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BUREAU OF OCEANS AND INTERNATIONAL
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

XR-126

August 16, 1982 XSNM01669

Bangladesh

MEMORANDUM FOR JAMES R. SHEA
NUCLEAR REGULATORY COMMISSION

Enclosed is an Executive Branch analysis covering license applications for the export of a TRIGA Mark II research reactor and low-enriched uranium fuel for that reactor to Bangladesh. In accordance with the Atomic Energy Act, as amended, the analysis explicitly addresses how the requirements of Section 126 a.(1) of the Atomic Energy Act are met, including the specific criteria of Sections 127 and 128, as well as certain additional factors, envisaged by Section 126 a.(1).

The Executive Branch, on the basis of its review of this case, has concluded that the requirements of the Atomic Energy Act, as amended by the Nuclear Non-Proliferation Act of 1978, have been met and that the proposed exports would not be inimical to the common defense and security of the United States. Moreover, Bangladesh has adhered to the provisions of its Agreement for Cooperation with the United States. Therefore, the Executive Branch recommends that the requested export licenses be issued.

In view of the fact that the proposed reactor export is to be made pursuant to a new post-NNPA Agreement for Cooperation, expeditious action by the NRC in processing the license requests is recommended.

James B. Devine
James B. Devine
Deputy Assistant Secretary

Enclosure:
As stated.

XR-126

Country: Bangladesh

Transaction: The export of one TRIGA Mark II research reactor with pulsing capability and a nominal steady-state power of 3 MW consisting of reactor tank, fuel handling instrumentation, mechanical and cooling system components, experimental facilities, spares and replacement component tools, instruments and start-up monitoring equipment.

Applicant: General Atomic Company

Date of Application: May 24, 1977
Amended March 20, 1980

Purpose of Export

The purchaser of this TRIGA Mark II research reactor is the Bangladesh Atomic Energy Commission (BAEC). The reactor will be located at the BAEC Institute of Nuclear Technology, Savar, Bangladesh, and will be used for research and training in nuclear science and for isotope production. The TRIGA Mark II is rated at a nominal steady-state power level of 3 MW thermal and is an above ground, water-filled, pool-type facility with a pulsing capability from 2,000 to 6,400 MW. Total value of the reactor and associated components to be shipped under this application is approximately \$3,500,000. The reactor uses standard TRIGA fuel elements containing uranium enriched to 19.9%.

EXPORT LICENSE APPLICATION ANALYSIS

XSNM01669

Country: Bangladesh

Transaction: Export of 11.0 kilograms of U-235 contained in 55.4 kilograms of uranium enriched to 19.9 percent in the form of TRIGA reactor fuel elements and 7.4 grams of uranium enriched to 93 percent in four sealed fission chambers

Applicant: General Atomic

Date of Application: May 24, 1977
Amended: March 20, 1980

Purpose of Export

The low-enriched uranium in the form of 110 TRIGA fuel elements will be used for the initial core loading of the Bangladesh AEC 3 MW TRIGA Mark II research reactor. The 7.4 grams of 93 percent enriched uranium in four sealed neutron detectors for this reactor may now be exported under general license.



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EMBASSY OF THE
PEOPLE'S REPUBLIC OF BANGLADESH

Washington, D.C.

4538

ACTION
is assigned to

NEA

PAB

No. Pol(GN)-16/77

August 3, 1982

The Embassy of the People's Republic of Bangladesh presents its compliments to the Department of State of the United States of America and has the honour to refer to the Nuclear Cooperation Agreement between the Government of the People's Republic of Bangladesh and the Government of the United States of America concerning peaceful uses of nuclear energy signed in Dacca on September 27, 1981.

The Government of Bangladesh hereby confirms that the export from USA of a Triga Mark II Research Reactor and 55.28 Kilograms of 19.9 percent enriched uranium fuel to Bangladesh will be subject to the terms and conditions of the Nuclear Cooperation Agreement and that the recipient in Bangladesh (Bangladesh Atomic Energy Commission) is authorised by the Government of Bangladesh to receive, possess and use the equipment and material.

The Embassy of the People's Republic of Bangladesh avails itself of this opportunity to renew to the Department of State of the United States of America the assurances of its highest consideration.

The Department of State
Washington, D.C.



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1. Applicable Agreement for Cooperation

The proposed exports are subject to all of the terms and conditions of the Agreement for Cooperation between the Government of the United States of America and the Government of the People's Republic of Bangladesh concerning Peaceful Uses of Nuclear Energy, which entered into force on June 24, 1982. This was confirmed by a note from the Embassy of Bangladesh. A copy of that note is attached.

Bangladesh has adhered to all provisions of its agreement with the United States.

2. Extent to Which Export Criteria Are Met

A. Section 127 Criteria

As provided in Section 127 of the Atomic Energy Act, the following criteria govern exports for peaceful nuclear uses from the United States of source material, special nuclear material, production or utilization facilities, and any sensitive nuclear technology:

Criterion (1)

"IAEA safeguards as required by Article III(2) of the Treaty will be applied with respect to any such material or facilities proposed to be exported, to any such material or facilities previously exported and subject to the applicable Agreement for Cooperation, and to any special nuclear material used in or produced through the use thereof."

Bangladesh is a Party to the Treaty on the Non-Proliferation of Nuclear Weapons and deposited its instrument of ratification on September 27, 1979. The Government of Bangladesh has also signed a comprehensive safeguards agreement with the IAEA under Article III of the Treaty, which entered into force June 11, 1982.

In addition, Article 9, paragraph 3, of the U.S.-Bangladesh Agreement provides that, if either party becomes aware that the IAEA is not or will not be applying safeguards, the parties shall immediately enter into arrangements which conform to IAEA safeguards principles and procedures to ensure effective continuity of safeguards.

Therefore, it is the Executive Branch view that criterion (1) is met.

Criterion (2)

"No such material, facilities, or sensitive nuclear technology proposed to be exported or previously exported and subject to the applicable Agreement for Cooperation, and no special nuclear material produced through the use of such materials, facilities, or sensitive nuclear technology, will be used for any nuclear explosive device or for research on or development of any nuclear explosive device."

As a non-nuclear weapon state party to the NPT, Bangladesh is precluded from acquiring, developing or manufacturing nuclear explosive devices for any purpose.

Moreover, under Article 8 of the Agreement, Bangladesh explicitly "guarantees that no material, equipment, or components transferred to and under its jurisdiction pursuant to this agreement and no material used in or produced through the use of material, equipment or components so transferred and under its jurisdiction shall be used for any nuclear explosive device, for research on or development of any nuclear explosive device, or for any military purpose".

Therefore, it is the Executive Branch view that criterion (2) is met.

Criterion (3)

"Adequate physical security measures will be maintained with respect to such material or facilities proposed to be exported and to any special nuclear material used in or produced through the use thereof. Following the effective date of any regulations promulgated by the Commission pursuant to Section 304(d) of the Nuclear Non-Proliferation Act of 1978, physical security measures shall be deemed adequate if such measures provide a level of protection equivalent to that required by the applicable regulations."

Article 7, paragraph 2 of the U.S.-Bangladesh Agreement for Cooperation specifies that: "The parties agree to the levels for the application of physical security set forth in the Annex which levels may be modified by mutual consent of the parties. The parties shall maintain adequate physical security measures in accordance with such levels. Such measures shall, as a minimum, provide protection comparable to that set forth in IAEA document INFIRC/225/Revision 1 concerning the physical protection of nuclear material or in any revision of that document agreed to by the parties."

The Executive Branch has assessed the physical security measures planned by the People's Republic of Bangladesh with respect to nuclear material and facilities and determined that they will be adequate for the facility and nuclear fuel covered by those license applications and consistent with the NRC regulations referred to in Criterion 3..

Therefore, it is the view of the Executive Branch that criterion (3) is met.

Criterion (4)

No such materials, facilities, or sensitive nuclear technology proposed to be exported, and no special nuclear material produced through the use of such material, will be retransferred to the jurisdiction of any other nation or groups of nations unless the prior approval of the United States is obtained for such retransfer. In addition to other requirements of law, the United States may approve such retransfer only if the nation or group of nations designated to receive such retransfer agrees that it shall be subject to the conditions required by this section."

Article 5, paragraph 2, of the U.S.-Bangladesh Agreement for Cooperation stipulates that: "Material, equipment or components transferred pursuant to this agreement and any special nuclear material produced through the use of any such material or equipment may be transferred, except that each party guarantees that any such material, equipment, components or special nuclear material over which it has jurisdiction, shall not be transferred to unauthorized persons or, unless the parties agree, beyond its territorial jurisdiction."

This article clearly gives the U.S. the required approval right over the retransfer from Bangladesh of material, equipment or components supplied by the U.S. or produced through the use of such material or equipment and allows retransfers only if the parties agree.

Therefore, it is the Executive Branch view that criterion (4) is met.

Criterion (5)

"No such material proposed to be exported and no special nuclear material produced through the use of such material will be reprocessed, and no irradiated fuel elements containing such material removed from a reactor shall be altered in form or content, unless the prior approval of the United States is obtained for such reprocessing or alteration."

Article 6, paragraph 1, of the U.S.-Bangladesh Agreement for Cooperation provides that: "Each party guarantees that source and special nuclear material transferred to and under its jurisdiction pursuant to this agreement and source and special nuclear material used in or produced through the use of any material or equipment so transferred and under its jurisdiction shall not be reprocessed unless the parties agree."

Article 6, paragraph 2 provides that: "Each party guarantees that any plutonium, uranium 233, high enriched uranium or irradiated source or special nuclear material transferred to and under its jurisdiction pursuant to this agreement or used in or produced through the use of any material or equipment so transferred and under its jurisdiction shall not be altered in form or content, except by irradiation or further irradiation, unless the parties agree."

Article 6, paragraph 3 provides that: "Each party guarantees that uranium transferred to and under its jurisdiction pursuant to this agreement and uranium used in any equipment so transferred and under its jurisdiction shall not be enriched after transfer unless the parties agree."

This article clearly gives the U.S. the required approval right over reprocessing or alteration in form or content of any U.S.-supplied material, material produced through the use of U.S. material or equipment, or material used in U.S. equipment.

Therefore, it is the view of the Executive Branch that criterion (5) is met.

Criterion (6)

"No such sensitive nuclear technology shall be exported unless the foregoing conditions shall be applied to any nuclear material or equipment which is produced or constructed under the jurisdiction of the recipient nation or group of nations by or through the use of any such exported sensitive nuclear technology."

The proposed export does not involve the transfer of sensitive nuclear technology. Criterion (6) is, therefore, not applicable.

B. Section 128 Criterion

Section 128 a.(1) of the Atomic Energy Act establishes the following additional criterion: "As a condition of continued United States export of source material, special nuclear material, production or utilization facilities, and any sensitive nuclear technology to non-nuclear-weapon states, no such export shall be made unless IAEA safeguards are maintained with respect to all peaceful nuclear activities in, under the jurisdiction of, or carried out under the control of such state at the time of the export."

As a Party to the NPT, Bangladesh has accepted IAEA safeguards on all of its nuclear activities. Article 9, paragraphs 1 and 4 of the U.S.-Bangladesh Agreement for Cooperation contain an independent commitment to maintain full-scope safeguards.

This criterion is therefore satisfied.

3. Additional Factors

A. Safeguards Implementation

The IAEA Secretariat noted in its Annual Report for 1981 that in carrying out the safeguards program of the Agency, it did not detect any anomaly which would indicate the diversion of a significant amount of safeguarded nuclear material, or the misuse of facilities or equipment for the manufacture of a nuclear weapon or other nuclear explosive device. The Secretariat concluded that nuclear material under Agency safeguards remained in peaceful nuclear activities or was otherwise adequately accounted for.

The Executive Branch has no reason to believe that the IAEA Secretariat's report is not valid. In the light of this and other factors associated with the proposed transfers, the Executive Branch believes the framework of commitments, assurances, and safeguards is adequate for the purpose of those proposed exports.

B. Special Non-Proliferation and Other Foreign Policy Considerations

As this is the first reactor and nuclear fuel export to be made to Bangladesh from the U.S. pursuant to the new Agreement for Cooperation, incorporating all the requirements of the Nuclear Non-Proliferation Act of 1978, it is very important that every effort be made by the NRC to process this application expeditiously. Prompt action on this case will demonstrate the reliability of the U.S. as a nuclear supplier as well as the advantages of NPT adherence and acceptance of the new form of Agreement of Cooperation with the United States.

4. Inimicality Judgment

Based on review of the proposed export, it is the judgment of the Executive Branch that the proposed exports will not be inimical to the common defense and security, and that the licenses should be issued.