

No. 25952

**INTERNATIONAL ATOMIC ENERGY AGENCY,
THAILAND
and UNITED STATES OF AMERICA**

**Agreement concerning the transfer of enriched uranium for
a research reactor (with annexes). Signed at Vienna on
30 September 1986**

Authentic text: English.

Registered by the International Atomic Energy Agency on 25 May 1988.

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

**Accord concernant la cession d'uranium enrichi pour un ré-
acteur de recherche (avec annexes). Signé à Vienne
le 30 septembre 1986**

Texte authentique : anglais.

Enregistré par l'Agence internationale de l'énergie atomique le 25 mai 1988.

AGREEMENT¹ BETWEEN THE INTERNATIONAL ATOMIC ENERGY AGENCY AND THE GOVERNMENTS OF THE KINGDOM OF THAILAND AND THE UNITED STATES OF AMERICA CONCERNING THE TRANSFER OF ENRICHED URANIUM FOR A RESEARCH REACTOR

Whereas the Government of the Kingdom of Thailand (hereinafter called "Thailand"), desiring to continue a project consisting of a reactor for training and research purposes, has requested the assistance of the International Atomic Energy Agency (hereinafter called the "Agency") in securing the special fissionable material therefor;

Whereas Thailand on 16 May 1974 concluded with the Agency an agreement for the application of safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons² (hereinafter called the "Treaty Safeguards Agreement") which entered into force on that date;

Whereas Thailand and the Government of the United States of America (hereinafter called the "United States") reaffirm their support of the objectives of the Statute of the Agency (hereinafter called the "Statute")³ and their commitment to ensuring that the international development and use of nuclear energy for peaceful purposes are carried out under arrangements which, to the maximum extent, will prevent the proliferation of nuclear explosive devices;

Whereas Thailand has made arrangements with a manufacturer in the United States of America (hereinafter called the "manufacturer") for the fabrication of enriched uranium into fuel elements for the research reactor;

Whereas under the Agreement for Co-operation between the Agency and the United States, concluded on 11 May 1959, as amended⁴ (hereinafter called the "Co-operation Agreement"), the United States undertook to make available to the Agency pursuant to the Statute certain quantities of special fissionable material, and also undertook, subject to various applicable provisions and licence requirements, to permit, upon request of the Agency, persons under the jurisdiction of the United States to make arrangements to transfer and export materials, equipment or facilities for Members of the Agency in connection with an Agency-assisted project;

Whereas, pursuant to the Co-operation Agreement, the Agency and the United States on 14 June 1974 concluded a Master Agreement Governing Sales of Source, By-Product and Special Nuclear Materials for Research Purposes⁵ (hereinafter called the "Master Agreement"), and

Whereas the Board of Governors of the Agency (hereinafter called the "Board") approved the Agency's assistance for the project on 23 September 1986;

¹ Came into force on 30 September 1986 by signature, in accordance with article XIII (1).

² United Nations, *Treaty Series*, vol. 1043, p. 291.

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

⁴ *Ibid.*, vol. 339, p. 359; vol. 951, p. 412 and vol. 1220, p. 316.

⁵ *Ibid.*, vol. 964, p. 69.

Now therefore the Agency, Thailand and the United States hereby agree as follows:

Article I. DEFINITION OF THE PROJECT

1. The project to which this Agreement relates is the continued operation of the TRIGA Mark III research reactor (hereinafter called the “reactor”) at the Thai Office of Atomic Energy for Peace at Bangkok, Bangkok, Thailand (hereinafter called the “AEP Office at Bangkok”).

2. This Agreement shall apply, *mutatis mutandis*, to any additional assistance provided by the Agency to Thailand for the project.

3. Except as specified in this Agreement, neither the Agency nor the United States assumes any obligations or responsibilities insofar as the project is concerned.

Article II. SUPPLY OF ENRICHED URANIUM

1. The Agency, pursuant to Article IV of the Co-operation Agreement, shall request the United States to permit the transfer and export to Thailand of approximately 49.0 kilograms of uranium enriched to approximately 19.90 per cent by weight in the isotope uranium-235 (hereinafter called the “supplied material”), contained in fuel elements for the reactor.

2. The United States, subject to the provisions of the Co-operation Agreement and the Master Agreement and to the issuance of any required licences or permits, shall transfer to the Agency and the Agency shall transfer to Thailand the supplied material.

3. The particular terms and conditions for the transfer of the supplied material, including all charges for or connected with such material, a schedule of deliveries and shipping instructions, shall be specified in a Supplemental Contract to the Master Agreement to be concluded between the Agency, Thailand and the United States (hereinafter called the “Supplemental Contract”) in implementation of this Agreement.

4. 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 AEP Office at Bangkok, unless Thailand and the United States otherwise agree.

5. 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 Thailand and the United States. Such materials shall not be further enriched unless Thailand and the United States agree.

Article III. SHIPMENT OF THE SUPPLIED MATERIAL

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

Article IV. PAYMENT

1. Thailand shall pay the manufacturer all charges for or connected with the fabrication of the supplied material into fuel elements for the reactor in accordance with the arrangements made between them.

2. Thailand shall pay the United States all charges for or connected with the supplied material in accordance with the provisions of the Supplemental Contract, except as provided for in paragraph 4 of this Article.

3. In extending their assistance for the project, neither the Agency nor the United States assumes any financial responsibility in connection with the transfer of the supplied material by the United States to Thailand.

4. In order to assist and encourage research on peaceful nuclear uses or for medical therapy, the United States has in each calendar year offered to distribute to the Agency, free of charge, special fissionable material of a value of up to \$50,000 at the time of transfer, to be supplied from the amounts specified in Article II.A of the Co-operation Agreement. If the United States finds the project to which this Agreement relates eligible, it shall decide by the end of the calendar year in which this Agreement is concluded on the extent, if any, to which the project shall benefit by the gift offer, and shall promptly notify the Agency and Thailand of that decision. The payment provided for in paragraph 2 of this Article shall be reduced by the value of any gift material thus made available or, if payment for such material has been made by Thailand, the United States shall credit Thailand with the value of such material.

Article V. TRANSPORT, HANDLING AND USE

Thailand and the United States shall take all appropriate measures to ensure the safe transport, handling and use of the supplied material. 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 Thailand or any person for any claims arising out of the transport, handling and use of the supplied material.

Article VI. SAFEGUARDS

1. Thailand undertakes that the reactor, the supplied material and any special fissionable material produced through its use, 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 are relevant to the project and shall be implemented and maintained with respect to the project. Thailand shall co-operate 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 of this Article is satisfied by the application of safeguards procedures pursuant to the Treaty 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 Thailand to remedy such non-compliance forthwith, and the Board shall make such reports as it deems appropriate. In the event of failure by Thailand 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, Thailand shall inform the United States of the status of all inventories of any materials required to be safeguarded pursuant to this Agreement. If the United States so requests, Thailand shall permit the Agency

to inform the United States of the status of all such inventories to the extent such information is available to the Agency.

Article VII. SAFETY STANDARDS AND MEASURES

The safety standards and measures specified in Annex A to this Agreement shall apply to the project.

Article VIII. AGENCY INSPECTORS

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

Article IX. SCIENTIFIC INFORMATION

In conformity with Article VIII.B of the Statute, Thailand 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 X. 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.

Article XI. PHYSICAL PROTECTION

1. Thailand undertakes that adequate physical protection measures shall be maintained with respect to the supplied material and any special fissionable material produced through its use, 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 to this Agreement, which levels may be modified by mutual consent of the Parties without amendment to this Agreement. Thailand 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 INFICRC/225/Rev.1, entitled "The Physical Protection of Nuclear Material", as it may be revised from time to time.

Article XII. SETTLEMENT OF DISPUTES

1. Any decision of the Board concerning the implementation of Article VI, VII or VIII, if the decision so provides, shall be given effect immediately by the Agency and Thailand pending the final settlement of any 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 between 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 (30) 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 (30) 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 procedures 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 XIII. 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 Thailand and the United States.

2. This Agreement shall continue in effect so long as any material, equipment or facility which was ever subject to this Agreement remains in the territory of Thailand or under its jurisdiction or control anywhere, or until such time as the Parties agree that such material, equipment or facility is no longer usable for any nuclear activity relevant from the point of view of safeguards.

DONE in Vienna on the thirtieth day of September 1986, in triplicate in the English language.

For the International Atomic Energy Agency:

HANS BLIX

For the Government of the Kingdom of Thailand:

ATHORN PATUMASOOTRA

For the Government of the United States of America:

BRUCE K. CHAPMAN

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. Thailand 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 material, as they may be revised from time to time, and as far as possible Thailand shall apply them also to any shipment of the supplied material outside the jurisdiction of Thailand. Thailand shall endeavour to ensure safety conditions as recommended in the Agency's Code of Practice on the Safe Operation of Research Reactors and Critical Assemblies and other relevant Codes of Practice.

3. Thailand 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 Thailand, 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 Thailand desire to make substantial modifications to the procedures with respect to 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, Thailand 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 Thailand has undertaken to apply the additional safety measures requested by the Agency, the Agency shall give its consent for the modifications envisaged by Thailand.

5. Thailand 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 Thailand, send safety missions for the purpose of providing advice and assistance to Thailand 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 Thailand in accordance with paragraphs 6.2 and 6.3 of the Safety Document.

ANNEX B

LEVELS OF PHYSICAL PROTECTION

Pursuant to Article XI, 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 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 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^e

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

^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 meter 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 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.

^f 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.