No. 20185

AUSTRALIA
and
CANADA

Agreement concerning the peaceful uses of nuclear energy (with annexes). Signed at Ottawa on 9 March 1981

Authentic texts: English and French.
Registered by Australia on 24 July 1981.

AUSTRALIE
et
CANADA

Accord concernant l'utilisation pacifique de l'énergie nucléaire (avec annexes). Signé à Ottawa le 9 mars 1981

Textes authentiques : anglais et français.
Enregistré par l'Australie le 24 juillet 1981.

AGREEMENT[1] BETWEEN THE GOVERNMENT OF AUSTRALIA AND THE GOVERNMENT OF CANADA CONCERNING THE PEACEFUL USES OF NUCLEAR ENERGY

The Government of Australia and the Government of Canada,

Considering their close cooperation in the development, use and control of peaceful uses of nuclear energy pursuant to the Agreement between the Government of the Commonwealth of Australia and the Government of Canada for Co-operation in the Peaceful Uses of Atomic Energy, signed at Ottawa on August 4, 1959,[2]

Desiring to continue and expand their cooperation in this field,

Reaffirming their commitment to ensuring that the international development and use of nuclear energy for peaceful purposes are carried out under arrangements which will, to the maximum possible extent, further the objectives of the Treaty on the Non-Proliferation of Nuclear Weapons,[3]

Mindful that both Australia and Canada as non-nuclear-weapon States Parties to the Treaty on the Non-Proliferation of Nuclear Weapons have undertaken not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, and that they have concluded agreements with the International Atomic Energy Agency (hereinafter referred to as the "Agency") for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons,

Affirming their support for the objectives of the Statute of the Agency,[4] and their desire to promote universal adherence to the Treaty on the Non-Proliferation of Nuclear Weapons,

Have agreed as follows:

Article I. (1) The cooperation contemplated by this Agreement relates to the peaceful uses of nuclear energy and includes:

(*a*) The supply of information, which encompasses technology, including that relating to:
  (i) Research and development;
  (ii) Health and safety;
  (iii) Equipment (including the supply of designs, drawings and specifications); and
  (iv) Uses of nuclear material, material and equipment;
(*b*) The supply of nuclear material, material and equipment;
(*c*) Transfer of patent rights;
(*d*) Access to and use of equipment; and
(*e*) The rendering of technical assistance and services, including training.

(2) The cooperation envisaged in this Article shall be effected on terms and conditions to be agreed and in accordance with the laws, regulations and licensing re-

[1] Came into force on 9 March 1981 by signature, in accordance with article XIV (2).
[2] United Nations, *Treaty Series*, vol. 391, p. 191.
[3] *Ibid.*, vol. 729, p. 161.
[4] *Ibid.*, vol. 276, p. 3, and vol. 471, p. 334.

quirements in force in Canada and in Australia respectively. The Parties may designate governmental authorities and natural or legal persons to undertake such cooperation.

Article II. (1) This Agreement shall apply to:

(*a*) Nuclear material, material, equipment and technology transferred between the Parties for peaceful purposes whether directly or through a third country;

(*b*) All forms of nuclear material prepared by chemical or physical processes or isotopic separation in a quantity which is in the same proportion to the total product of the process as the quantity of nuclear material which is subject to this Agreement used in the process bears to the total quantity of nuclear material so used;

(*c*) All generations of nuclear material produced by neutron irradiation in a quantity which is in the same proportion to the total nuclear material so produced, as the quantity of nuclear material which is subject to this Agreement and which is used in this production, contributes to this total production;

(*d*) Equipment which the recipient Party, or the supplier Party after consultation with the recipient Party, has designated as being designed, constructed or operated on the basis of or by the use of the technology referred to in sub-paragraph (*a*), or by the use of technology derived from equipment referred to in sub-paragraph (*a*);

(*e*) Equipment, the design, construction or operating processes of which are essentially of the same type as equipment referred to in sub-paragraph (*a*), which is constructed within 20 years of the first operation of the equipment referred to in sub-paragraph (*a*) and which the recipient Party, or the supplier Party after consultation with the recipient Party, so designates;

(*f*) Equipment, the first operation of which commences within 20 years from the date of the first operation of equipment which has been designed, constructed or operated on the basis of or by the use of the technology referred to in sub-paragraph (*a*), and which the recipient Party, or the supplier Party after consultation with the recipient Party, has designated as being equipment whose design, construction or operating processes are essentially of the same type as equipment which has been designed, constructed or operated on the basis of or by the use of the technology referred to in sub-paragraph (*a*);

(*g*) Material that is produced by equipment subject to this Agreement, and nuclear material that is produced, processed or used by or with material or equipment subject to this Agreement; and

(*h*) Nuclear material, material, equipment and technology subject to the Agreement between the Government of the Commonwealth of Australia and the Government of Canada for Co-operation in the Peaceful Uses of Atomic Energy, of August 4, 1959 at the time of its termination.

(2) The appropriate governmental authority of the supplier Party shall, before shipment, notify the appropriate governmental authority of the recipient Party of any transfer of items referred to in paragraph 1(*a*).

(3) An agreed list of items referred to in paragraph 1(*h*) shall be established.

Article III. (1) Nuclear material referred to in Article II shall remain subject to the provisions of this Agreement until:

(*a*) It is determined that it is no longer usable or it is no longer practicably recoverable for processing into a form in which it is usable for any nuclear activity relevant from the point of view of the safeguards referred to in Article V;

(*b*) It has been transferred beyond the jurisdiction of the recipient Party in accordance with the provisions of Article VIII; or

(*c*) Otherwise agreed between the Parties.

(2) For the purpose of determining when nuclear material subject to this Agreement is no longer usable or is no longer practicably recoverable for processing into a form in which it is usable for any nuclear activity relevant from the point of view of safeguards, both Parties shall accept a determination made by the Agency in accordance with the provisions for the termination of safeguards of the relevant safeguards agreement to which the Agency is a party and which is referred to in Article V of this Agreement.

(3) Material and equipment referred to in Article II shall remain subject to the provisions of this Agreement until:

(*a*) It has been transferred beyond the jurisdiction of the recipient Party in accordance with the provisions of Article VIII; or

(*b*) Otherwise agreed between the Parties.

Article IV. Nuclear material, material, equipment and technology subject to this Agreement shall not be used for, or diverted to, the manufacture of any nuclear weapon, other military uses or the manufacture of any other nuclear explosive device, or research on or development of nuclear weapons or other nuclear explosive devices.

Article V. Nuclear material subject to this Agreement shall be subject while within the territory or under the jurisdiction or control of the recipient Party to safeguards applied by the Agency under a Non-Proliferation Treaty safeguards agreement, or, if the Agency is not administering such safeguards, under an agreement or agreements to which that Party and the Agency are parties which will provide safeguards equivalent in scope and effect to those provided by a Non-Proliferation Treaty safeguards agreement.

Article VI. Notwithstanding the provisions of Article V, if nuclear material, material, equipment or technology subject to this Agreement is present in the territory of a Party or under its jurisdiction or control and the Agency is not administering safeguards pursuant to a safeyuards agreement or agreements with that Party referred to in Article V, that Party shall forthwith enter into an agreement with the other Party for the establishment of a safeguards system which conforms with the principles and procedures of the Agency's safeguards system and which provides for the application of safeguards to nuclear material, material, equipment and technology subject to this Agreement. Such safeguards will be for the purpose of verifying compliance with Article IV. The Parties shall consult and assist each other in the establishment and application of that safeguards system.

Article VII. (1) Each Party shall take measures in accordance with its national laws and regulations to ensure adequate physical protection of nuclear material and, as necessary, of material, equipment and technology subject to this Agreement. In regard to nuclear material each Party shall apply, as a minimum, measures of physical protection which satisfy the levels set out in Annex A to this Agreement.

(2) The Parties shall consult at the request of either Party concerning matters relating to physical protection of nuclear material, material, equipment and technology subject to this Agreement, including those concerning physical protection during international transportation.

Article VIII. (1) Items subject to this Agreement shall be transferred beyond the jurisdiction of the recipient Party only with the prior written consent of the supplier Party.

(2) Nuclear material subject to this Agreement shall be:

(*a*) Enriched to more than 20 per cent in the isotope U235; or

(*b*) Reprocessed;

only with the prior written consent of the supplier Party. Such consent shall include the conditions under which the resultant uranium enriched above 20% or plutonium may be stored.

(3) A Party shall not withhold its consent to a matter referred to in paragraph 1 or 2 for the purpose of securing commercial advantage.

(4) If a Party considers that it is unable to grant consent to a matter referred to in paragraph 1 or 2, that Party shall provide the other Party with an immediate opportunity for full consultation on that issue.

Article IX. (1) The appropriate governmental authorities of both Parties shall consult annually, or at any other time at the request of either Party, to ensure the effective implementation of this Agreement. Either Party may invite the Agency to participate in such consultations.

(2) Each Party shall, upon request, inform the other Party of the overall conclusions of the most recent report by the Agency on its verification activities in the territory of that Party relevant to the nuclear material subject to this Agreement.

(3) The appropriate governmental authorities of both Parties shall establish an administrative arrangement to ensure the effective fulfilment of the obligations of this Agreement. An administrative arrangement established pursuant to this paragraph may be changed with the agreement of the appropriate governmental authorities of both Parties.

(4) The cost of reports and records which either Party is required to provide pursuant to the administrative arrangement referred to in paragraph 3 shall be borne by the Party which is required to provide the reports or records.

(5) Each Party shall take all appropriate precautions in accordance with its laws and regulations to preserve the confidentiality of technology, of commercial and industrial secrets and of other confidential information received as a result of the operation of this Agreement.

Article X. (1) A supplier Party shall have the right in the event of:

(*a*) Detonation by the recipient Party of a nuclear explosive device; or

(*b*) Determination in accordance with paragraph C of Article XII of the Statute of the Agency, that there has been non-compliance with, or repudiation of, a relevant safeguards agreement concluded with the Agency, by the recipient Party;

to suspend or cancel further transfers of nuclear material, material, equipment and technology and to require the return of nuclear material, material, equipment and technology subject to this Agreement, subject to payment therefor at prices then current.

(2) In the event of non-compliance by the recipient Party with the provisions of this Agreement, the supplier Party shall have the right to suspend or cancel further transfers of nuclear material, material, equipment and technology and to require the recipient Party to take corrective steps. If, following consultation between the Parties, such corrective steps are not taken within a reasonable time, the supplier Party shall thereupon have the right to require the return of nuclear material, material, equipment and technology subject to this Agreement subject to payment therefor at prices then current.

Article XI. Any dispute arising out of the interpretation or application of this Agreement which is not settled by negotiation shall, on request of either Party, be submitted to an arbitral tribunal which shall be composed of three arbitrators. Each Party shall designate one arbitrator and the two arbitrators so designated shall elect a third, a national of a third state, who shall be the Chairman. If within 30 days of the request for arbitration either Party has not designated an arbitrator, either Party to the dispute may request the President of the International Court of Justice to appoint an arbitrator. The same procedure shall apply if, within 30 days of the designation or appointment of the second arbitrator, the third arbitrator has not been elected. A majority of the members of the arbitral tribunal shall constitute a quorum and all decisions shall be made by majority vote of all the members of the arbitral tribunal. The arbitral procedure shall be fixed by the tribunal. The decisions of the tribunal, including all rulings concerning its constitution, procedure, jurisdiction and the division of the expenses of arbitration between the Parties shall be binding on both Parties and shall be implemented by them, in accordance with their respective constitutional procedures. The remuneration of the arbitrators shall be determined on the same basis as that for *ad hoc* Judges of the International Court of Justice.

Article XII. Unless otherwise specified at the time of transfer, nothing in this Agreement shall be interpreted as imposing any responsibility on the Parties with regard to the suitability for any particular use of nuclear material, material, equipment or technology supplied pursuant to commercial contracts.

Article XIII. For the purpose of this Agreement:

(*a*) "Appropriate governmental authority" means such authority or authorities as the Party concerned may from time to time notify to the other Party;

(*b*) "Equipment" means the items and major components thereof specified in Part A of Annex B to this Agreement;

(*c*) "Material" means the non-nuclear material for reactors specified in Part B of Annex B to this Agreement;

(*d*) "Non-Proliferation Treaty safeguards agreement" means an agreement concluded in accordance with paragraph 1 of Article III of the Treaty on the Non-Proliferation of Nuclear Weapons, done at London, Moscow and Washington on 1 July 1968;

(*e*) "Nuclear material" means any "source material" or "special fissionable material" as those terms are defined in Article XX of the Statute of the Agency. Any determination by the Board of Governors of the Agency under Article XX of the Agency's Statute which amends the list of materials considered to be "source material" or "special fissionable material" shall only have effect under this Agreement when both Parties have informed each other in writing that they accept that amendment;

(*f*) "Technology" 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 is designated by the supplier Party after consultation with the recipient Party and prior to the supply of such technical data as relevant in terms of non-proliferation and as important for the design, production, operation or maintenance of enrichment, reprocessing or heavy water production facilities or heavy water moderated reactors or major critical components thereof, but excluding data available to the public (for example, in published books and periodicals); and

(*g*) "The Agency's safeguards system" means the safeguards system set out in the Agency document INFCIRC/66 (Rev. 2) as well as any subsequent amendments thereto which are accepted by both Parties.

Article XIV. (1) Notwithstanding Article VII, paragraph 3, of the Agreement between the Government of the Commonwealth of Australia and the Government of Canada for Co-operation in the Peaceful Uses of Atomic Energy of August 4, 1959, that Agreement shall terminate on the date this Agreement enters into force. Cooperation in progress under that Agreement shall continue in accordance with the terms of this Agreement.

(2) This Agreement shall enter into force upon signature. It shall remain in force initially for a period of 30 years. If neither Party has notified the other Party at least 180 days prior to the expiry of such period, this Agreement shall continue in force thereafter until 180 days after notice of termination has been given by either Party to the other Party.

(3) In the event of termination of the present Agreement, the provisions of Articles II to XIII shall continue in effect so long as any item which was subject to this Agreement remains in existence, except as otherwise agreed between the Parties.

Article XV. (1) This Agreement may be amended or revised if the Parties so agree.

(2) Any amendment shall enter into force on the date the Parties, by an exchange of Notes, specify for its entry into force.

ANNEX A

LEVELS OF PHYSICAL PROTECTION

The levels of physical protection to be satisfied by the Parties in the use, storage and transportation of the materials in the attached table shall as a minimum include protection characteristics as follows:

(1) *Category III*

(*a*) Use and storage within an area to which access is controlled.

(*b*) 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.

(2) *Category II*

(*a*) 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.

(*b*) 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.

(3) *Category I*

Materials in this Category shall be protected with highly reliable systems against unauthorized use as follows:

(*a*) 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.

(*b*) Transportation under special precautions as identified above for transportation of Category II and III materials and, in addition, under constant surveillance by escorts and under conditions which assure close communication with appropriate response forces.

TABLE. CATEGORIZATION OF NUCLEAR MATERIAL

Material	*Form*	*Category I*	*Category II*	*Category III*
1. Plutonium[a]	Unirradiated[b]	2 kg or more	Less than 2 kg but more than 500 g	500 g or less[c]
2. Uranium-235	Unirradiated[b]:			
	Uranium enriched to 20% ^{235}U or more	5 kg or more	Less than 5 kg but more than 1 kg	1 kg or less[c]
	Uranium enriched to 10% ^{235}U but less than 20%		10 kg or more	Less than 10 kg[c]
	Uranium enriched above natural, but less than 10% ^{235}U[d]			10 kg or more
3. Uranium-233	Unirradiated[b]	2 kg or more	Less than 2 kg but more than 500 g	500 g or less[c]
4. Irradiated fuel		Depleted or natural uranium, thorium or low enriched fuel (less than 10% fissile content)[e, f]		

[a] All plutonium except that with isotopic concentration exceeding 80% in plutonium 238.

[b] Material not irradiated in a reactor or material irradiated in a reactor but with a radiation level equal to or less than 100 rads/hour at one metre unshielded.

[c] Less than a radiologically significant quantity should be exempted.

[d] Natural uranium, depleted uranium and thorium and quantities of uranium enriched to less than 10% not falling in Category III should be protected in accordance with prudent management practice.

[e] Although this level of protection is recommended, it would be open to a Party upon evaluation of the specific circumstances, to assign a different category of physical protection.

[f] Other fuel which by virtue of its original fissile material content is classified as Category I or II before irradiation may be reduced one category level while the radiation level from the fuel exceeds 100 rads/hour at one metre unshielded.

ANNEX B

PART A

(1) *Nuclear reactors* capable of operation so as to maintain a controlled self-sustaining fission chain reaction excluding zero energy reactors, the latter being defined as reactors with a designed maximum rate of production of plutonium not exceeding 100 grams per year.

A "nuclear reactor" basically includes the items within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain or come in direct contact with or control the primary coolant of the reactor core.

It is not intended to exclude reactors which could reasonably be capable of modification to produce significantly more than 100 grams of plutonium per year. Reactors designed for sustained operation at significant power levels, regardless of their capacity for plutonium production, are not considered as "zero energy reactors".

(2) *Reactor pressure vessels:* metal vessels, as complete units or as major shop-fabricated parts therefor, which are especially designed or prepared to contain the core of a nuclear reactor as defined in paragraph 1 above and are capable of withstanding the operating pressure of the primary coolant.

A top plate for a reactor pressure vessel is a major shop-fabricated part of a pressure vessel.

(3) *Reactor internals* (e.g. support columns and plates for the core and other vessel internals, control rod guide tubes, thermal shields, baffles, core grid plates, diffuser plates, etc.).

(4) *Reactor fuel charging and discharging machines:* manipulative equipment especially designed or prepared for inserting or removing fuel in a nuclear reactor as in paragraph 1 above capable of on-load operation or employing technically sophisticated positioning or alignment features to allow complex off-load fuelling operations such as those in which direct viewing of or access to the fuel is not normally available.

(5) *Reactor control rods:* rods especially designed or prepared for the control of the reaction rate in a nuclear reactor as defined in paragraph 1 above.

This item includes, in addition to the neutron absorbing part, the support or suspension structures therefor if supplied separately.

(6) *Reactor pressure tubes:* tubes which are especially designed or prepared to contain fuel elements and the primary coolant in a reactor as defined in paragraph 1 above at an operating pressure in excess of 50 atmospheres.

(7) *Zirconium tubes:* zirconium metal and alloys in the form of tubes or assemblies of tubes, and in quantities exceeding 500 kg per year especially designed or prepared for use in a reactor as defined in paragraph 1 above, and in which the relationship of hafnium to zirconium is less than 1:500 parts by weight.

(8) *Plants for the reprocessing of irradiated fuel elements,* and equipment especially designed or prepared therefor

A "plant for the reprocessing of irradiated fuel elements" includes the equipment and components which normally come in direct contact with and directly control the irradiated fuel and the major nuclear material and fission product processing streams. In the present state of technology only two items of equipment are considered to fall within the meaning of the phrase "and equipment especially designed or prepared therefor". These items are:

(*a*) Irradiated fuel element chopping machines: remotely operated equipment especially designed or prepared for use in a reprocessing plant as identified above and intended to cut, chop or shear irradiated nuclear fuel assemblies, bundles or rods; and

(*b*) Critically safe tanks (e.g. small diameter, annular or slab tanks) especially designed or prepared for use in a reprocessing plant as identified above, intended for dissolution of irradiated nuclear fuel and which are capable of withstanding hot, highly corrosive liquid, and which can be remotely loaded and maintained.

(9) *Plants for the fabrication of fuel elements:* A "plant for the fabrication of fuel elements" includes the equipment:

(*a*) Which normally comes in direct contact with or directly processes, or controls, the production flow of nuclear material; or

(*b*) Which seals the nuclear material within the cladding.

The whole set of items for the foregoing operations, as well as individual items intended for any of the foregoing operations, and for other fuel fabrication operations, such as checking the integrity of the cladding or the seal, and the finish treatment to the sealed fuel.

(10) *Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium:* "Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium" includes each of the major items of equipment especially designed or prepared for the separation process. Such items include:

— Gaseous diffusion barriers

— Gaseous diffuser housings

— Gas centrifuge assemblies, corrosion resistant to UF_6

— Jet nozzle separation units

— Vortex separation units

— Large UF_6 corrosion-resistant axial or centrifugal compressors

— Special compressor seals for such compressors.

(11) *Plants for the production of heavy water:* A "plant for the production of heavy water" includes the plant and equipment specially designed for the enrichment of deuterium or its compounds, as well as any significant fraction of the items essential to the operation of the plant.

PART B

Non-Nuclear Materials for Reactors

(1) *Deuterium and deuterium compounds:* Deuterium and any deuterium compound in which the ratio of deuterium to hydrogen exceeds 1:5,000 for use in a nuclear reactor, as defined in paragraph 1 of Part A of this Annex 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 5 parts per million boron equivalent and with a density greater than 1.50 grams per cubic centimetre in quantities exceeding 30 metric tons in any period of 12 months.

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

DONE in duplicate at Ottawa this 9th day of March 1981, in the English and French languages, each version being equally authentic.

EN FOI DE QUOI les soussignés, dûment autorisés à cet effet par leurs Gouvernements respectifs, ont signé le présent Accord.

FAIT en double exemplaire à Ottawa, le 9e jour de mars 1981, en français et en anglais, chaque version faisant également foi.

[*Signed — Signé*][1]

For the Government of Australia
Pour le Gouvernement de l'Australie

[*Signed — Signé*][2]

For the Government of Canada
Pour le Gouvernement du Canada

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[1] Signed by B. G. Dexter — Signé par B. G. Dexter.
[2] Signed by Mark MacGuigan — Signé par Mark MacGuigan.