



United States Department of State

Washington, D.C. 20520

BUREAU OF OCEANS AND INTERNATIONAL  
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

May 13, 1985

Mr. James R. Shea  
Director of International Programs  
United States Nuclear Regulatory Commission  
Bethesda, Maryland

Dear Mr. Shea:

This letter is in response to the letter from your office dated May 18, 1984 requesting Executive Branch views as to whether issuance of the export license in accordance with the application hereinafter described meets the applicable criteria of the Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act of 1978:

**NRC No. XSNM02144** — Application by Transnuclear, Inc. for authorization to export to Belgium 51.3 kilograms of U-235 in 55.0 kilograms of uranium enriched to 93.3 percent. The enriched uranium in the form of  $UF_6$  will be shipped to NUKEM (FRG) and CERCA (France) for conversion and fabrication into fuel elements for the BR-2 research reactor operated by the Centre d'Etude de L'Energie Nucleaire (CEN/SCK) at Mol.

The proposed export would take place pursuant to the Additional Agreement for Cooperation Between the United States and the European Atomic Energy Community (EURATOM) as confirmed in a letter from the Delegation of the Commission of the European Communities, a copy of which is enclosed. EURATOM has adhered to the provisions of its Agreement for Cooperation with the United States.

The Executive Branch has reviewed this application and 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 export will not be inimical to the common defense and security of the United States. A detailed analysis for EURATOM was submitted December 8, 1978 for NRC applications XSNM01212, -1232 and -1241. In view of Executive Order 12506 extending the duration of the period specified in the first proviso to Section 126a(2) of the Atomic Energy Act of 1954, as amended, to March 10, 1986, that detailed analysis remains valid. There has been no other material change in circumstances since that submission.

The BR-2 is a high performance 125 MW (80 MW average) research and test reactor. The annual fuel requirement is about 44 kg U-235 when the reactor is operating at its average power of 80 MW. The BR-2 uses the highest uranium density ( $1.27 \text{ g/cm}^3$ ) of all U.S.-supplied research reactors outside the U.S. Required LEU fuel density is about  $7.0 \text{ g/cm}^3$  — the highest uranium density under development in the RERTR program. This density can be reduced if plates with thicker fuel meat can be used. Since the reactor also has stringent thermal-hydraulic requirements, it is one of the most difficult reactors outside of the U.S. to convert to LEU.

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PDR XPORT  
XSNM-2144 PDR

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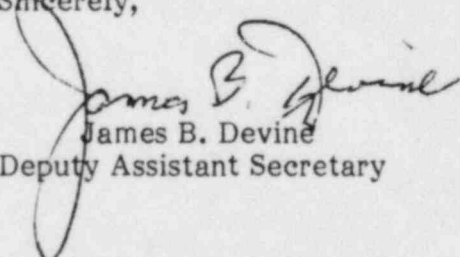
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The inventory as of December 31, 1983 was 135.3 kg U-235. Therefore, the inventory is sufficient to fuel the reactors three years or until about January 1987. The current request for 51.3 kg U-235 (in 55.0 kg HEU) is sufficient for about 14 months of operation, or until March 1988. Average lead time for enrichment, shipment, conversion, and fabrication for these elements is from 18 months to two years.

The Argonne National Laboratory (ANL), in its technical and economic analysis of the reactor, dated February 21, 1985, noted that in October 1984, CEN/SCK and ANL began a joint study program to investigate the options for conversion of the BR-2 to LEU fuel. CEN/SCK has agreed to irradiate six test elements (provided safe operation of the BR-2 can be assured at all times) and perform post irradiation examination of these elements. If no complications arise, these steps could be completed by the end of 1988. Conversion of the reactor to LEU will depend inter alia, on performance, safety and economic operating factors. The reactor would also have to be re-licensed to operate with LEU. Since the BR-2 is a difficult reactor to convert to LEU, completion of the LEU tests will be necessary before the feasibility of conversion can be determined. Thus, it appears that additional HEU exports will be needed for the BR-2 reactor.

On the basis of the foregoing, the Executive Branch recommends that the license be issued.

Sincerely,

  
James B. Devine  
Deputy Assistant Secretary

Enclosure:  
Assurance letter

D

DELEGATION OF THE COMMISSION OF THE EUROPEAN COMMUNITIES

EURATOM SUPPLY AGENCY

Washington, DC, May 7, 1984

Mr. Carlton E. Thorne  
Director of Politico-Military  
Security Affairs  
Office of International Security Affairs  
U.S. DOE  
Forrestal Building, Room 4B 014  
1000 Independence Ave., S.W.  
WASHINGTON, DC 20585

Subject : Transnuclear Inc.  
Application NUK-450 of May 3, 1984

Your ref. : XSNM-02144

Dear Mr. Thorne.

We certify that the material mentioned in this application, namely 51.3 kg of U-235 contained in 55.0 kg of total uranium (93.3 % U-235) and the transfer of this material will be subject to all terms and conditions of the Additional Agreement for Cooperation, dated July 25, 1960, as amended.

Further, we certify that

- 1) NUKEM GmbH, Hanau, W. Germany, CERCA Romans, France, Transnuklear GmbH, Hanau, W. Germany, as intermediate consignees and
- 2) Centre d' Etude de l'Energie Nucléaire, Mol, Belgium, as ultimate consignee

are authorized by EURATOM to receive and possess this material pursuant to the aforementioned Agreement for Cooperation.

The above mentioned material will be used as fuel for the BR-2 reactor in Mol, Belgium.

Sincerely,

cc : Mr. R. DE LABARRE, Department of State ✓  
Ms. Betty WRIGHT, N.R.C.  
Ms. Barbara HANNETT, Transnuclear

Doris Dubois  
Secretary, Nuclear Supply

*Doris Dubois*