

No. 15863

**INTERNATIONAL ATOMIC ENERGY AGENCY,
CANADA and SPAIN**

Agreement for the application of safeguards (with appendices). Signed at Vienna on 10 February 1977

Authentic texts: English, French and Spanish.

Registered by the International Atomic Energy Agency on 23 August 1977.

**AGENCE INTERNATIONALE DE L'ÉNERGIE
ATOMIQUE, CANADA et ESPAGNE**

**Accord pour l'application de garanties (avec appendices).
Signé à Vienne le 10 février 1977**

Textes authentiques : anglais, français et espagnol.

Enregistré par l'Agence internationale de l'énergie atomique le 23 août 1977.

AGREEMENT¹ BETWEEN THE GOVERNMENT OF CANADA, THE GOVERNMENT OF SPAIN AND THE INTERNATIONAL ATOMIC ENERGY AGENCY FOR THE APPLICATION OF SAFEGUARDS

WHEREAS the Government of Canada and the Government of Spain have made and may make arrangements for the transfer of nuclear material, material, equipment, facilities and information from Canada to Spain or from Spain to Canada pursuant to their Agreement for the Development and Application of Atomic Energy for Peaceful Purposes of 7 July 1975² (hereinafter referred to as “the Co-operation Agreement”);

WHEREAS the Government of Canada and the Government of Spain have agreed that nuclear material, material, equipment, facilities and information transferred from Canada to Spain or from Spain to Canada shall be used only for the development and application of atomic energy for peaceful purposes;

WHEREAS the International Atomic Energy Agency (hereinafter referred to as “the Agency”) is authorized by its Statute³ to apply safeguards, at the request of the Parties, to any bilateral or multilateral arrangement;

WHEREAS the Government of Canada and the Government of Spain have requested the Agency to apply safeguards to nuclear material, material, equipment and facilities transferred from Canada to Spain or from Spain to Canada, to nuclear material, material, equipment and facilities produced, processed or used thereby or therewith or with the use of information provided from Canada to Spain or from Spain to Canada and to all subsequent generations of special fissionable material produced by the use of any such item;

WHEREAS the Board of Governors of the Agency (hereinafter referred to as “the Board”) has acceded to that request on 17 September 1976;

NOW THEREFORE, the Government of Canada, the Government of Spain and the Agency have agreed as follows:

PART I. DEFINITIONS

Section 1. For the purposes of this Agreement:

(a) “Equipment” shall mean any equipment which is specially designed or prepared for the processing, use or production of nuclear material or material. The term shall include all items listed in Appendix A to this Agreement as well as any major components thereof;

(b) “Facility” shall mean:

- (i) a principal nuclear facility as defined in paragraph 78 of the Safeguards Document as well as a critical facility or a separate storage installation;
- (ii) a plant for the production of heavy water; or

¹ Came into force on 10 February 1977 by signature, in accordance with section 34 (a).

² United Nations, *Treaty Series*, vol. 1028, p. 319.

³ *Ibid.*, vol. 276, p. 3, and vol. 471, p. 334.

(iii) any location where nuclear material in amounts greater than one effective kilogram is customarily used;

(c) "Information" (except in Sections 10 and 11 of this Agreement) shall mean information transferred under the Co-operation Agreement in any form or manner in which such information can be transferred, including but not limited to technical drawings, photographic negatives and prints, recordings, design data and technical and operating and maintenance manuals, that can be used in the design, production, operation or testing of equipment, facilities, nuclear material or material, except information freely available to the public; the term shall include any information obtained from a facility or equipment transferred under the Co-operation Agreement;

(d) "Inspectors Document" shall mean the Annex to Agency document GC(V)/INF/39;

(e) "Material" shall mean any substance which is especially prepared for the production, processing or use of nuclear material; the term shall include the substances listed in Appendix B to this Agreement;

(f) "Nuclear material" shall mean any source material or special fissionable material as defined in Article XX of the Statute of the Agency;

(g) "Produced, processed or used" shall mean any utilization or any alteration of the physical or chemical form or composition including any change of the isotopic composition, of the nuclear material or material involved;

(h) "Safeguards Document" shall mean Agency document INFCIRC/66/Rev.2 and any subsequent additions thereto.

PART II. UNDERTAKINGS BY THE GOVERNMENTS

Section 2. The Government of Canada undertakes that none of the following items shall be used for the manufacture of any nuclear weapon or to further any other military purpose or for the manufacture of any other nuclear explosive device:

- (a) Nuclear material, material, any equipment or any facility transferred from Spain to Canada;
- (b) Any equipment or facility which is designed, constructed or operated in Canada on the basis of or by the use of information transferred from Spain;
- (c) Any nuclear material, including subsequent generations of produced special fissionable material, and any material, which has been produced, processed or used on the basis of or by the use of any item referred to in this Section or any information transferred from Spain to Canada; or
- (d) Any other item required to be listed in the Inventory for Canada.

Section 3. The Government of Spain undertakes that none of the following items shall be used for the manufacture of any nuclear weapon or to further any other military purpose or for the manufacture of any other nuclear explosive device:

- (a) Nuclear material, material, any equipment or any facility transferred from Canada to Spain;
- (b) Any equipment or facility which is designed, constructed or operated in Spain on the basis of or by the use of information transferred from Canada;

- (c) Any nuclear material, including subsequent generations of produced special fissionable material, and any material, which has been produced, processed or used on the basis of or by the use of any item referred to in this Section or any information transferred from Canada to Spain; or
- (d) Any other item required to be listed in the Inventory for Spain.

Section 4. The Government of Canada and the Government of Spain undertake to accept Agency safeguards as provided for in this Agreement on the items referred to in Sections 2 and 3.

Section 5. The Government of Canada and the Government of Spain undertake to facilitate the application of safeguards by the Agency and to co-operate with the Agency and with each other to that end.

Section 6. The Government of Canada and the Government of Spain shall each be responsible for ensuring that the provisions of this Agreement are complied with by all persons under their respective jurisdictions.

Section 7. The Government of Canada and the Government of Spain agree that the safeguards provided for in this Agreement implement the provisions of Article V(2) of the Co-operation Agreement.

Section 8. The Government of Canada and the Government of Spain agree that this Agreement shall not affect any rights or obligations of the Government of Canada or the Government of Spain other than those referred to in Section 7, set out in the Co-operation Agreement.

PART III. UNDERTAKING BY THE AGENCY

Section 9. The Agency undertakes to apply safeguards in accordance with the terms of this Agreement on nuclear material, material, equipment and facilities referred to in Sections 2 and 3 to ensure, so far as it is able, that no such item is used for the manufacture of any nuclear weapon or to further any other military purpose or for the manufacture of any other nuclear explosive device.

PART IV. SAFEGUARDS PRINCIPLES

Section 10. In applying safeguards, the Agency shall observe the principles set forth in paragraphs 9 to 14 of the Safeguards Document. The Parties shall consult annually or at any other time at the request of any Party to ensure the effective implementation of this Agreement and for this purpose the Parties may provide each other such information as may be required.

PART V. SAFEGUARDS PROCEDURES

Section 11. (a) The safeguards procedures to be applied by the Agency are those specified in the Safeguards Document.

(b) The Agency shall make subsidiary arrangements with each Government concerning the implementation of safeguards procedures which shall include such containment and surveillance measures as are required for the effective application of safeguards, as well as any procedures necessary for maintaining and verifying the correctness of the Inventory with respect to facilities, equipment, nuclear material and material. The subsidiary arrangements required by this Section shall enter into force within three months of the entry into force of this Agreement.

(c) The Agency shall have the right to request the information referred to in paragraph 41 of the Safeguards Document and to make the inspections referred to in paragraph 51 thereof.

PART VI. ESTABLISHMENT AND MAINTENANCE OF INVENTORIES

Section 12. The Agency shall establish and maintain an Inventory for Spain and an Inventory for Canada in accordance with Section 13 of this Agreement. The Agency shall send copies of the Inventory to the Government of Spain and to the Government of Canada every twelve months. The Agency shall send copies of the Inventory to both Governments at any other time within two weeks of receiving a request for such a copy from either Government.

Section 13. The following items shall be listed in the Inventory for each State:

(a) Main Part:

- (i) nuclear material, material, equipment and any facility transferred from the other State to the State concerned under the Co-operation Agreement;
- (ii) any equipment and facility which is designed, constructed or operated in the State concerned on the basis of or by the use of information transferred from the other State;
- (iii) material which has been produced, processed or used in the State concerned on the basis of or by the use of any facility, equipment or information transferred from the other State;
- (iv) nuclear material, including subsequent generations of special fissionable material, which has been produced, processed or used on the basis or by the use of any item referred to in the Inventory or any information transferred from the other State.

If nuclear material has been substituted for any nuclear material referred to in (i) and (iv) above in accordance with paragraph 25 of the Safeguards Document, the substituted material shall be listed in place of the nuclear material referred to in (i) and (iv) above.

(b) Subsidiary Part:

- (i) any facility while containing equipment referred to in the Main Part of the Inventory;
- (ii) any facility and equipment while storing, using or processing any nuclear material or any material referred to in the Main Part of the Inventory.

(c) Inactive Part:

any nuclear material which is not listed in the Main Part of the Inventory because:

- (i) it has been exempted from safeguards pursuant to Section 20; or
- (ii) safeguards thereon have been suspended pursuant to Section 21.

Section 14. (a) Without restricting the generality of Section 13(a)(ii), any facility or equipment for the separation of the isotopes of uranium or the processing of irradiated nuclear material or the production of heavy water shall be deemed to be a facility or equipment referred to in Section 13(a)(ii) if:

- (i) the chemical or physical operating process of the facility or equipment is the same or employs the same principles as that of a facility or of equipment or as that contained in information transferred from the other State; and
- (ii) the facility or equipment is designed, constructed, commences operation or is first used within twenty years from the commencement of operation of a transferred facility, or the first use of transferred equipment or information in an operating facility.

(b) Before the transfer of any facility, equipment or information for or relating to the separation of the isotopes of uranium or processing of irradiated nuclear material or the production of heavy water, the Government shall, for the purposes of (a) above, identify in writing the physical or chemical operating process which characterizes the facility or equipment or is contained in the information to be transferred and shall notify the Agency of this identification.

Section 15. (a) (i) The Government of Canada and the Government of Spain shall jointly notify the Agency of items required to be listed in the Inventory as of the date of the entry into force of this Agreement, within two weeks thereof.

(ii) With respect to any transfer of facilities, equipment, nuclear material or material from Canada to Spain or from Spain to Canada after the entry into force of this Agreement, the Government of the State from which an item is transferred shall notify the Agency and the other Government of such transfer and the mode of transport, at the time of shipment. The Government of the State to which the item is transferred shall notify the Agency and the other Government within 30 days of receipt of the item in question; upon receipt of the latter notification the Agency shall list the item in question in the Inventory. In the case of transfers of source material in quantities not exceeding one metric ton, the Agency may be notified at quarterly intervals.

(b) Each Government shall, within the time limits prescribed in the subsidiary arrangements made pursuant to Section 11(b), notify the Agency and the other Government of any equipment or facility which is required to be listed in sub-part (ii) of the Main Part of its Inventory.

(c) Either Government, after consultations with the other Government, may notify the Agency of any equipment or facility which it has determined is required to be listed in sub-part (ii) of the Main Part of the Inventory of the other Government.

(d) Each Government shall notify the Agency, by means of reports in accordance with the Safeguards Document and the subsidiary arrangements made pursuant to Section 11(b), of any nuclear material or material produced, processed or used and which is required to be listed in sub-part (iii) or (iv) of the Main Part of its Inventory.

(e) The Government concerned shall notify the Agency of any facility required to be listed in the Subsidiary Part of its Inventory.

Section 16. Any notification made pursuant to Section 15 or 18 shall specify, *inter alia*, to the extent relevant, the nuclear and chemical composition, physical form and the quantity of the nuclear material or material, or the type and capacity of any equipment, facility or major component of any equipment or

facility, the date of shipment, the date of receipt, the identity of the consignor and consignee, and any other relevant information.

Section 17. The Agency shall, within thirty days of receiving a notification pursuant to Section 15(a), (b) or (c), inform both Governments that the items covered by the notification are listed in the Main Part of the Inventory.

PART VII. TRANSFERS

Section 18. (a) The Government concerned shall notify the Agency and the other Government of any intended transfer to or construction in a State other than Canada or Spain of nuclear material, material, equipment or any facility which is or would, except for the proposed transfer or construction, be required to be listed in the Main Part of its Inventory. Such nuclear material, material, equipment or facility shall not be so transferred or constructed until the Agency has informed both Governments that it has satisfied itself that Agency safeguards will apply with respect to such nuclear material, material, equipment or facility.

(b) Information shall not be transferred or otherwise be made available to a State other than Canada or Spain until the Agency has informed both Governments that it has satisfied itself that Agency safeguards will apply in connection with the use of such information.

(c) The Agency shall inform both Governments, within a period to be specified in the subsidiary arrangements, whether it is satisfied that Agency safeguards will apply with respect to the nuclear material, material, equipment or facility or in connection with the use of the information in question. In the event that the Agency is not satisfied in this regard, it shall indicate what steps are necessary to ensure that Agency safeguards shall apply before the intended transfer, construction or making available of the nuclear material, material, equipment, facility or information.

Section 19. Whenever it is intended to transfer nuclear material, material or equipment listed in the Main Part of the Inventory of one of the States to a facility within that State which is not yet listed in its Inventory, any notification that will be required pursuant to Section 15 shall be made by the Government concerned to the Agency and to the other Government before such transfer is effected. The transfer shall not be made to that facility until the Agency has confirmed that it has made arrangements in accordance with Section 11(b) with respect to that facility.

PART VIII. EXEMPTION FROM AND SUSPENSION OF SAFEGUARDS

Section 20. Nuclear material listed in the Main Part of the Inventory shall be exempted from safeguards under the conditions specified in paragraphs 21 and 22 of the Safeguards Document.

Section 21. The Agency may, with the agreement of both Governments, suspend safeguards on nuclear material under the conditions specified in paragraphs 24 and 25 of the Safeguards Document.

Section 22. Nuclear material which is exempted from safeguards pursuant to Section 20 and nuclear material on which safeguards have been suspended pursuant to Section 21 shall be deleted from the Main Part of the Inventory and shall be listed in the Inactive Part of the Inventory.

PART IX. TERMINATION OF SAFEGUARDS

Section 23. The safeguards applied pursuant to this Agreement shall be terminated by the Agency under the following conditions:

- (a) on nuclear material, material, equipment or facilities, upon transfer in accordance with Section 18 or upon return to the State from which the item in question was originally supplied;
- (b) on nuclear material under the conditions specified in paragraph 26(c) and paragraph 27 of the Safeguards Document;
- (c) on material, equipment and facilities as and when the Agency determines that the item in question has been consumed, is no longer usable for any nuclear activity from the point of view of safeguards or has become practically irrecoverable.

Section 24. Upon the termination of safeguards on any nuclear material, material, equipment or facility pursuant to Section 23, the item in question shall be deleted from the Inventory. The Agency shall, within thirty days of deleting the listing of an item from the Inventory pursuant to Section 23(a) inform both Governments that such a deletion has been made.

PART X. AGENCY INSPECTORS

Section 25. The provisions of paragraphs 1 to 10 and 12 to 14, inclusive, of the Inspectors Document shall apply to Agency inspectors performing functions pursuant to this Agreement. However, paragraph 4 of the Inspectors Document shall not apply with regard to any facility or to nuclear material to which the Agency has access at all times. The actual procedures to implement paragraph 50 of the Safeguards Document shall be agreed before the facility or the nuclear material is listed in the Inventory.

Section 26. The relevant provisions of the Agreement on the Privileges and Immunities of the Agency¹ shall apply to the Agency, its inspectors and to any property of the Agency used by them in performing their functions under this Agreement.

PART XI. PHYSICAL PROTECTION

Section 27. Each Government shall take all the measures necessary for the physical protection of nuclear material, material, equipment and facilities required to be listed in its Inventory, shall be guided by the recommendations of the Agency with regard to such measures and shall at a minimum meet the levels of physical protection which are set out in Appendix C to this Agreement. The Parties shall consult from time to time regarding physical protection.

PART XII. FINANCIAL PROVISIONS

Section 28. Expenses shall be borne as follows:

- (a) subject to paragraph (b) of this Section, each Party shall bear any expenses incurred in the implementation of its responsibilities under this Agreement;
- (b) all special expenses incurred by the Government of Canada or by the Government of Spain or by persons under their respective jurisdiction, at the written

¹ United Nations, *Treaty Series*, vol. 374, p. 147.

request of the Agency, its inspectors or other officials, shall be reimbursed by the Agency if the Government concerned notifies the Agency before the expense is incurred that reimbursement will be required.

Nothing in this Section shall prejudice the allocation of expenses which are reasonably attributable to a failure by a Party to comply with this Agreement.

Section 29. The Government of the State concerned shall ensure that any protection against third-party liability, including any insurance or other financial security, in respect of a nuclear incident occurring in a nuclear facility in that State shall apply to the Agency and its inspectors when carrying out their functions under this Agreement as that protection applies to its nationals.

PART XIII. THE AGENCY'S OBLIGATIONS IN THE EVENT OF NON-COMPLIANCE

Section 30. (a) If the Board determines, in accordance with Article XII. C of the Statute, that there has been any non-compliance with this Agreement, the Board shall call upon the Government concerned to remedy such non-compliance forthwith, and the Board shall make such reports as it deems appropriate. In the event of failure by the Government concerned to take fully corrective action within a reasonable time, the Board may take any other measures provided for in Article XII. C of the Statute.

(b) The Agency shall immediately notify both Governments of any determination of the Board pursuant to this Section.

PART XIV. SETTLEMENT OF DISPUTES

Section 31. (a) Any dispute arising out of the interpretation or application of this Agreement which is not settled by negotiation or as may otherwise be agreed by the Parties concerned shall, on the request of any of the Parties concerned, be submitted to an arbitral tribunal composed as follows:

- (i) if the dispute involves only two of the Parties to this Agreement, all three Parties agreeing that the third is not concerned, the two Parties involved shall each designate one arbitrator, and the two arbitrators so designated shall elect a third, who shall be the Chairman. If within thirty 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 thirty days of the designation or appointment of the second arbitrator, the third arbitrator has not been elected; or
- (ii) if the dispute involves all three Parties to this Agreement, each Party shall designate one arbitrator, and the three arbitrators so designated shall by unanimous decision elect a fourth arbitrator, who shall be the Chairman, and a fifth arbitrator. If within thirty days of the request for arbitration any Party has not designated an arbitrator, any Party may request the President of the International Court of Justice to appoint the necessary number of arbitrators. The same procedure shall apply if, within thirty days of the designation or appointment of the third of the first three arbitrators, the Chairman or the fifth arbitrator has not been elected.

(b) A majority of the members of the arbitral tribunal shall constitute a quorum, and all decisions shall require the concurrence of at least a majority. 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 all Parties. The remuneration of the arbitrators shall be determined on the same basis as that for *ad hoc* judges of the International Court of Justice.

Section 32. Decisions of the Board concerning the implementation of this Agreement, except such as relate only to Part XII, shall, if they so provide, be given effect immediately by the Parties, pending the final settlement of any dispute.

PART XV. FINAL CLAUSES

Section 33. The Parties shall, at the request of any one of them, consult about amending this Agreement. If the Board decides to make any changes in the Safeguards Document or in the Inspectors Document, this Agreement shall be amended to take account of such changes.

Section 34. (a) This Agreement shall enter into force upon signature by or for the Director General of the Agency and by the authorized representatives of Canada and Spain. It shall remain in force until safeguards have been terminated, in accordance with its provisions, on all nuclear material, subsequent generations of produced special fissionable material, subject to safeguards under this Agreement and all other items referred to in Sections 2 and 3.

(b) The Agency shall not apply the safeguards provided for in this Agreement in Canada so long as it is applying safeguards there pursuant to the Agreement for the application of safeguards concluded between Canada and the Agency on 21 February 1972.¹ The Agency shall not apply the safeguards provided for in this Agreement in Spain if it applies safeguards pursuant to an agreement concluded with Spain for the application of safeguards which the Board agrees is equivalent in scope to the aforementioned agreement between Canada and the Agency. Consultations shall be held with respect to matters covered by the present Agreement at the request of any of the Parties.

(c) If, after this Agreement has ceased to be in force, a facility or equipment is designed, constructed or operated in either State on the basis of or by the use of information transferred from the other, this Agreement shall forthwith be reinstated.

APPENDIX 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

¹ United Nations, *Treaty Series*, vol. 814, p. 255.

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 defined 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, 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. *Primary coolant pumps*: Pumps especially designed or prepared for circulating the primary coolant for nuclear reactors as defined in paragraph 1 above.

9. *Facilities for the reprocessing of irradiated fuel elements*, and equipment especially designed or prepared therefor.

A “Facility 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.

10. *Facilities for the fabrication of fuel elements*:

A “Facility 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 solid fuel.

11. *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.

12. *Facilities for the production of heavy water:*

A “Facility for the production of heavy water” includes the plant and equipment specially designed for the enrichment of deuterium or its compounds.

13. Major components of Items 1 to 12 above, as well as any significant fraction of the items essential to the operation of a facility for the reprocessing or enrichment of nuclear material or the production of heavy water.

APPENDIX B

SUBSTANCES SPECIALLY PREPARED FOR THE USE OR PRODUCTION OF “SOURCE MATERIAL” OR “SPECIAL FISSIONABLE MATERIAL”

1. *Deuterium and heavy water:* Deuterium and any deuterium compound in which the ratio of deuterium to hydrogen exceeds 1:5000 for use in a nuclear reactor, as defined in paragraph 1 of Appendix A, 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.

APPENDIX C

AGREED LEVELS OF PHYSICAL PROTECTION

The agreed levels of physical protection to be ensured by the appropriate governmental authorities in the use, storage and transportation of the materials of the attached table shall as a minimum include protection characteristics as follows:

Category III

- Use and Storage within an area to which access is controlled.
- Transportation under special precautions including prior arrangement between sender, recipient and carrier, and prior agreement between States 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 arrangement between sender, recipient and carrier, and prior agreement between States in case of international transport specifying time, place and procedures for transferring transport responsibility.

Category I

Materials 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 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 Category II and III materials and, in addition, under constant surveillance of escorts and under conditions which assure close communication with appropriate response forces.

CATEGORIZATION OF NUCLEAR MATERIAL

Material	Form	Category		
		I	II	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		^e	^e	Depleted or natural uranium, thorium or low enriched fuel (less than 10% fissile content) ^f

^a As identified in the Statute of the IAEA.

^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 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 when the radiation level from the fuel exceeds 100 rads/hour at one metre unshielded.

DONE in Vienna this tenth day of February 1977, in triplicate in the English, French and Spanish languages, all three texts being equally authentic.

For the International Atomic Energy Agency:

SIGVARD EKLUND

For the Government of Canada:

NEIL HAFNEY

For the Government of Spain:

J. M. CASTRO-RIAL
