

No. 23282

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**INTERNATIONAL ATOMIC ENERGY AGENCY,  
CANADA, JAMAICA and UNITED STATES  
OF AMERICA**

**Agreement concerning the transfer of enriched uranium for  
a low power research reactor (with annexes). Signed at  
Vienna on 25 January 1984**

*Authentic texts: English and French.*

*Registered by the International Atomic Energy Agency on 15 March 1985.*

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**AGENCE INTERNATIONALE DE L'ÉNERGIE  
ATOMIQUE, CANADA, JAMAÏQUE  
et ÉTATS-UNIS D'AMÉRIQUE**

**Accord concernant la cession d'uranium enrichi pour un  
réacteur de recherche de faible puissance (avec an-  
nexes). Signé à Vienne le 25 janvier 1984**

*Textes authentiques : anglais et français.*

*Enregistré par l'Agence internationale de l'énergie atomique le 15 mars  
1985.*

AGREEMENT<sup>1</sup> BETWEEN THE INTERNATIONAL ATOMIC ENERGY AGENCY AND THE GOVERNMENTS OF CANADA, JAMAICA AND THE UNITED STATES OF AMERICA CONCERNING THE TRANSFER OF ENRICHED URANIUM FOR A LOW POWER RESEARCH REACTOR

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WHEREAS the Government of Jamaica (hereinafter called “Jamaica”), desiring to establish a project relating to the operation of a safe low power critical experiment reactor of the type known as Slowpoke II (hereinafter called the “reactor”) supplied to it by the Government of Canada (hereinafter called “Canada”), has requested the assistance of the International Atomic Energy Agency (hereinafter called the “Agency”) in securing the special fissionable material contained in fuel elements for the reactor;

WHEREAS Canada and Jamaica concluded an exchange of notes on 30 June 1983<sup>2</sup> setting forth non-proliferation terms and conditions relating to the supply of the reactor and its core;

WHEREAS, under the Agreement for Cooperation Concerning the Civil Uses of Atomic Energy Between the Government of the United States of America (hereinafter called “United States”) and Canada, concluded on 21 July 1955,<sup>3</sup> as amended<sup>4</sup> (hereinafter called the “Canada–United States Cooperation Agreement”), the United States sold enriched uranium to Canada, and its transfer beyond the jurisdiction of Canada is subject to the terms of that Agreement;

WHEREAS the fuel elements Canada intends to provide for the reactor have been manufactured with enriched uranium of United States origin, bought by Canada pursuant to the Canada–United States Cooperation Agreement;

WHEREAS the Agency and the United States on 11 May 1959 signed an Agreement for Cooperation,<sup>5</sup> as amended<sup>6</sup> (hereinafter called the “United States–IAEA Cooperation Agreement”);

WHEREAS Jamaica on 6 November 1978 concluded with the Agency an Agreement for the Application of Safeguards<sup>7</sup> in Connection with the Treaty on the Prohibition of Nuclear Weapons in Latin America<sup>8</sup> and the Treaty on the Non-Proliferation of Nuclear Weapons<sup>9</sup> (hereinafter called the “Jamaica–IAEA Safeguards Agreement”); and

WHEREAS the Board of Governors of the Agency (hereinafter called the “Board”) approved the project on 6 October 1983;

<sup>1</sup> Came into force on 25 January 1984 by signature, in accordance with article XII (1).

<sup>2</sup> United Nations, *Treaty Series*, vol. 1467, No. 1-24865.

<sup>3</sup> The Agreement was concluded on 15 June 1955 and entered into force on 21 July 1955. See United Nations, *Treaty Series*, vol. 235, p. 175.

<sup>4</sup> United Nations, *Treaty Series*, vol. 279, p. 318; vol. 377, p. 412; vol. 453, p. 362, and vol. 1228, p. 425.

<sup>5</sup> *Ibid.*, vol. 339, p. 359.

<sup>6</sup> *Ibid.*, vol. 951, p. 412, and vol. 1220, p. 316.

<sup>7</sup> *Ibid.*, vol. 1161, p. 381.

<sup>8</sup> *Ibid.*, vol. 634, p. 281.

<sup>9</sup> *Ibid.*, vol. 729, p. 161.

NOW THEREFORE the Agency, Canada, Jamaica and the United States hereby agree as follows:

*Article I. DEFINITION OF THE PROJECT*

The project covered by this Agreement relates to the operation of a Slow-poke II reactor by the University of the West Indies at Kingston, Jamaica, for research and training purposes.

*Article II. SUPPLY OF ENRICHED URANIUM*

1. Subject to the terms of the Canada–United States Cooperation Agreement, Canada shall transfer to the Agency and the Agency, subject to the terms of the United States–IAEA Cooperation Agreement, shall retransfer to Jamaica approximately 906 grams of uranium property of Canada and of United States origin, enriched to approximately 93.1 per cent by weight in the isotope uranium-235 and contained in fuel elements, and approximately 1 gram of such uranium enriched to approximately 93 per cent by weight in the isotope uranium-235 and contained in metal foils (hereinafter called the “supplied material”) for the reactor.

2. The United States shall approve the transfer specified in paragraph 1, pursuant to the Canada–United States Cooperation Agreement. Upon transfer to Jamaica, the supplied material shall be subject to the terms and conditions of the United States–IAEA Cooperation Agreement.

3. The supplied material and any special fissionable material produced through its use, including subsequent generations of produced special fissionable material, shall be used exclusively by and remain at the University of the West Indies in Kingston, unless Jamaica, Canada and the United States otherwise agree.

4. The supplied material and any special fissionable material produced through its use, including subsequent generations of produced special fissionable material, shall be stored or reprocessed or otherwise altered in form or content only under conditions and in facilities acceptable to Jamaica, Canada and the United States. Such material shall not be further enriched unless Jamaica, Canada and the United States agree.

*Article III. SHIPMENT OF THE SUPPLIED MATERIAL*

All arrangements for the export from Canada of the supplied material shall be the responsibility of Canada and Jamaica. Prior to the export of any part of such material, Canada shall notify the United States and the Agency of the amount thereof and of the date, place and method of shipment.

*Article IV. TRANSPORT, HANDLING AND USE*

1. Canada and Jamaica shall take all appropriate measures to ensure the safe transport, handling and use of the supplied material. After export from Canada, such measures shall be the responsibility of Jamaica.

2. Neither the United States nor the Agency warrants the suitability or fitness of the supplied material for any particular use or application or shall at any time bear any responsibility towards Jamaica or Canada or any person for any claim arising out of the transport, handling or use of the supplied material.

#### *Article V. SAFEGUARDS*

1. Jamaica undertakes that the reactor, the supplied material and any special fissionable material used in or produced through the use of either, including subsequent generations of produced special fissionable material, shall not be used for the manufacture of any nuclear weapon or any nuclear explosive device, or for research on or the development of any nuclear weapon or any nuclear explosive device, or for any other military purpose.

2. The safeguards rights and responsibilities of the Agency provided for in article XII.A of the Statute of the Agency<sup>1</sup> (hereinafter called the "Statute") are relevant to the project and shall be implemented and maintained with respect to the project. Jamaica shall cooperate with the Agency to facilitate the implementation of the safeguards required by this Agreement.

3. The implementation of the Agency's safeguards rights and responsibilities referred to in paragraph 2 is satisfied by the application of safeguards pursuant to the Jamaica-IAEA Safeguards Agreement.

4. In the event the Board determines, in accordance with article XII.C of the Statute, that there has been any non-compliance with paragraph 1 or 2 of this article, the Board shall call upon Jamaica to remedy such non-compliance forthwith, and the Board shall make such reports as it deems appropriate. In the event of failure by Jamaica 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.

5. Upon request of the United States or Canada, Jamaica shall inform that State of the status of all inventories of any materials required to be safeguarded pursuant to this Agreement. If the United States or Canada so requests, Jamaica shall permit the Agency to inform that State of the status of all such inventories to the extent such information is available to the Agency.

#### *Article VI. SAFETY STANDARDS AND MEASURES*

The safety standards and measures specified in annex A shall apply to the project.

#### *Article VII. AGENCY INSPECTORS*

The relevant provisions of the Jamaica-IAEA Safeguards Agreement shall apply to Agency inspectors performing functions pursuant to this Agreement.

#### *Article VIII. SCIENTIFIC INFORMATION*

In conformity with article VIII.B of the Statute, Jamaica shall make available to the Agency without charge all scientific information developed as a result of the assistance provided by the Agency for the project.

#### *Article IX. LANGUAGES*

All reports and other information required for the implementation of this Agreement shall be submitted to the Agency in one of the working languages of the Board.

<sup>1</sup> United Nations, *Treaty Series*, vol. 276, p. 3, and vol. 471, p. 334.

### Article X. PHYSICAL PROTECTION

1. Jamaica undertakes that adequate physical protection measures shall be maintained with respect to the supplied material and any special fissionable material produced through the use of the supplied material, including subsequent generations of produced special fissionable material.

2. The Parties to this Agreement (hereinafter called the “Parties”) agree to the levels for the application of physical protection set forth in annex B, which levels may be modified by mutual consent of the Parties without amendment to this Agreement. Jamaica shall maintain adequate physical protection measures in accordance with such levels. These measures shall as a minimum provide protection comparable to that set forth in Agency document INFCIRC/255/Rev.1, entitled “The Physical Protection of Nuclear Material”, or in any revision of that document agreed to by the Parties.

### Article XI. SETTLEMENT OF DISPUTES

1. Any decision of the Board concerning the implementation of article V, VI or VII shall, if the decision so provides, be given effect immediately by Jamaica and the Agency pending the final settlement of the dispute.

2. Any dispute arising out of the interpretation or implementation 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 such Party be submitted to an arbitral tribunal composed as follows: each Party to the dispute shall designate one arbitrator and the arbitrators so designated shall by unanimous decision elect an additional arbitrator, who shall be the Chairman. If the number of arbitrators so selected is even, the Parties to the dispute shall by unanimous decision elect an additional arbitrator. If within thirty days of the request for arbitration any Party to the dispute has not designated an arbitrator, any other Party to the dispute 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 arbitrators, the Chairman or any required additional 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. The arbitral procedure shall be established by the tribunal, whose decisions, including all rulings concerning its constitution, procedure, jurisdiction and the division of the expenses of arbitration between the Parties to the dispute, shall be final and binding on all the Parties concerned. The remuneration of the arbitrators shall be determined on the same basis as that of *ad hoc* judges of the International Court of Justice.

### Article XII. ENTRY INTO FORCE AND DURATION

1. This Agreement shall enter into force upon signature by or for the Director General of the Agency and by the authorized representatives of Canada, Jamaica and the United States.

2. This Agreement shall continue in effect until the Parties agree that any nuclear material which was ever subject to this Agreement may be transferred beyond the territory of Jamaica or out of its jurisdiction or control, or until such time as the Parties agree that such material is no longer usable for any nuclear activity relevant from the point of view of seafguards.

DONE in Vienna, on the twenty-fifth day of January 1984, in quadruplicate in the English and French languages, the texts in both languages being equally authentic.

For the International Atomic Energy Agency:

HANS BLIX

For the Government of Canada:

ALAN W. SULLIVAN

For the Government of Jamaica:

K. G. A. HILL

For the Government of the United States of America:

RICHARD S. SULLIVAN

## ANNEX A

### SAFETY STANDARDS AND MEASURES

1. The safety standards and measures applicable to the project shall be those defined in Agency document INFCIRC/18/Rev.1 (hereinafter called the "Safety Document") as specified below.

2. Jamaica shall apply the Agency's Basic Safety Standards for Radiation Protection\* and the relevant provisions of the Agency's Regulations for the Safe Transport of Radioactive Materials\*\*, as they may be revised by the Agency from time to time, and shall as far as possible apply them also to any shipment of the supplied material outside the jurisdiction of Jamaica. Jamaica shall endeavour to ensure safety conditions as recommended in the Agency's Code of Practice on the Safe Operation of Critical Assemblies and Research Reactors\*\*\* and other relevant Codes of Practice.

3. Jamaica shall arrange for the submission to the Agency, at least thirty (30) days prior to the proposed transfer of any part of the supplied material to the jurisdiction of Jamaica, of a detailed safety analysis report containing the information specified in paragraph 4.7 of the Safety Document, with particular reference to the following types of operations, to the extent that all relevant information is not yet available to the Agency:

- (a) Receipt and handling of the supplied material;
- (b) Loading of the supplied material into the reactor;
- (c) Start-up and pre-operational testing of the reactor with the supplied material;
- (d) Experimental program and procedures involving the reactor;
- (e) Unloading of the supplied material from the reactor; and
- (f) Handling and storage of the supplied material after unloading from the reactor.

4. Once the Agency has determined that the safety measures provided for the project are adequate, the Agency shall give its consent for the start of the proposed operations. Should Jamaica desire to make substantial modifications to the procedures with respect to

\* IAEA Safety Series No. 9, 1982 Edition (STI/PUB/607).

\*\* *Ibid.*, No. 6, 1973 Revised Edition (as amended) (STI/PUB/517).

\*\*\* *Ibid.*, No. 35, 1983 Edition (STI/PUB/667).

which information has been submitted, or to perform any operations with the reactor or the supplied material with respect to which operations no information has been submitted, it shall submit to the Agency all relevant information as specified in paragraph 4.7 of the Safety Document, on the basis of which the Agency may require the application of additional safety measures in accordance with paragraph 4.8 of the Safety Document. Once Jamaica has undertaken to apply the additional safety measures requested by the Agency, the Agency shall give its consent for the modifications or operations envisaged by Jamaica.

5. Jamaica shall arrange for submission to the Agency, as appropriate, of the reports specified in paragraphs 4.9 and 4.10 of the Safety Document.

6. The Agency may, in agreement with Jamaica, send safety missions for the purpose of providing advice and assistance to Jamaica in connection with the application of adequate safety measures to the project, in accordance with paragraphs 5.1 and 5.3 of the Safety Document. Moreover, special safety missions may be arranged by the Agency in the circumstances specified in paragraph 5.2 of the Safety Document.

7. Changes in the safety standards and measures laid down in this Annex may be made by mutual consent between the Agency and Jamaica in accordance with paragraphs 6.2 and 6.3 of the Safety Document.

## ANNEX B

### LEVELS OF PHYSICAL PROTECTION

Pursuant to article X, the agreed levels of physical protection to be ensured by the competent national authorities in the use, storage and transportation of nuclear material listed in 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 arrangements between sender, recipient and carrier, and prior agreement between entities subject to the jurisdiction and regulation of the supplier State and the recipient State, 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 between sender, recipient and carrier, and prior agreement between entities subject to the jurisdiction and regulation of the supplier State and the recipient State, respectively, 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 trust-

worthiness 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 short of war, 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 by escorts and under conditions which assure close communication with appropriate response forces.

Table. CATEGORIZATION OF NUCLEAR MATERIAL<sup>c</sup>

Material	Form	Category		
		I	II	III
1. Plutonium <sup>a, f</sup>	Unirradiated <sup>b</sup>	2 kg or more	Less than 2 kg but more than 500 g	500 g or less <sup>c</sup>
2. Uranium-235 <sup>d</sup>	Unirradiated <sup>b</sup>			
	—Uranium enriched to 20% <sup>235</sup> U or more	5 kg or more	Less than 5 kg but more than 1 kg	1 kg or less <sup>c</sup>
	—Uranium enriched to 10% <sup>235</sup> U but less than 20%	—	10 kg or more	Less than 10 kg <sup>c</sup>
	—Uranium enriched above natural, but less than 10% <sup>235</sup> U	—	—	10 kg or more
3. Uranium-233	Unirradiated <sup>b</sup>	2 kg or more	Less than 2 kg but more than 500 g	500 g or less <sup>c</sup>

<sup>a</sup> All plutonium except that with isotopic concentration exceeding 80% in plutonium-238.

<sup>b</sup> 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 meter unshielded.

<sup>c</sup> Less than a radiologically significant quantity should be exempted.

<sup>d</sup> 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.

<sup>e</sup> 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 one category level, while the radiation level from the fuel exceeds 100 rads/h at one meter unshielded.

<sup>f</sup> The State's competent 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 of 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.