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PROJECT AND SUPPLY AGREEMENT

**THE TEXT OF THE AGREEMENT OF 14 OCTOBER 1994 AMONG
THE INTERNATIONAL ATOMIC ENERGY AGENCY AND
THE GOVERNMENTS OF THE REPUBLIC OF GHANA AND
THE PEOPLE'S REPUBLIC OF CHINA CONCERNING THE TRANSFER OF
A MINIATURE NEUTRON RESEARCH REACTOR AND ENRICHED URANIUM**

1. The text^{1/} of the Project and Supply Agreement, which was approved by the Agency's Board of Governors on 5 December 1991, among the Agency and the Governments of the Republic of Ghana and the People's Republic of China concerning the transfer of a miniature neutron research reactor and enriched uranium is reproduced herein for the information of all Members.
2. The agreement entered into force on 14 October 1994, pursuant to Article XIII.

^{1/} The footnotes to the text have been added in the present information circular.

PROJECT AND SUPPLY AGREEMENT

AGREEMENT AMONG THE INTERNATIONAL ATOMIC ENERGY AGENCY AND THE GOVERNMENTS OF THE REPUBLIC OF GHANA AND THE PEOPLE'S REPUBLIC OF CHINA CONCERNING THE TRANSFER OF A MINIATURE NEUTRON RESEARCH REACTOR AND ENRICHED URANIUM

WHEREAS the Government of the Republic of Ghana (hereinafter called "Ghana"), desires to establish at the National Nuclear Research Institute at Legon-Accra in Ghana a project consisting of a 30 kw miniature neutron source reactor for improved analysis of mineral ores, radioisotope production for agricultural and medical use, research and training (hereinafter called the "Project");

WHEREAS Ghana has requested the assistance of the Agency in securing the research reactor and the special fissionable material therefor;

WHEREAS Ghana has also requested that the Agency contribute to the Project through its Technical Co-operation Programme;

WHEREAS the Board of Governors of the Agency (hereinafter called the "Board"), on 4 December 1990, approved project number GHA/1/010 entitled "Miniature Neutron Source Reactor" that relates to the last mentioned request by Ghana, as part of the Agency's Technical Co-operation Programme for 1991-92;

WHEREAS Ghana and the Agency are in the process of making arrangements with a manufacturer in the People's Republic of China (hereinafter called the "manufacturer") for the purchase of a miniature neutron source reactor and for the supply of fuel elements for the reactor;

WHEREAS Ghana on 23 August 1973 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 17 February 1975; and

WHEREAS the Board approved the Project on 5 December 1991;

NOW, THEREFORE, the Agency, Ghana and the Government of the People's Republic of China (hereinafter called "China") hereby agree as follows:

ARTICLE I

Definition of the Project

1. The Project to which this Agreement relates is the establishment at the National Nuclear Research Institute at Legon-Accra in Ghana (hereinafter called the "Institute), of a 30 kw miniature neutron source reactor, including any necessary ancillary equipment (hereinafter called the "supplied reactor") and its operation by the Institute.
2. This Agreement shall, mutatis mutandis, apply to any additional assistance provided by the Agency to Ghana for the Project.
3. Except as specified in this Agreement, the Agency assumes no obligations or responsibilities insofar as the Project is concerned.

ARTICLE II

Supply of the Reactor

1. The Agency shall request China to permit the transfer and export to Ghana of the supplied reactor.

² Reproduced in document INFCIRC/226.

2. China shall transfer and export to Ghana the supplied reactor and shall issue any required licenses or permits for that purpose.
3. All arrangements for the transfer and export to Ghana of the supplied reactor shall be made among the Agency, Ghana and the manufacturer.
4. The supplied reactor shall be used exclusively by and remain at the Institute, unless the Parties hereto otherwise agree.

ARTICLE III

Supply of Enriched Uranium

1. The Agency shall request China to permit the transfer and export to Ghana of approximately 980.40 grams of uranium enriched to approximately 90.2 per cent by weight in the isotope uranium-235 (hereinafter called the "supplied material") contained in fuel elements for the supplied reactor.
2. China shall transfer and export to Ghana the supplied material and shall issue any required licenses or permits for that purpose.
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 and arrangements for the export of the supplied material from China, shall be specified in arrangements to be made among the Agency, Ghana and the manufacturer in implementation of this Agreement.
4. The supplied material and any special fissionable material used in or produced through the use of the supplied reactor or the supplied material, including subsequent generations of produced special fissionable material, shall be used exclusively in the supplied reactor and used exclusively by and remain at the Institute, unless the Parties hereto otherwise agree.

5. The supplied material and any special fissionable material used in or produced through the use of the supplied reactor or the supplied material, 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 the Parties. Such materials shall not be further enriched unless the Parties hereto otherwise agree to the amendment of this Agreement for that purpose.

ARTICLE IV

Payment

1. Payment to the manufacturer of all charges for or connected with the supplied reactor, the supplied material and the fabrication of the supplied material into fuel elements, shall be made by the Agency and Ghana in accordance with the arrangements to be made among the Agency, Ghana and the manufacturer.
2. Except as provided in paragraph 1 of this Article, the Agency does not, in extending its assistance for the Project, assume any financial responsibility in connection with the transfer of the supplied reactor and the supplied material from China to Ghana.

ARTICLE V

Transport, Handling and Use

Ghana and China shall take all appropriate measures to ensure the safe transport, handling and use of the supplied reactor and the supplied material. The Agency does not warrant the suitability or fitness of the supplied reactor or the supplied material for any particular use or application and shall not at any time bear any responsibility towards Ghana, or any person for any claims arising out of the transport, handling and use of the supplied reactor or the supplied material.

ARTICLE VI

Safeguards

1. Ghana undertakes that the supplied reactor, the supplied material and any special fissionable material used in or produced through their 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 in such a way as to further any military purpose.
2. The safeguards rights and responsibilities of the Agency provided for in Article XII.A of the Statute of the Agency (hereinafter called the "Statute") are relevant to the Project and shall be implemented and maintained with respect to the Project. Ghana shall co-operate with the Agency to facilitate the implementation of the safeguards required by this Agreement.
3. Agency safeguards referred to in this Article shall, for the duration of this Agreement, be implemented pursuant to the Treaty Safeguards Agreement.
4. Article XII.C of the Statute shall apply with respect to any non-compliance by Ghana with the provisions of this Agreement.

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, Ghana 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. Ghana undertakes that adequate physical protection measures shall be maintained with respect to supplied facilities, material and any special fissionable material used in or

produced through the use thereof, including subsequent generations of produced special fissionable material.

2. 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. Ghana shall maintain adequate physical security measures in accordance with such levels. These measures shall as a minimum provide protection comparable to that set forth in Agency document INFCIRC/225/Rev.2, 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 shall, if the decision so provides, be given effect immediately by the Agency and Ghana 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 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 (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 Ghana and China.

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 Ghana 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 triplicate in the English language.

For the INTERNATIONAL ATOMIC ENERGY AGENCY:

(signed) Hans BLIX
(Signature)

Director General
(Title)

Vienna 7 February 1994
(Place) (Date)

For the GOVERNMENT OF THE REPUBLIC OF GHANA:

(signed) Benjamin G. GODWYLL
(Signature)

Resident Representative
(Title)

Vienna 14 October 1994
(Place) (Date)

For the GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA:

(signed) CHEN Shiqiu
(Signature)

Resident Representative
(Title)

Vienna 10 May 1994
(Place) (Date)

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") or in any further revision thereof and as specified below.
2. Ghana shall, inter alia, apply the Basic Safety Standards for Radiation Protection (IAEA Safety Series No. 9, Edition 1982, jointly sponsored by IAEA, WHO, ILO and OECD/NEA) and the relevant provisions of the Agency's Regulations for the Safe Transport of Radioactive Materials (IAEA Safety Series No. 6, 1985 Edition, as amended 1990) as they may be revised from time to time, and as far as possible Ghana shall apply them also to any shipment of the supplied materials and radioisotopes produced with the supplied reactor outside the jurisdiction of Ghana. Ghana shall, inter alia, ensure safety conditions as recommended in the Agency's Code of Practice on the Safe Operation of Research Reactors and Critical Assemblies (IAEA Safety Series No. 35, 1984 Edition) and other relevant IAEA Safety Standards.
3. Ghana 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 Ghana, of a detailed safety analysis report containing the information specified in paragraph 4.7 of the Safety Document and as recommended in the relevant sections of the Agency's Safety Series No. 35, 1984 Edition, including particular reference to the following types of operations, to the extent that the 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 Ghana 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, Ghana 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 Ghana 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 Ghana.

5. Ghana 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 Ghana, send safety missions for the purpose of providing advice and assistance to Ghana 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 Ghana 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		10 kg or more	Less than 10 kg ^c
	- uranium enriched to 10% ²³⁵ U but less than 20%		-	10 kg or more
	- uranium enriched above natural, but less than 10% ²³⁵ U	-	-	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

^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.