDMENT TO AGREEMENT FOR COOPERATION CONCERNING CIVIL
USES OF ATOMIC ENERGY BETWEEN THE GOVERNMENT OF THE UNITED
STATES OF AMERICA AND THE GOVERNMENT OF CANADA

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, 1953 (hereinafter referred to
as the "Agreement for Cooperation"), as amended by the Agreement signed at
Washington on June 26, 1956, and as modified by the Agreement signed at
Washington on May 22, 1959,

Agrees as follows:

Article I

Notwithstanding the provisions of Article I of the Agreement for Cooperation, that
Agreement, as amended, shall remain in force for a period of twenty years from the date
this Amendment enters into force.

Article II

Article VI A of the Agreement for Cooperation is amended as follows:

1. In the first sentence a comma is inserted after the word "sell" and the phrase
"lease, or, subject to required governmental authorizations, loan" is inserted directly
thereafter.
2. In the second sentence a comma is inserted after the word "sell" and the phrase
"lease, or loan" is inserted directly thereafter.
3. In the second paragraph the word "purchased" is deleted and the word
"received" is substituted in lieu thereof.

Article III

The second sentence of Article VI C 6 of the Agreement for Cooperation is amended by deleting the phrase "sell to Atomic Energy of Canada Limited," and substituting in lieu thereof the phrase "transfer to Atomic Energy of Canada Limited, by sale, lease, or, subject to required governmental authorizations, loan,".

Article IV

1. Subparagraph (1) of Article IX A of the Agreement for Cooperation is amended by inserting a comma after the word "license" and by deleting the phrase "for its own governmental purposes and for purposes of mutual defense" and substituting in lieu thereof the phrase "with the right to grant sublicenses, for all purposes".

2. The first sentence of subparagraph (2) of Article IX A of the Agreement for Cooperation is amended to read as follows:

(2) As to its right, title, and interest in and to any such invention, discovery, patent application, or patent, in its own or third countries will, upon request of the other Party, grant to the other party a royalty free, non-exclusive, irrevocable license, with the right to grant sublicenses, for all purposes in all such countries.

3. The following new paragraph is added to Article IX:

"C. With respect to inventions or discoveries made or conceived in circumstances other than those provided for in paragraph A of this Article, it is agreed that additional mutual specific patent arrangements may be made."

Article V

This Amendment shall enter into force on the date of receipt by the Government of Canada of a notification from the Government of the United States of America that all statutory and constitutional requirements of the Government of the United States of America for the entry into force of such amendment have been complied with, and it shall remain in force for the period of the Agreement for Cooperation, is amended.

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

DONE at Washington, in duplicate, this eleventh day of June, 1960.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

Foy D Kohler

John A. McCone

FOR THE GOVERNMENT OF CANADA:

A. D. P. Heeney

AMENDMENT TO AGREEMENT FOR COOPERATION CONCERNING CIVIL
USES OF ATOMIC ENERGY BETWEEN THE GOVERNMENT OF THE UNITED
STATES OF AMERICA AND THE GOVERNMENT OF CANADA

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 Between the Government of the United States of America and the Government of Canada signed at Washington on June 15, 1955 (hereinafter referred to as the "Agreement for Cooperation"), as amended by the Agreement signed at Washington on June 26, 1956, as modified by the Agreement signed at Washington on May 22, 1959, and as amended by the Agreement signed at Washington on June 11, 1960,

Agree as follows:

Article I

The first two sentences of Article VI A of the Agreement for Cooperation, as amended, are amended to read as follows:

"The Commission will sell, lease, or, subject to required governmental authorizations, loan to Atomic Energy of Canada Limited, a wholly-owned corporation of the Government of Canada, under such terms and conditions as may be agreed, such quantities of uranium enriched in the isotope U-235 as may be required in the power reactor program in Canada during this period, subject to any limitations in connection with the quantities of such material available for such distribution by the Commission during any year, and subject to the limitation that the quantity of uranium enriched in the isotope U-235 of weapon quality under the jurisdiction of the Government of Canada by reason of transfer under this Agreement shall not, in the opinion of the Commission, be of military significance. It is agreed that the uranium enriched in the isotope U-235 which the Commission will sell, lease, or loan to Atomic Energy of Canada Limited under this Article will be limited to uranium enriched in the isotope U-235 up to a maximum of 20 percent U-235; provided, however, the Commission may, upon request and in its discretion make a portion of the foregoing enriched uranium available under this Article at a higher enrichment when there is a technical or economic justification for such a transfer."

Article II

The following new Article shall be inserted after Article VI of the Agreement for Cooperation, as amended:

Article VI bis

Materials for Conversion or Fabrication

"In addition to transfers under Articles III and VI and subject to the limitations contained in Article VI A. the Commission may transfer to Atomic Energy of Canada Limited or Eldorado Mining and Refining Limited, wholly-owned Corporations of the Government of Canada, under such terms and conditions as may be agreed, special nuclear material for performance in Canada of conversion or fabrication services, or both, and subsequent return to the United States or transfer to another nation or group of nations with which the Government of the United States has an Agreement for Cooperation within the scope of which such subsequent transfer falls."

Article III

Article XI C of the Agreement for Cooperation, as amended, is amended as follows:

1. The comma is deleted after the -word "nation" as said word first appears and the phrase "or group of nations," is inserted directly thereafter.
2. The period is deleted at the end of the paragraph and the phrase "or group of nations." is added directly thereafter.

Article IV

Article XII B of the Agreement for Cooperation, as amended, is amended by deleting the period at the end of the paragraph and adding the phrase "or group of nations." directly thereafter.

Article V

This Amendment shall enter into force [1] on the date of receipt by the Government of Canada of a notification from the Government of the United States of America that all statutory and constitutional requirements of the Government of the United States of America for the entry into force of such Amendment have been complied with, and it shall remain in force for the period of the Agreement for Cooperation, as amended.

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

DONE at Washington, in duplicate, this twenty-fifth day of May, 1962.

FOR THE GOVERNMENT OF THE
UNITED STATES OF AMERICA:

Foy D. Kohler
Ritchie

FOR THE GOVERNMENT OF CANADA:

C S. A.

Glenn T. Seaborg

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 the 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
herein referred to as the "Agreement"), and supplemented by the Exchanges of Notes of
January 28 and 30, 1969, March 18 and 25, 1976
and November 15, 1977;

Recognizing that Canada, a non-nuclear-weapon state, entered into an Agreement
with the International Atomic Energy Agency on February 21, 1972, for the
Application of Safeguards in connection with the Treaty on the Non-Proliferation of
Nuclear Weapons;

Recognizing that the United States, a nuclear-weapon state, as that term is defined
in the Treaty on the Non-Proliferation of Nuclear Weapons, intends in the near future
to enter into a safeguards agreement with the International Atomic Energy Agency for
the application of safeguards in the United States;

Have agreed as follows:

ARTICLE I

The preamble of the Agreement is amended by:

- (a) replacing the word "several" in the first sentence with "many";
- (b) replacing the phrase "their respective atomic energy programs" in the seventh
sentence with "their peaceful atomic energy programs"; and
- (c) deleting the penultimate sentence.

ARTICLE 2

Article I of the Agreement is amended by changing the termination date to read
"January 1, 2000".

ARTICLE 3

The Agreement is amended by inserting the following new Article after Article 1:

"Article I bis - Coverage of Safeguards"

"Cooperation under this Agreement shall require the application of safeguards:

"A. 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 Agreement between the Government of Canada and the
International Atomic Energy Agency in connection with the Treaty on the Non-
Proliferation of Nuclear Weapons shall be considered as fulfilling this requirement.

“B. By the International Atomic Energy Agency with respect to all civil nuclear activities within the territory of the United States, under its jurisdiction or carried out under its control anywhere. Implementation of the proposed Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America shall be considered as fulfilling this requirement.”

ARTICLE 4

Article 11 of the Agreement is amended by:

(a) adding the following new sentence at the end of the first paragraph: "If proprietary information is transferred, both Parties will use their best efforts to ensure that its proprietary nature will be respected."; and

(b) paragraph E is amended to read:

“E. *Health and Safety*

"The entire field of health and safety as related to this Article. In addition, those problems of health and safety which affect the individual, his environment, and the civilian population as a whole except as provided in paragraph A."

ARTICLE 5

Article II *BIS* of the Agreement is amended by:

(a) deleting the “A” at the beginning of the first paragraph; and

(b) deleting paragraph *B*.

ARTICLE 6

Article IV of the Agreement is amended by:

(a) replacing the phrase "equipment and devices" with "equipment and devices, major critical components and components" both in the title and in the text of the Article; and

(b) deleting ", except as provided in Article VII" from the first sentence.

ARTICLE 7

Article V of the Agreement is amended to read:

“Article V – Other Arrangements for Materials, Equipment and Devices, Major Critical Components, Components, Information and Services

"It is contemplated that, as provided in this Article, persons in either the United States or Canada may deal directly with either Party or with persons in the other country. Accordingly, with respect to the subjects of agreed exchange of information as provided in Article II, and under the limitations set forth therein, either Party as well as persons under the jurisdiction of either Party will be permitted to make arrangements to transfer and export materials, equipment and devices. major critical components, components and

information to, and perform services for, the other Party and such persons under the jurisdiction of the other Party as are authorized by the other Party to receive and possess such items and utilize such services, subject to:

“A. Applicable laws, regulations and license requirements of the Parties; and

“B. The approval of the Party to which the person is subject when such items or services are classified or when the furnishing of such items and services requires the communication of classified information.”

ARTICLE 8

Article VI of the Agreement is amended by:

- (a) deleting the last two subparagraphs of paragraph A.;
- (b) deleting ", except as provided in Article VII from paragraph F; and
- (c) deleting paragraph D and relettering paragraphs E and F as D and E.

ARTICLE 9

Article VII of the Agreement shall be deleted and Article VI BIS of the Agreement is amended by renumbering it Article VII.

ARTICLE 10

Article VIII of the Agreement is amended by replacing the phrase “equipment and devices” in the first sentence with “equipment and devices, major critical components and components”.

ARTICLE 11

Article X of the Agreement is amended to read:

“ARTICLE X – Security

“The Parties agree that all classified information, material, equipment and devices, major critical components, and components subject to this Agreement will be protected in accordance with mutually agreed security measures.”

ARTICLE 12

The Agreement is amended by inserting the following new Article after Article X:

“ARTICLE X Bis - Coverage of Agreement

“A. Designated nuclear, technology, equipment and devices, major critical components, components and material transferred from the territory of one party to the

territory of the other Party whether directly or through a third country or group of countries, and whether for end use in the territory of the other Party or for retransfer to the territory of the supplying Party or to that of a third country or group of countries, shall be subject to this Agreement if the Parties have exchanged notifications in writing prior to the transfer.

"B. Source and special nuclear material that are produced through the use of source and special nuclear material subject to this Agreement shall also be subject to this Agreement.

"C. Source and special nuclear material that are produced, processed or used by equipment and devices, major critical components or moderator material subject to this Agreement shall also be subject to this Agreement.

"D. Moderator material that is produced through the use of equipment and devices or major critical components subject to this Agreement shall also be subject to this Agreement.

"E. Equipment and devices or major critical components within the jurisdiction of the recipient Party which the recipient Party, or the supplier Party after consultations with the recipient Party, has designated as being designed, constructed or operated on the basis of or by the use of designated nuclear technology subject to this Agreement, and which the supplier Party has transferred to the recipient Party, shall be subject to this Agreement.

"F. Major critical components within the jurisdiction of the recipient Party which the recipient Party, or the supplier Party after consultations with the recipient Party, has designated as a major critical component designed, 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 this Agreement, and which the supplier Party has transferred to the recipient Party, shall be subject to this Agreement.

"G. Any facility within the jurisdiction of a recipient Party for (i) enrichment or reprocessing, or (ii) heavy water production shall be conclusively presumed to be subject to this Agreement if it is subject to paragraph A or B of Article I BIS and it is designed, constructed or operated on the basis of or by the use of designated nuclear technology or a major critical component of the same type as designated nuclear technology or a major critical component which is subject to this Agreement and was transferred to the recipient Party by the supplier Party after the entry into force of this Article and within a 20-year period prior to the first operation of such facility, and if such facility has been so designated by the recipient Party or the supplier Party after consultations with the recipient Party.

"H. Any facility within the jurisdiction of a recipient Party for (i) enrichment or reprocessing, or (ii) heavy water production shall be conclusively presumed to be subject to this Agreement if it is subject to paragraph A or B of Article I BIS and if:

- (1) a facility of the same type or a major critical component thereof or related designated nuclear technology has been transferred to that Party subject to this Agreement after the entry into force of this Article and before the first operation of such facility;
- (2) such facility has been designated by the recipient Party, or the supplier Party after consultations with the recipient Party, as a facility whose design, construction or operating process is of essentially the same type as a facility

designed, constructed or operated on the basis of or by the use of a transferred facility, a major critical component thereof, or related designated nuclear technology referred to in subparagraph (1); and
(3) such facility has first commenced operation within twenty years after the date of the first operation of a facility or major critical component referred to in subparagraph (1), or such facility has first commenced operation within twenty years after the date of the first operation of a facility or major critical component designed, constructed or operated on the basis of transferred designated nuclear technology referred to in subparagraph (1).

Neither this paragraph nor paragraph G shall limit or restrict paragraph E or F, including the duration of the right under those paragraphs to identify equipment and devices or major critical components as having been constructed or operated on the basis of or by the use of transferred designated nuclear technology or major critical components, nor limit the duration of the safeguards or other controls imposed under this 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."

ARTICLE 13

Article XI of the Agreement is amended to read as follows:

"ARTICLE XI - SAFEGUARDS

"A. 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, shall be subject to safeguards in accordance with the Agreement between Canada and the International Atomic Energy Agency referred to in Article I BIS.

"B. Material subject to this Agreement and source or special nuclear material used in or produced through the use of any component subject to this Agreement, over which the United States has jurisdiction, shall be subject to safeguards in accordance with the Agreement between the United States and the International Atomic Energy Agency referred to in Article I BIS.

"C. If for any reason International Atomic Energy Agency safeguards are not being or will not be applied to material subject this Agreement or produced through the use of any components subject to this Agreement in a manner in which both Parties are satisfied is in accordance with the appropriate agreement referred to in paragraph A or B, 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 pursuant to those paragraphs 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 Parties shall consult and assist each other in the application of such a safeguards system.

"D. Upon a request of either Party, the other Party shall report or permit the International Atomic Energy Agency to report on the status of all inventories of any material subject to paragraph A or B, as applicable."

ARTICLE 14

Article XII of the Agreement is amended to read as follows:

"ARTICLE XII – Guarantees

"A. The safeguards provided for in Article XI shall be maintained.

"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 a Party 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 a Party has jurisdiction, shall not be used for any military purpose.

"D. Designated nuclear technology, material, equipment and devices, major critical components, components and Restricted Data subject to this Agreement and over which a Party has jurisdiction, shall not be transferred to unauthorized persons, or, unless the Parties agree, beyond the territorial jurisdiction of that Party.

"E. Source and special nuclear material subject to this Agreement and over which a Party has jurisdiction shall not be reprocessed unless the Parties agree. Plutonium, uranium containing more than 12 percent of the isotope 233, uranium enriched to 20 percent or greater in the 235, or irradiated source or special nuclear material, subject to this Agreement and over which a Party has jurisdiction. all not, unless the Parties agree, be altered in form or content, except by irradiation or further irradiation.

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

"G. Uranium subject to this Agreement and over which a Party has jurisdiction shall not be enriched to 20 percent or greater in the isotope 235 unless the Parties agree.

"H. Adequate physical security shall be maintained with respect to all material and equipment and devices subject to this Agreement, over which it Party has Jurisdiction, and which are subject to the relevant Agreement specified in Article I BIS. The Parties agree to the levels for the application of physical security set forth in Annex A, which levels may be modified by mutual consent of the Parties. The Parties shall maintain adequate physical security measures in accordance with such levels. The measures shall as a minimum provide protection comparable to that set forth in document INFCIRC/225/ Revision I of the International Atomic Energy Agency, entitled, 'The Physical Protection of Nuclear Material', or any revision of this document agreed to by the Parties. The Parties shall consult periodically, or at the request of either Party, concerning matters relating to physical security.

"I. A Party shall not withhold agreement to a matter referred to in paragraphs D, E, F or G for the purpose of securing commercial advantage."

ARTICLE 15

The Agreement is amended by inserting the following new Article after Article XII:

"ARTICLE XII bis - Agreed Stipulations

"A. If either Party at any time following entry into force of this Article does not comply with the provisions of Article XI or XII or terminates, abrogates or materially violates a safeguards agreement with the International Atomic Energy Agency, the other Party shall have the right to:

"(1) Cease further cooperation under this Agreement; and

"(2) Require the return of any material, equipment and devices, major critical components and components subject to this Agreement and any special nuclear material produced through the use of components subject to this Agreement.

"B. If at any time following entry into force of this Article Canada detonates a nuclear explosive device, or if the United States detonates a nuclear explosive device, utilizing any source material or special nuclear material subject to International Atomic Energy Agency safeguards or subject to an agreement requiring that the United States use it solely for peaceful purposes, the other Party shall have the rights as specified in subparagraphs 1 and 2 of paragraph A.

"C. If either Party exercises its rights under paragraph A or B to require the return of any, material, equipment or devices, major critical components or components, the Parties shall make such appropriate arrangements as may be required which shall not be subject to any further agreement between the Parties as otherwise contemplated under Article XII.

"D. 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."

ARTICLE 16

The Agreement is amended by inserting the following now Article after Article XII BIS:

"ARTICLE XII ter – Consultations

"A. The Parties shall consult at any time at the request of either Party regarding application of this Agreement. If differences arise between the Parties concerning interpretation or application of this Agreement, the Parties shall consult with a view to resolving them.

"B. The appropriate governmental authorities of both Parties shall establish administrative arrangements to implement this Agreement."

ARTICLE 17

Article XIII of the Agreement is amended to read as follows:

"ARTICLE XIII – Responsibility for Use of Information, Material, Equipment and Devices, Major Critical Components and Components

"The application or use of any information, material, equipment and devices, major critical components or components exchanged or transferred between the Parties under this Agreement shall be the responsibility of the Party receiving it, and the other Party does not warrant the accuracy or completeness of such information and does not warrant the suitability of such information, material, equipment and devices, major critical components or components for any particular use or application."

ARTICLE 18

Article XIII BIS of the Agreement is amended to read as follows:

"ARTICLE XIII Bis - Dispute Settlement

"The Parties shall seek to resolve any dispute concerning the interpretation or application of this Agreement by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, or other peaceful means of their own choice."

ARTICLE 19

Article XIV of the Agreement is amended to read as follows:

ARTICLE XIV – Definitions

"A. "Byproduct material" means any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material.

"B. "Classified" means a security designation of "confidential" or higher applied under the laws and regulations of either Canada or the United States to any data, information, materials, services or other matters, and includes "Restricted Data".

"C. "Component" means any part of equipment and devices or other part, other than major critical components, so designated by agreement between the Parties.

"D. "Designated nuclear technology" means any information which is important to the design, production (including construction and fabrication), or operation (including maintenance and testing) of any heavy water production facility, heavy water moderated reactor, or any facility designed or used primarily for uranium enrichment, reprocessing of nuclear fuel, or fabrication of nuclear fuel containing plutonium, or other important information, and which is designated as such by the supplier Party after consultation with the recipient Party and prior to the supply of such information.

"E. "Equipment and devices" means production or utilization facilities, or any facility for the production of heavy water or fabrication of nuclear fuel containing plutonium, or any other facility so designated by agreement of the Parties.

"F. "Information" means technical data in physical form including but not limited to technical drawings, photographic negatives and prints, recordings, design data and technical and operating manuals that can be used in design, production (including construction and fabrication), or operation (including maintenance and testing) of equipment and devices, major critical components, components or material, except technical data which is in the public domain.

"G. "Major critical component" means any part or group of parts important to the operation of equipment and devices and so designated by agreement between the Parties.

"H. "Material" means source or special nuclear material, moderator material or any other substance so designated by agreement of the Parties.

"I. "Moderator material" means any heavy water or graphite as defined in Annex B of this Agreement, or any other substance so designated by agreement of the Parties which is suitable for use in any reactor to slow down high velocity neutrons and increase the likelihood of further fission.

"J. "Party" means in the case of United States of America the Government of the United States of America, and in the case of Canada the Government of Canada.

"Supplier Party" means the government from whose jurisdiction the transfer is effected and "recipient Party" means the government into whose jurisdiction, the transfer is effected.

"K. "Person" means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, governmental agency, or government corporation, but does not include the Parties to this Agreement.

"L. "Pilot plant" means a device operated to acquire specific data for the design of a full-scale plant and which utilizes the process, or a portion thereof, and the types of components which would be used in a full-scale production plant.

"M. "Production facility" means any nuclear reactor designed or used primarily for the formation of plutonium or uranium 233, any facility designed used for the separation of isotopes of uranium or plutonium, any facility designed or used for the processing of irradiated materials containing special nuclear material, or any other items so designated by agreement of the Parties.

"N. "Reactor" means an apparatus, other than a nuclear weapon or other nuclear explosive device, in which a self-sustaining fission chain reaction is maintained by utilized uranium, plutonium or thorium, or by combination thereof, or any other apparatus so designated agreement of the Parties.

"O. "Restricted Data" means all data concerning (1) design, manufacture or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to the United States law.

"P. "Source material" means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound or concentrate; or any other substance so designated by agreement of the Parties.

"Q. "Special nuclear material" means (1) plutonium, uranium enriched in the isotope 233 or 235, but does not include source material; (2) any material enriched by any of the foregoing, but does not include source material; or (3) Any other substance so designated by agreement of the Parties.

"R. "Utilization facility" means any reactor other than the one designed or used primarily for the formation of plutonium or uranium 233.

"S. "Uranium enriched in the isotope 233 or 235" means uranium containing the isotope 233 or 235 or both in an amount such that the abundance ratio of the sum of these isotopes to the isotope 238 is greater than the abundance ratio of the isotope 235 to the isotope 238 occurring in nature."

ARTICLE 20

The agreement is amended by:

- (a) inserting the following new Article after Article XIV:

"ARTICLE XV – ANNEXES

“Annexes A and B shall constitute an integral part of this Agreement.”; and
(b) attaching to the Agreement the following Annexes A and B:

"ANNEX A"

“Pursuant to paragraph H of Article XII, the agreed levels of physical security to be ensured by the competent national authorities in the use, storage and transportation of the materials listed in the attached table shall as a minimum include protection characteristics its below.

“Category III”

“Use and storage within an area to which access is controlled.

“Transportation under special precautions including prior arrangements among sender, recipient and carrier, and prior agreement between entities subject to the jurisdiction and regulation of supplier and recipient states, respectively, in case of international transport, specifying, time, place and procedures for transferring transport responsibility.

"Category II”

"Use and storage within a protected area to which access is controlled, i.e., an area under constant surveillance by guards or electronic devices, surrounded by a physical barrier with a limited number of points of entry under appropriate control, or any area with an equivalent level of physical protection.

"Transportation under special precautions including prior arrangements among sender, recipient, and carrier, and prior agreement between entities subject to the jurisdiction and regulation of supplier and[recipient states, respectively, in case of international transport, specifying time, place and procedures for transferring transport responsibilities.

"Category I”

"Material in this category shall be protected with highly reliable systems against unauthorized use as follows:

"Use and storage within a highly protected area, i.e., a protected area as defined for Category II above, to which, in addition, access is restricted to persons whose trustworthiness has been determined, and which is under surveillance by guards who are in close communication with appropriate response forces. Specific measures taken in this context should have as their objective the detection and prevention of any assault, unauthorized access or unauthorized removal of material.

"Transportation under special precautions as identified above for transportation of Categories II and III materials Find, in addition, under constant surveillance by escorts and under conditions which assure close communication with appropriate response forces.

"TABLE: CATEGORIZATION OF NUCLEAR MATERIAL (1)

Material	Form	Category		
		I	II	III
1. Plutonium (2) (3)	Unirradiated (4)		2 kg or more	Less than 2 kg but more than 500 g 500 g or less. (5)
2. Uranium-235	Unirradiated: (4) Uranium enriched to 20 percent U-235 or more. Uranium enriched to 10 percent U-235 but less than 20 percent Uranium enriched above natural but less than 10 percent U-235		5 kg or more	Less than 5 kg but more than 1 kg 10 kg or more Less than 10 kg. 10 kg or more.
3. Uranium-233	Unirradiated (4)		2 kg or more	Less than 2 kg but more than 500 g 500 g or less. (5)
1	Irradiated fuel should be protected as category I, II, or III nuclear material depending on the category of the fresh fuel. However, fuel which by virtue of its original fissile material content is included as category I or II before irradiation should only be reduced I category level, which the radiation level from the fuel exceeds 100 rads/h at 1 meter unshielded.			
2	All plutonium except that with isotopic concentration exceeding 80 percent in plutonium-238.			
3	The state's component authority should determine if there is a credible threat to disperse plutonium malevolently. The state should then apply physical protection requirements for category I, II, or III or nuclear material, as it deems appropriate and without regard to the plutonium quantity specified under each category herein, to the plutonium isotopes in those quantities and forms determined by the state to fall within the scope of the credible dispersal threat.			
4	Material not irradiated in a reactor or material irradiated in a reactor but with a radiation level equal to or less than 100 rads/h at 1 meter unshielded.			
5	Less than a radiologically significant quantity should be exempted.			
6	Natural uranium, depleted uranium and thorium and quantities of uranium enriched to less than 10 percent not falling in category III should be protected in accordance with prudent management practice."			

“ANNEX B”

"Heavy Water and Graphite"

"1. *Deuterium and deuterium compounds.* - Deuterium and any deuterium compound in which the ratio of deuterium to hydrogen exceeds 1:5000 for use in a reactor, as defined in paragraph I of Article XIV of this Agreement, in quantities exceeding 200 kg of deuterium atoms in any period of 12 months.

"2. *Nuclear grade graphite.* - Graphite having a purity level better than five parts per million boron equivalent and with a density greater than 1.50 grams per cubic centimeter in quantities exceeding 30 metric tons in any period of 12 months."

ARTICLE 21

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

B. The Agreements effected by the Exchanges of Notes of January 28 and 30, 1969, March 18 and 25, 1976, and November 15, 1977, shall terminate upon the entry into force of this Protocol.

IN WITNESS WHEREOF the undersigned representatives, duly authorized by their respective Governments, have signed this Agreement.

DONE in duplicate at Ottawa in the English and French languages, each text being equally authentic, this 23rd day of April, 1980.

AGREED MINUTE

During the negotiation of the 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 today the following understandings, which shall be an integral part of the Agreement, were reached.

The Agreement provides a context for exchange of nuclear items between the United States and Canada. This does not constitute a legal commitment by either Party to engage in or permit any particular exchanges. As a general rule, however, the Governments will endeavor to expedite the issuance of approvals required for cooperation within the framework of the Agreement.

It is understood that the Parties to the Agreement shall cooperate in accordance with their respective applicable national laws (including law based on treaties), regulations, and license requirements.

With reference to paragraph B of Article I BIS of the Agreement, it was noted that the United States has completed negotiation with the Secretariat of the International Atomic Energy Agency on the text of an Agreement for the Application of Safeguards by the International Atomic Energy Agency in the United States of America, and that the text of the agreement has been approved by the Board of Governors of the International Atomic Energy Agency.

Until that Agreement between the United States and the Agency enters into force, notwithstanding paragraph B of Article I BIS and paragraph B of Article XI, the requirement of paragraph B of Article I BIS shall be fulfilled in accordance with mutually satisfactory interim arrangements between Canada and the United States.

In the event that the IAEA is not applying safeguards in accordance with either of the Agreements referred to in Article I BIS for reasons not related to circumstances described in paragraphs A or B of Article XII BIS, and provided the Parties enter into arrangements which conform to Agency safeguards principles and procedures, with coverage equivalent to the relevant Agreement referred to in Article I BIS, and which provide assurances equivalent to that intended to be secured by the system they replace, the Parties may agree that these arrangements satisfy the safeguards requirements for continued cooperation under the Agreement.

With respect to Article I BIS, the phrase "under its jurisdiction or carried out under its control anywhere" has the same meaning as the identical phrase in Part I of Document INFCIRC/153 (corrected) of the International Atomic Energy Agency.

The Parties have been engaging and will continue to engage actively in international cooperation on international environmental considerations, relevant to peaceful nuclear activities.

With regard to authorizing any transfers pursuant to Articles III or VI of special nuclear material other than uranium enriched to less than 20 percent in the isotope 235, it is the policy of the United States to transfer such material, as may be agreed, 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 objectives. The United States will seek to continue to cooperate with Canada, as appropriate, in arrangements for the return to the United States of any uranium enriched to greater than 20 percent in the isotope 235 and other research and

test and reactor fuel, which is no longer being used in the Canadian program. These policies do not apply to small quantities of such material that may be authorized pursuant to Article III for use as samples, standards, detectors, targets, or for other purposes as may be agreed.

With respect to paragraph A of Article X BIS, the Parties understood that undue delay in exchanges of notifications should be avoided. The recipient Party therefore shall endeavor to notify the supplier Party within 30 days of receipt of notice, pursuant to paragraph it of Article X BIS, of a proposed transfer whether the recipient Party agrees to receive the transfer subject to the Agreement or, alternatively, that additional time is required.

It is understood that sealed sources containing the isotope Pu-238 may continue to be transferred in accordance with the applicable laws of the Parties without the Agreement applying to them.

The Parties recognize that, in the course of their long and close cooperation in the peaceful uses of nuclear energy, significant exchange of has occurred. The Parties confirm, therefore. Notwithstanding provisions of paragraphs E, F, G and H of Article X BIS, that the supplier Party shall specifically notify the recipient Party in writing prior to the transfer pursuant to the Agreement of any designated nuclear technology or major critical components containing such technology on the basis of which the supplier Party may, in the future, wish to designate equipment and devices or major critical components in the jurisdiction of the recipient Party as subject to the Agreement, and that, prior to such transfer, they shall consult on arrangements pertaining to any such designations.

With respect to paragraph B of Article XI. it is understood that the Agreement does not affect the rights or obligations of the United States or the International Atomic Energy Agency pursuant to the Agreement between the United States and the Agency for the application of safeguards in the United States or the implementation of the latter Agreement.

With respect to paragraph C of Article XI, it is understood that safeguards arrangements therein referred to shall include the following characteristics in accordance with International Atomic Energy Agency safeguards principles and procedures:

(A) The review in a timely fashion of the design of any equipment and devices subject to the Agreement or of any equipment and devices or storage facility which is to use, fabricate, process or store any source or special nuclear material or moderator material subject to the Agreement;

(B) The maintenance and production of records and of relevant reports for the purpose of assisting in ensuring accountability for source or special nuclear material or moderator material subject to the Agreement;

(C) The designation of personnel acceptable to the safeguarded Party who, accompanied, if either Party so requests, by personnel designated by the safeguarded Party, shall have access to all relevant places, and data (the safeguarded Party will not unreasonably withhold acceptance of such personnel designated by the safeguarding Party);

(D) The inspection of any relevant equipment and devices or other facility;

(E) The installation of appropriate and relevant instrumentation; and

(F) The provision for such relevant and practicable independent measurements as may be deemed necessary by the safeguarding entity.

With respect to Article XI, design information relevant to safeguards for new facilities required to be safeguarded under this Article shall be provided to the International Atomic Energy Agency upon its request in a timely fashion.

For the purposes of paragraph B of Article XII, "material" includes byproduct material and radioisotopes other than byproduct material.

For purposes of implementing the rights specified in paragraphs D, E, F, G and H of Article XII 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 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 total amount of the material so used.

With some respect to Article XII TER, and without restricting the general responsibilities set out in that Article, the appropriate governmental authorities of both Parties shall be responsible for:

(A) Establishing the agreed inventory provided for in paragraph I of Article X BIS;

(B) Establishing agreed procedures required under paragraph A of Article X BIS; and

(C) Establishing and maintaining a system of accounting for and control of all material subject to the Agreement. This system shall include agreed procedures relating to adding to, deleting from or substituting for items subject to the Agreement on their respective inventories. Where applicable, the procedures of the system shall be comparable to those set forth in International Atomic Energy Agency document INFCIRC/153 (corrected) or in any revision of that document agreed to by the Parties.

The Parties shall endeavor to establish, as promptly as possible administrative arrangements to implement the Agreement. Pending the establishment of such arrangements, cooperation shall continue in accordance with mutually satisfactory interim arrangements.

In order to avoid administrative complications arising from overlapping controls, neither Party shall exercise any right it has to approve the further retransfer or enrichment to 20 percent or greater in the isotope U-235 of source or special nuclear materials, equipment and devices, major critical components, components or moderator material subject to the Agreement since November 15, 1977, and shall not exercise any rights it has to approve the further retransfer, reprocessing or other alteration in form or content, of irradiated fuel elements containing special nuclear material produced through the use of such nuclear materials, equipment and devices, major critical components or moderator material transferred beyond its jurisdiction, unless approval of the supplier Party is obtained in advance. This applies only where the country requesting approval has notified the recipient Party that the supplier Party has this right or its equivalent. In the event that the recipient Party is not so notified, it shall consult with the supplier Party prior to granting such approval.

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 B11 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: