

September 8, 1978

XSNM-937  
SECY-78-498

## COMMISSIONER ACTION

For: The Commissioners

From: James R. Shea, Director  
Office of International Programs *C. J. Shea*

Thru: */* Executive Director for Operations

Subject: PROPOSED LICENSE TO EXPORT HIGH-ENRICHED URANIUM  
TO JAPAN (APPLICATION NO. XSNM-937)

Purpose: Commission review of proposed issuance of subject  
license to Transnuclear Incorporated.

Discussion: In June 1976, Transnuclear Incorporated applied for a license to export 35.423 kilograms of uranium, enriched to 93.3% U-235 to Japan for use in the Japan Material Testing Reactor (JMTR) of the Oarai Research establishment in Tokyo. The material will first be converted by NUKEM in the FRG and then fabricated into fuel elements by Nuclear Fuel Industries Limited in Japan.

The JMTR, a 50 MWt research reactor, is Japan's principal reactor for testing materials in a high neutron flux. It is used for engineering tests on fuel elements and components of nuclear plants. High enriched uranium is required in this type of reactor to (1) maintain excess reactivity, which determines the length of the refueling cycle and (2) achieve the necessary neutron flux density to meet the objectives of the experimental programs being conducted. The US has provided the HEU fuel for this facility since its initial operation in 1968.

The JMTR has a core loading of 7 kilograms of U-235 at an enrichment of 93.15%. It operates a total of approximately six cycles per year for an annual requirement of 42 kilograms.

In response to our June 11, 1976 request for views, the Executive Branch has (1) concluded that issuance of the proposed license would not be inimical to the common

Contact:  
J.G. Dunn (492-7984)  
G.G. Oplinger (492-7866)

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Discussion:  
(continued)

defense and security of the United States; (2) confirmed that the material will be subject to the terms and conditions of the US-Japan Agreement for Cooperation and, during the time it is in the FRG, the US-EURATOM Additional Agreement for Cooperation; and (3) concluded that all the criteria of the NPPA currently are met.

The Commission will recall that on July 20, 1978 the Acting Secretary of State informed the Commission that the European Community agreed to open discussions on the US-EURATOM Agreement for Cooperation, constituting agreement to negotiate as called for in Section 404(a). By memorandum of July 31, the Executive Branch confirmed this commitment and recommended expeditious issuance of the EURATOM export licenses now pending action by the Commission, including cases in which a EURATOM member is the intermediate consignee.

Additional Executive Branch Views

The Executive Branch's June 27 analysis (Appendix B) notes among other things that:

1. This application has been approved by the President and meets the criteria for continued supply of HEU under existing commitments as set out in the White House Fact Sheet of April 27, 1977. This application was received over two years ago, but it was only recently included with other HEU applications submitted for Presidential review because the quantity of HEU previously approved for use in the JMTR (License No. XSNM-942, issued June 27, 1977) was judged sufficient for an additional six-month period.
2. The Japanese have been informed of US policy requiring use of fuel at the lowest possible enrichment for all research reactors. However, the Japanese have not been explicitly advised as to when these reductions in enrichment levels (if technically and economically feasible) are to be made, since such reductions are dependent on the commercial availability of suitable fuels and availability dates cannot yet be predicted.

Discussion:  
(continued)

3. Recently, the Japanese have indicated a need to receive the HEU covered by this application without delay in order to permit continuing operation of the JMTR.
4. Although the Executive Branch believes that the JMTR has a high potential for future conversion to fuel containing a lower enrichment level, this cannot be accomplished immediately since the necessary advanced fuel fabrication technologies are not yet commercially available. In response to the staff's inquiries on this point, State Department officials indicated that they expect that full testing and demonstration of plate-type fuel elements for this type of reactor will probably proceed more slowly than for high-density TRIGA elements.

For these reasons, the Executive Branch recommends issuance of the proposed license at this time.

Staff Observations

The staff has also examined closely whether it would be possible to operate this reactor on uranium of lower enrichment. While preliminary review of the technical characteristics of the JMTR and the research and testing program being conducted indicates that the use of high-density, lower-enriched fuel may well be feasible eventually, it is unlikely such fuel will be available in the near future.

Application XSNM-937 does not differ in its merits from previous exports of high-enriched uranium to Japan approved by the Commission and the staff has concluded that the proposed export meets all statutory requirements for issuance.

Physical Security

The Executive Branch has concluded that the US has assurance that Japan is committed to providing adequate physical security for its nuclear program, including a level of protection compatible with that envisioned by the recommendations in IAEA INFCIRC/225.

Discussion:  
(continued)

Based upon visits of physical security review teams, and subsequent exchanges and reviews, the staff has concluded that the physical security programs in Japan and the FRG are adequate to protect the material covered under the proposed license; however, the written assurance (required by 10 CFR 110.43(a)), relating to physical protection have not been obtained from the Governments of Japan and the FRG. (The Commission will recall that a proposed exemption from this requirement was discussed in SECY 78-291 and 78-386 for license applications received prior to May 19, 1978. As requested in Commissioner Bradford's memo of June 21, we will forward separately a detailed statement of how the physical security elements outlined in NRC's regulations are fulfilled in this case.)

The following documents are forwarded for Commission Review of the subject application: (1) staff review and conclusion that the proposed export meets statutory requirements (Appendix A); (2) Executive Branch views of June 27 and July 31, 1978 recommending issuance (Appendix B); (3) application of June 2, 1976 (Appendix C); and (4) copy of proposed license (Appendix D).

Recommendation:

That (1) the Commission approve the issuance of an exemption from that portion of 10 CFR 110.43(a) which requires written assurances with respect to physical security, and (2) the proposed license to be issued to Transnuclear, Incorporated.

Coordination:

OELD has no legal objection. NMSS wishes to inform the Commission that it has not received country-specific information which permits it to make an independent conclusion as to the effectiveness of IAEA material control and accounting safeguards to deter and detect diversion in Japan and the FRG. With respect to physical security, NMSS has reviewed the programs in Japan and the FRG and found them adequate for the purposes of the export.

  
James R. Shea, Director  
Office of International Programs

APPENDICES:

- A. Staff review and conclusion.
- B. Executive Branch views dtd June 27 and July 31, 1978.
- C. Application dtd June 2, 1976.
- D. Copy of proposed license.

NOTE: Commissioner comments should be provided directly to the Office of the Secretary, by c.o.b. Monday, September 18, 1978.

Commission staff office comments, if any, should be submitted to the Commissioners NLT September 14, 1978, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional time for analytical review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

DISTRIBUTION:

Commissioners  
Commission Staff Offices  
Executive Director for Operations  
Secretariat

APPENDIX A



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

Memorandum to the File

STAFF CONCLUSIONS REGARDING PROPOSED LICENSE TO EXPORT HIGH-ENRICHED  
URANIUM TO JAPAN (APPLICATION XSNM-937)

In June 1976, Transnuclear Incorporated applied for a license to export 35.423 kilograms of uranium, enriched to 93.3%, containing a maximum of 33.050 kilograms of U-235, to Japan.

The material, in the form of UF<sub>6</sub>, will be shipped to NUKEM in the FRG for conversion and then to Nuclear Fuel Industries Limited for fabrication of fuel assemblies for use in the Japan Material Testing Reactor (JMTR) (a 50 Mwt research reactor which achieved criticality in 1968). The JMTR is Japan's principal reactor for testing materials in a high neutron flux. It is used for engineering tests on fuel elements and components of nuclear plants.

In response to our June 11, 1976 request for views, the Executive Branch has (1) concluded that issuance of the proposed license would not be inimical to the interests of the United States, including the common defense and security, and (2) confirmed that the material will be subject to all the terms and conditions of the Agreement for Cooperation between the United States and Japan and, during the time it is in the FRG, the US-EURATOM Additional Agreement for Cooperation.

These views and license application analysis by the Executive Branch were forwarded by the State Department memoranda of June 27 and July 31, 1978. Confirmation of the applicability of the US-Japan Agreement was set forth in the letter of August 24, 1976 from the Embassy of Japan, and with respect to the FRG, the letter of June 9, 1976 from the Delegation of the Commission of the European Communities.

The staff has reviewed the subject application in light of the considerations below.

- o Safeguards. The export will be subject to IAEA and EURATOM safeguards. As parties to the Nonproliferation Treaty (NPT), Japan and the FRG have undertaken an obligation to accept IAEA safeguards on all source or special fissionable material in all peaceful nuclear activities within their territories, under their jurisdiction, or carried out under their control anywhere. While in the FRG, EURATOM safeguards which may be regarded as equivalent to IAEA safeguards, will be applied to the proposed export. Accordingly, in the staff view, criterion (1) of the NPPA is met.

- o No Nuclear Explosive Use. Also, as parties to the NPT, Japan and the FRG have undertaken the obligations not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices. Therefore, the staff believes that criterion (2) of the NNPA is met.
  
- o Physical Security. Based on visits of physical security review teams, and subsequent exchanges and reviews, the physical security programs in Japan and the FRG are considered adequate to protect trigger quantities of special nuclear material. Moreover, as noted in the State Department memorandum of June 27 the US has assurances that Japan and the FRG are committed to providing a level of protection for their programs fully compatible with that envisioned by the recommendations in IAEA INFCIRC/225, "The Physical Protection of Nuclear Materials." In view of the above, the staff believes that criterion (3) of the NNPA is met. Although the written physical security assurance required by 10 CFR 110.43(b) has not been obtained, an exemption from this requirement will be issued pursuant to authority under 10 CFR 110.10(a).
  
- o Retransfer. The US-Japan Agreement contains a provision prohibiting the reexport of US-supplied special nuclear material, unless the US agrees to such transfer, and then only if it is within the scope of a bilateral agreement for cooperation between the US and the nation to which it is being transferred or within an appropriate multilateral agreement. The agreement also provides for US determinations regarding any proposed transfer to other nations or international organizations of special nuclear material which has been produced and separated from US-supplied material. With respect to Japan, it is the staff view that criterion (4) is met.

Criterion (4) of the NNPA requires, among other things, that prior approval of the United States be obtained for the retransfer of US-supplied material, facilities, or sensitive technology, and special nuclear material produced through the use of such material. However, under the exemption authority of Sections 126(a)(2) and (b)(1) of the NNPA, EURATOM is exempted from this criterion until March 10, 1980.

- o Reprocessing. The US-Japan Agreement stipulates that any reprocessing of US-supplied material shall be performed in facilities acceptable to both parties upon a joint determination that safeguards may be effectively applied.

Under the US-EURATOM Agreement, US supplied material may be reprocessed within the Community. Such reprocessing would be subject to safeguards, as would the recovered special nuclear material.

It is noted that by note dated July 7, 1978 EURATOM agreed to negotiations as called for in Section 404(a) of the NNPA, leading to renegotiation of the US-EURATOM Agreement for Cooperation. State Department advised the Commission of the receipt of this note on July 20, 1978. With respect to EURATOM the provisions of criterion (5) would not apply until March 10, 1980.

- o Sensitive Technology. The proposed export does not involve sensitive technology.

As more fully developed in its memorandum dated June 27, 1978, the Executive Branch has determined that Japan currently meets all the criteria of P.L. 95-242, including the requirements of Section 126(a)(1) and the specific criteria of Sections 127 and 128 and that Japan has adhered to all the provisions of its Agreement for Cooperation with the US.

The Executive Branch has also concluded that fueling the JMTR is compatible with US nonproliferation objectives at this time since the necessary advanced fuel fabrication technologies are not yet commercially available.

The staff has concluded that issuance of the proposed license would be consistent with the recently enacted Nuclear Nonproliferation Act. In addition, the State Department has noted that the proposed export was approved by the President and is consistent with policy measures governing high-enriched uranium exports as set out in the White House Fact Sheet of April 27, 1977.

In view of all the considerations above, and as required by Section 57 of the Atomic Energy Act and 10 CFR 110.44, the staff has also concluded that the export to be made pursuant to the proposed license (1) would be subject to the US-Japan Agreement for Cooperation and the Additional Agreement for Cooperation between the US and EURATOM, and (2) would not be inimical to the common defense and security of the United States or constitute an unreasonable risk to the public health and safety.

*R. Neal Moore*  
R. Neal Moore

Senior Licensing Reviewer

APPENDIX B

DEPARTMENT OF STATE

OFFICE OF THE SECRETARY

BUREAU OF OCEANS AND INTERNATIONAL,  
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

XSNM00957  
70-2224  
PB 121

July 31, 1978

SECRET  
EXCLUDED FROM AUTOMATIC SPREADS

MEMORANDUM FOR JAMES R. SHEA  
NUCLEAR REGULATORY COMMISSION

As you know, on July 20, 1978, the Acting Secretary of State notified the Commission that European Atomic Energy Community (EURATOM) has agreed to negotiations with the United States as called for in Section 404(a) of the Nuclear Non-Proliferation Act of 1978. EURATOM is consequently expressly exempted by statute from criterion (4) and (3) in Section 127 of the Atomic Energy Act, as amended, by virtue of Section 126(a)(2) of that Act until March 10, 1980. (As indicated in the relevant individual analyses, it is the view of the Executive Branch that EURATOM in fact satisfies criterion (4).) This exemption in no way limits any rights which the United States may have under the United States-EURATOM Additional Agreement for Cooperation.

In view of the above, the Executive Branch recommends expeditious issuance of the EURATOM export licenses now pending action by the Commission, including cases in which a EURATOM member is the intermediate consignee as well as ultimate consignee cases.

Attached is a list of EURATOM cases which according to our records are pending a final decision by the Commission.

*Louis V. Nosenzo*

Louis V. Nosenzo  
Deputy Assistant Secretary

Attachment  
As stated

800  
850  
LH

8-3-78 up to  
PDR & ALC

### Major Ultimate Consignee Cases

|           |                           |
|-----------|---------------------------|
| XSNM-1020 | France (HEU)              |
| XSNM-1104 | FRG and Netherlands (HEU) |
| XSNM-1129 | Netherlands (HEU)         |
| XSNM-1149 | Netherlands (HEU)         |
| XSNM-1210 | FRG (HEU)                 |
| XSNM-1242 | FRG (LEU)                 |
| XSNM-1258 | FRG (LEU)                 |
| XSNM-1260 | Belgium (LEU)             |
| XSNM-1277 | FRG (LEU)                 |
| XSNM-1281 | FRG (LEU)                 |
| XU-8408   | France (Depleted U)       |

### Major Intermediate Consignee Cases

|           |  |
|-----------|--|
| XSNM-937  | Japan via FRG (HEU)                                |
| XSNM-1234 | FRG then return to U.S. (LEU)                      |
| XSNM-1243 | U.K. then return to U.S. (Contaminated<br>U Oxide) |
| XSNM-1233 | Austria via FRG (LEU)                              |

### Minor Cases

|           |                     |
|-----------|---------------------|
| XSNM-1250 | Italy (Standards)   |
| XSNM-1251 | Belgium (Standards) |
| XSNM-1237 | FRG (HEU)           |
| XSNM-1134 | FRG (HEU)           |
| XSNM-1270 | FRG (LEU)           |



DEPARTMENT OF STATE

Washington, D.C. 20520

RECEIVED  
U.S. NSC

7-10-78  
7-11-78

BUREAU OF OCEANS AND INTERNATIONAL  
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS

1713 JUN 28 PM 12 11

June 27, 1978

EX-100-100000  
100-100000

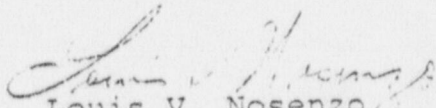
MEMORANDUM FOR JAMES R. SHEA  
NUCLEAR REGULATORY COMMISSION

Enclosed is an Executive Branch analysis covering a license application for the export of highly-enriched uranium to Japan. In accordance with P.L. 95-242, 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 and P.L. 95-242 have been met and that the proposed exports would not be inimical to the common defense and security of the United States. Moreover, Japan has adhered to the provisions of the Agreement for Cooperation with the United States.

It should be noted that the view of the limited Community (FRG) role in this export as an intermediate consignee for the exclusive purpose of fuel fabrication, the Executive Branch believes that we have obtained the functional equivalent of criterion (5) and, therefore, that all of the criteria of P.L. 95-242 currently are met.

The Executive Branch therefore recommends issuance of the proposed license.

  
Louis V. Nosenzo  
Deputy Assistant Secretary

Enclosure:  
As stated

copies to:

cc to  
FDR and  
ACC 6/29/78

J. Shea, M. Peterson, K. Cohen, J. Dunn,  
N. Moore, C. Johnson (SG)

EXPORT LICENSE APPLICATION ANALYSIS

RECEIVED  
U.S. NAC

XSNM-937

1973 JUN 23 PM 11 11

Country: Japan  
Transaction: Export of 33.050 kilograms of U-235 contained in 35.423 kilograms of uranium in the form of uranium hexafluoride enriched to a maximum of 93.3%.  
Applicant: Transnuclear, Inc.  
Applicant's Reference: EU/144 76-174/01  
Date of Application: June 2, 1976.

1. Purpose of Export

This quantity of highly enriched uranium will be shipped to NUKEM GmbH, the Federal Republic of Germany, for conversion from uranium hexafluoride to uranium dioxide. It will then be shipped to Nuclear Fuel Industries Limited in Tokyo, Japan, for fabrication into fuel elements for the Japan Material Testing Reactor in the Oarai Research Establishment of the Japanese Atomic Energy Research Institute located in Tokyo.

The 50 Megawatt thermal Japan Materials Test Reactor (JMTR) is Japan's principal reactor for testing materials in a high neutron flux. It is used for engineering tests on fuel elements and components of nuclear plants. As in the case of other material testing reactors, highly enriched uranium is required to maintain excess reactivity, which determines the length of the reactor refueling cycle, and to achieve the necessary neutron flux density to meet the objectives of experimental programs being conducted in the reactor. The U.S. has provided the highly enriched uranium fuel for this facility since its initial operation in 1968.

The reactor has a core loading of 7 kilograms of U-235 at an enrichment of 93.15%. Its reload requirements are approximately for six cycles per year for an annual requirement of 42 kilograms of U-235.

DELEGATION OF THE COMMISSION OF THE EUROPEAN COMMUNITIES

June 9, 1976

JM/kg

Mr. Vance H. Hudgins  
Assistant Director for Politico-  
Military Security Affairs  
Division of International Security Affairs  
Energy Research and Development Administration  
Washington, D.C. 20545

Attn.: Mr. Marvin Peterson

Subject: Transnuclear, Inc. application for export  
license #EU/144-76-174/01 for Japan, dated  
June 2, 1976

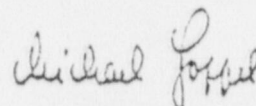
Dear Mr. Hudgins:

This is with reference to Transnuclear, Inc.'s  
above-mentioned application.

We certify that the material mentioned in this  
application, namely 33.050 kg of U-235 contained in  
35.423 kg of uranium and the transfer of this material  
will be subject to all terms and conditions of the  
Additional Agreement for Cooperation.

Further, we certify that Transnuklear GmbH, Wolfgang/  
Hanau, W. Germany, and NUKEM GmbH., Wolfgang/Hanau, as  
intermediate consignees, and Oarai Research Establishment,  
for Japan Atomic Energy Institute, Tokyo, Japan, as final  
consignee, are authorized by EURATOM to receive and possess  
this material pursuant to the aforementioned Agreement for  
Cooperation.

Sincerely yours,



for F. SPAAK  
Head of Delegation

August 24, 1976

Colonel Vance H. Hudgins  
Assistant Director for  
Politico-Military Security Affairs  
Division of International Security Affairs  
Energy Research and Development Administration  
Washington, D.C. 20545

Dear Colonel Hudgins:

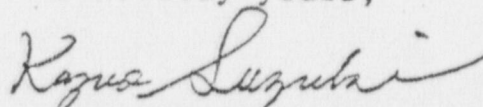
Concerning import of the material equipment or device r ted below, this will confirm that the Government of Japan has appointed Japan Atomic Energy Research Institute as an authorized person under the terms and conditions pursuant to Article VI of the Agreement for Cooperation between the Government of the United States of America and Government of Japan concerning Civil Uses of Atomic Energy which entered into force on July 10, 1968, amended by the Protocol on December 21, 1973.

Fuel for the Japan Material Testing Reactor in the Oarai Research Establishment: U-235 ( 33.05 KGS )

Further, it is confirmed that any source or special nuclear material produced, processed or used in the facility for which the material, equipment or device is supplied will be subject to all of the terms and conditions of the Agreement for Cooperation between our Governments, and that the appointee(s) named above have been authorized to receive and possess the material, equipment or device by both Governments.

Also, the Government of Japan confirms that the safeguards and guarantees of the Agreement for Cooperation will always apply to any source or special nuclear material produced, processed or used in the facility for which the material, equipment or device is supplied, except as the parties may otherwise agree.

Sincerely yours,



Kazuo Suzuki  
First Secretary  
(Scientific)

Ref: This is in reference to the case number of S-369 stated in your letter dated July 17, 1976.

## EXPORT LICENSE APPLICATION ANALYSIS

### 1. Applicable Agreement for Cooperation

The proposed export is 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 Japan concerning Civil Uses of Atomic Energy, which entered into force on July 10, 1968. This has been confirmed by a letter from the Embassy of Japan, a copy of which is enclosed.

Japan has adhered to the provisions of its Agreement for Cooperation with the United States.

The intermediate transfer of uranium to the Federal Republic of Germany for conversion from uranium hexafluoride to uranium dioxide is subject to all of the terms and conditions of the Additional Agreement for Cooperation between the United States and the European Atomic Energy Community (EURATOM), as amended. This was confirmed in a letter from the Delegation of the Commission of the European Communities dated June 9, 1976, a copy of which is enclosed.

The European Atomic Energy Community has adhered to all provisions of this 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."

Japan is a Party to the Treaty on the Non-Proliferation of Nuclear Weapons and deposited its instrument of ratification on June 8, 1976. This Japan/IAEA Safeguards Agreement pursuant to the NPT entered into force on December 2, 1977. Therefore, it is the Executive Branch view that criterion (1) is met with respect to Japan.

Safeguards in the FRG are applied under Article V of the additional Agreement for Cooperation of 1960, as amended which incorporates Articles XI, XII and Annex B of the November 8, 1958 Joint Program Agreement, as amended. The Community undertakes the responsibility of establishing and implementing a safeguards and control system designed to give maximum assurance that any material supplied by the U.S. or generated from such supply will be used solely for peaceful purposes ("EURATOM Safeguards System"). The Community is bound to consult and exchange experiences with the IAEA with the objective of establishing a system reasonably compatible with that of the latter. The Community is responsible for establishing and maintaining a mutually (with respect to the U.S.) satisfactory and effective safeguards and controls system in accordance with stated principles.

EURATOM safeguards are being applied to material and facilities previously exported and subject to the U.S.-EURATOM Cooperation Agreements and to special nuclear material used in or produced through the use thereof. These agreements require

these safeguards to be applied to such material and facilities and to the proposed export and special nuclear material produced through its use. Therefore, it is the Executive Branch view that the equivalent of criterion (1) is met with respect to the Federal Republic of Germany.

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 non-nuclear-weapons state (NNWS) parties to the Nuclear Non-Proliferation Treaty (NPT), both Japan and the FRG have pledged not to develop nuclear explosive devices for any purpose. These pledges apply to any material, facilities and sensitive nuclear technology previously exported to either Japan or the FRG by the U.S. and subject to the U.S.-Japan and U.S.-EURATOM Agreements for Cooperation and to special nuclear material used in or produced through the use thereof. Since these pledges will apply to the proposed export and to any special nuclear material produced through its use, it is the view of the Executive Branch that criterion (2) is met with respect to Japan and the FRG.

### 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."

Japan and the FRG have established physical security measures which, as a minimum, meet those recommended in the IAEA's INFCIRC/225/Rev.1, "The Physical Protection of Nuclear Material" as it may be updated.

In addition, Japan and the FRG also are members of the Nuclear Suppliers Group and, as such, have agreed to levels of protection consistent with INFCIRC/225/Rev. 1, to be ensured with respect to nuclear materials and equipment and facilities containing these materials, which are detailed in transmission of the Nuclear Suppliers Guidelines to the IAEA.

During February 1976 in Japan and May 1975 in the Federal Republic of Germany teams of U.S. Government experts visited for an exchange of views on physical security, including visits to those facilities or facilities comparable to those at which this highly enriched uranium will be processed, stored and utilized. The fixed site reviews included: (1) security forces, (2) physical barriers, (3) detection and alarm apparatus, (4) communication and response capabilities, (5) access and exit controls, (6) accountability and reporting procedures, and (7) physical security organization. In the area of transportation, procedures and equipment for protecting nuclear materials while in transit were viewed and evaluated.

The teams judged that Japan's and the Federal Republic of Germany's physical protection systems, equipment and procedures for the fixed site facilities, and the procedures and equipment for transportation security adequate to physically protect the material requested in this license application.

Therefore, it is the view of the Executive Branch that criterion (3) is met with respect to both Japan and the FRG.

#### 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 group 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 X(A) (3) of the 1968 U.S.-Japan Agreement for Cooperation stipulates that: "No material, including equipment and devices, transferred to the Government of Japan or to authorized persons under its jurisdiction pursuant to this Agreement for the superseded Agreement will be transferred to unauthorized persons or beyond the jurisdiction of the Government of Japan, except as the United States Commission may agree to such a transfer to another nation or international organization, and then only if, in the opinion of the United States Commission, the transfer of the material is within the scope of an Agreement for Cooperation between the Government of the United States... and the other nation or international organization."

Article X B. provides inter alia, that: "B. the Government of the United States of America, notwithstanding any other provisions of this Agreement shall have the following safeguards rights:...

"(2) With respect to any source or special nuclear material made available to the Government of Japan or any person under its jurisdiction under this Agreement or the superseded Agreement and any source or special nuclear material utilized in, recovered from, or produced, as a result of the use of any of the following materials, equipment, or devices so made available:

"(a) source material, special nuclear material, moderator material, or other material designated by the United States Commission,"...

"(ii) to require that any such material in the custody of the Government of Japan or any person under its jurisdiction be subject to all of the safeguards provided for in this Article and the guaranties set forth in Article X;"

These articles give the U.S. an unqualified approval right over the retransfer of material from Japan supplied by the U.S. or produced through the use of such material and allow retransfers only if it is determined to be within the scope of an agreement for cooperation with the recipient country. This right would apply to irradiated fuel because it contains U.S.-supplied material and material produced through the use of U.S. material.

Therefore, it is the Executive Branch view that, as the U.S. has the right of prior approval over retransfer of U.S.-supplied material and material produced through the use of U.S. material, criterion (4) is met with respect to Japan.

In regard to the FRG, Article XI(2) of the November 9, 1958 Joint Program Agreement, as amended, which is incorporated in the Additional Agreement for Cooperation, as amended, by Article V of the latter Agreement, provides that no material (including equipment and devices) may be transferred beyond the control of the EURATOM Community, unless the United States agrees.

Article 1 bis D of the Additional Agreement for Cooperation, as amended, provides that special nuclear material produced through the use of U.S.-supplied material may be exported to any nation outside the Community or to a group of nations, provided that such nation or group of nations has an appropriate Agreement for Cooperation with the United States and guarantees the peaceful use of the produced material under safeguards acceptable to the Community and the United States. The European Community's interpretation of this language--as set out in an April 15 letter to the Department of State from Fernand Spaak, Head of the Delegation of the Commission of the European Communities--is that the European Community Supply Agency prior to any proposed transfer will consult with the United States to find out whether, in the view of the U.S. the proposed recipient of such produced special nuclear material has an Agreement for Cooperation with the United States which is "appropriate". A letter of February 11, 1977 1/ from Fernand Spaak to the Department of Energy (then

1/ A copy of this letter was provided by the Delegation of the Commission of the European Communities to the Nuclear Regulatory Commission by transmittal letter dated February 14, 1977.

ERDA) makes clear that this provides the U.S. a consent right, since the U.S. has the exclusive ability to decide whether an agreement is "appropriate". This letter states that:

"It is our understanding that any transfer of recovered materials from the Community to a third country is subject, in accordance with the terms of the EURATOM-US Agreement for Cooperation, to prior US authorization."

Therefore, it is the Executive Branch view that, with regard to the proposed export and special nuclear material produced through its use, criterion (4) is met with respect to the FRG.

With respect to possible transfers within the Community, such transfers could not be made without the explicit approval of the U.S., since a transfer of this nature would constitute a use of the material materially inconsistent with the terms of the export license.

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 VIII C. of the U.S.-Japan Agreement for Cooperation provides that: "When any special nuclear material received from the United States of America requires reprocessing, or any irradiated fuel elements containing fuel material received from the United States of America are to be removed from a reactor and are to be altered in form or content, such reprocessing or alteration may be performed in Japanese facilities upon a joint determination of the Parties that the provisions of Article XI may be effectively applied, or in such other facilities as may be mutually agreed."

As no joint determination under Article VIII C. can be made without the agreement of the United States, and since the facilities to be used must be acceptable to the U.S. as one of the Parties, it is the Executive Branch view that criterion (5) is met with respect to Japan.

In accordance with the end use statement, this material is being delivered to the intermediate consignee exclusively for the conversion of uranium hexafluoride into uranium dioxide and re-export to Japan. Thus, there will be no irradiated fuel generated in the European Community (FRG) and no possibility of reprocessing while in the Community. This is, in the judgment of the Executive Branch, the functional equivalent of a U.S. right over reprocessing or alteration.

Therefore, it is the view of the Executive Branch that the equivalent of criterion (5) is met with respect to the Federal Republic of Germany.

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 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."

It should be noted that this criterion only applies to licenses under which the first export will take place after March 10, 1980 or pursuant to an application submitted after September 10, 1979. We anticipate that this recommended export will occur before March 10, 1980. In any case as Parties to the NPT, Japan and the FRG have accepted IAEA safeguards on all their nuclear activities, thereby satisfying this criterion.

### 3. Additional Factors

- A. Safeguards Implementation -- Significant information the Executive Branch possesses bearing on the effectiveness of implementation of IAEA safeguards in the recipient country, including any such information on steps being taken to correct any identified deficiencies in the application of IAEA safeguards in that country:

The IAEA Secretariat has concluded in its Special Safeguards Implementation Report that with regard to nuclear material subject to IAEA safeguards, while some deficiencies exist in the system, "in none of the 41 states in which inspections were carried out was there any diversion of a significant quantity of nuclear material". Although recognizing the need to correct existing deficiencies in safeguards implementation, the Executive Branch has no reason to believe that the IAEA Secretariat's conclusion is not a valid one. In the light of this and other factors associated with the proposed export, the Executive Branch believes the framework of commitments, assurances and safeguards is adequate for the purposes of these exports.

The Japanese-IAEA NPT Safeguards agreement has recently been ratified by the Diet and is just entering force. A complete set of facility attachments for its implementation is now in preparation, which are expected to result in substantially different safeguards measures being applied at some Japanese facilities than those under the prior INFCIRC/66-type provisions. Relatedly, the Diet also has approved a new national system of nuclear material accountancy and control so that the interaction between the IAEA and Japan's national system in this area probably will be substantially altered. Because of Japan's extensive nuclear program, the complexity of applying IAEA safeguards is considerably greater than for most other countries.

#### B. Presidential Consideration

The President approved an affirmative Executive Branch judgment with respect to this proposed export. This export meets the criteria for continued supply of highly-enriched uranium under existing commitments as recently approved by the President and set out in the White House Fact Sheet of April 27, 1977 on the Nuclear Non-Proliferation Policy Act of 1977.

C. Special Non-Proliferation and Other Foreign Policy Considerations

We have informed the Japanese of the U.S. policy of requiring use of fuel of the lowest possible enrichment for all research reactors. However, we have not advised them explicitly as to when we would expect reductions in enrichment levels to be made (for those reactors where reduction is technically or economically feasible), since such reductions are dependent on the commercial availability of suitable fuels. The likely dates of such availability cannot yet be predicted.

Although this license application was received over a year ago, it was not included with the others submitted for Presidential review earlier this year because the quantity of HEU previously approved for use in the JMTR was judged sufficient for an additional six-month period. Recently, however, the Japanese provided us with additional information indicating that they need to receive the HEU covered by this request without delay in order to permit continuing operation of the JMTR.

Although the Japanese currently plan to have this HEU shipped to the FRG in the form of UF<sub>6</sub> for conversion to metal and then reshipped to Japan for fabrication into fuel, the Department of State is exploring whether the Japanese might be willing to accept delivery of HEU metal directly from the United States. Such a direct delivery, in addition to avoiding the delay that could be encountered in shipping U.S. nuclear material to the FRG pending agreement by Euratom to renegotiate the US/Euratom Agreement for Cooperation, would eliminate the physical security risks associated with retransferring HEU to and from any third country. Regardless of whether or not the delivery to Japan is direct or indirect, however, shipment will be effected in a manner which is acceptable to all concerned Executive Branch agencies, all of which agree that further delay will jeopardize the continued operation of the reactor.

On the basis of a preliminary review of the technical characteristics of the JMTR and the research and testing program being conducted, the Executive Branch believes that this reactor has a high potential for future conversion to fuel containing uranium of less than 93% enrichment, but that this cannot be accomplished immediately since the necessary advanced fuel fabrication technologies are not yet commercially available.

4. Inimicality Judgment

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

## APPENDIX C

APPLICATION FOR LICENSE TO EXPORT  
BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

Submit in Triplicate

Carefully Read Instructions on Back

|  |  |   |
|--|--|---|
| 1. DATE OF APPLICATION<br>June 2, 1976   | 2. APPLICANT'S REFERENCE NO.<br>(if any) EU/144-76-174/01  | 3. COUNTRY OF ULTIMATE DESTINATION<br>Japan   |
| 4. NAME OF APPLICANT<br>Transnuclear, Inc.<br>STREET ADDRESS<br>5205 Leesburg Pike,<br>CITY, STATE, AND ZIP CODE<br>Falls Church, VI 22041                               |  | 5. ULTIMATE CONSIGNEE IN FOREIGN COUNTRY<br>(Name and address)<br>Japan Atomic Energy Research Institute<br>1-1 Shinbashi Minato-ku<br>Tokyo 105  |
| 6. INTERMEDIATE CONSIGNEE IN FOREIGN COUNTRY (Give name and address. If same as ultimate consignee, state "Same.")<br>Nukem GMBH<br>645 Hanau Postfach 869<br>W. Germany |  | 7. IF PURCHASER IN FOREIGN COUNTRY IS OTHER THAN ULTIMATE CONSIGNEE, GIVE NAME AND ADDRESS (If same, state "Same.") Other Intermediate Consignee<br>Transnuklear GmbH<br>645 Hanau, Postfach 348<br>Wolfgang-bei-Hanau Industriegelände<br>Hessen, West Germany |
| 8. (a) QUANTITY TO BE SHIPPED<br>(See instructions on back.)<br>35.423 KgU<br>33.050 Kg U235   | (b) COMMODITY DESCRIPTION (Include chemical and physical form for special nuclear material and byproduct material also specify isotopic content if in a device, identify the device, manufacturer and model number.) Uranium in the form of uranium Hexafluoride enriched to a maximum 93.30 percent. This material will be packaged and supplied by Goodyear Atomic, Piketon, Ohio for shipment in July 1976. |   |

(c) SHIPPING AND PACKING PROCEDURES (Required for special nuclear material. See instructions on back.)

I.A.E.A. Certificate of Competent Authority 4909 in accordance with 10 CFR Part 71

9. END USE OF COMMODITIES COVERED BY THIS APPLICATION. (Describe fully, stating what will be produced or manufactured, what service will be rendered, or the nature of the research that will be performed.) (See instructions on back for special nuclear material.)  
Will be used as fuel for the Japan material testing Reactor in the Oarai Research Establishment. See attached End Use Statement.

10. The applicant, and any official executing this certificate on behalf of the applicant named in Item 4, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 70 and 71 (for source material, or Part 70 (if for special nuclear material), and Part 71 (for transport of radioactive material, if applicable), and that all information contained herein, including any supplements attached hereto, is true and correct to the best of their knowledge and belief.

This material is privately owned  
Please issue for period of one year

Transnuclear, Inc.

(Applicant named in Item 4)

Vicki Matson

Traffic Coordinator

(Title of certifying official and address, if different from that of the applicant)

APPENDIX D

# EXPORT LICENSE

FORM NRC-220

NRC LICENSE NO.

(7-75)

THIS LICENSE EXPIRES 1 October 1979

**United States of America**  
Nuclear Regulatory Commission

XSNM-987

Pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974 and the regulations of the Nuclear Regulatory Commission issued pursuant thereto, and in reliance on statements and representations heretofore made by

the licensee, a license is hereby issued to the licensee authorizing the export of the materials and/or production or utilization facilities listed below, subject to the terms and conditions herein.

**LICENSEE**

NAME **Transnuclear, Inc.**  
5205 Leesburg Pike  
ADDRESS **Falls Church, Virginia**  
Attention: Vicki Matson

**ULTIMATE CONSIGNEE IN FOREIGN COUNTRY**

NAME **Japan Atomic Energy Research**  
Institute  
ADDRESS **1-1 Shinbashi-Minato-ku**  
Tokyo 105, Japan

**INTERMEDIATE CONSIGNEE IN FOREIGN COUNTRY**

NAME **Nukem GmbH**  
645 Hanau Postfach 803  
West Germany

**OTHER PARTIES TO EXPORT**

**Transnuklear GmbH**  
645 Hanau, Postfach 349  
Wolfgang-Bei-Hanau  
Industriegelände  
Hessen, West Germany

APPLICANT'S REF. NO. **EU/144-76-174/01**

COUNTRY OF ULTIMATE DESTINATION **Japan**

| QUANTITY                        | DESCRIPTION OF MATERIALS OR FACILITIES  |
|---------------------------------|---|
| 33.050 kilograms of Uranium-235 | Contained in 35.423 kilograms of uranium as uranium hexafluoride enriched to 93.30 w/o maximum. |

Conditions 6, 8, and 9 on page two of this license apply to this export.

END

Neither this license nor any right under this license shall be assigned or otherwise transferred in violation of the provisions of the Atomic Energy Act of 1954, as amended and the Energy Reorganization Act of 1974.

This license is subject to the right of recapture or control by Section 108 of the Atomic Energy Act of 1954, as amended and to all of the other provisions of said Acts, now or hereafter in effect and to all valid rules and regulations of the Nuclear Regulatory Commission.

THIS LICENSE IS INVALID UNLESS SIGNED BELOW  
BY AUTHORIZED NRC REPRESENTATIVE

**Gerald G. Oplinger, Assistant Director**  
Export/Import and International  
Safeguards  
Office of International Programs

DATE OF ISSUANCE \_\_\_\_\_

EXPORT LICENSE

APPENDIX D

U.S. NUCLEAR REGULATORY COMMISSION  
EXPORT LICENSE

Conditions

License Number 17501-507

Condition 1 — Licensee shall file with the Customs Officer or the Postmaster two copies, in addition to those otherwise required, of the Shipper's Export Declaration covering each export and mark one of such copies for transmittal to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. The following declaration should accompany or be placed on the Shipper's Export Declarations for such exports:

"This shipment is being made pursuant to specific license number (specific license number) filed at (location of Customs office where license is filed), on (date license was filed). This license expires on (expiration date of license), and the unshipped balance remaining on this license is sufficient to cover the shipment described on this declaration."

Condition 2 — Exports authorized in any country or destination, except Country Groups Q, S, W, X, Y, and Z in Part 370, Supplement No. 1, of the Comprehensive Export Schedule of the U.S. Department of Commerce.

Condition 3 — This license covers only the nuclear content of the material.

Condition 4 — The material to be exported under this license shall be shipped in accordance with the physical protection requirements for special nuclear material in 10 CFR 73.

Condition 5 — Special nuclear material authorized for export under this license shall not be transported outside the United States in passenger-carrying aircraft in shipments exceeding (1) 20 grams or 20 curies, whichever is less, of plutonium or uranium 233, or (2) 350 grams of uranium 235.

Condition 6 — This license authorizes export only and does not authorize the receipt, physical possession, or use of the nuclear material.

Condition 7 — The licensee shall complete and submit an NRC Form 741 for each shipment of source material exported under this license.

Condition 8 — The licensee shall advise the NRC in the event there is any change in the designation of the company who will package the nuclear material to be exported under this license, or any change in the location of the packaging operation, at least three weeks prior to the scheduled date of export.

Condition 9- The material to be exported under this license shall be protected in transit, while within US jurisdiction, in accordance with the requirements of 10 CFR 73 and the licensee's approved Security Plan.