



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

DCS/DF02
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DEC 8 1989

Mr. Carlton E. Thorne, Director
Office of Nuclear Export Control
Bureau of Oceans and International
Environmental and Scientific Affairs
U. S. Department of State
Washington, D.C. 20520

Dear Mr. Thorne:

Enclosed is an application for an export license XSNM02492 received recently by the Nuclear Regulatory Commission for the export of high enriched uranium for use as fuel for the Orphee reactor in France.

Before taking action on this request, we would appreciate your views, in accordance with established procedures and from the overall perspective of the Executive Branch, as to whether the proposed export meets the applicable criteria in the Atomic Energy Act of 1954 as amended by the Nuclear Non-proliferation Act of 1978.

Sincerely,

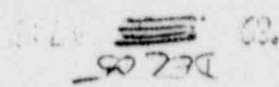
C. N. (Mike) Smith, Assistant Director
for International Security, Exports and
Materials Safety
International Programs
Office of Governmental and Public Affairs

Enclosure:
Appl. dtd 12/1/89
(XSNM02492 - France)

cc w/Enclosure:
T. Hart, DOE
R. DeLaBarre, DOS
N. Martin, DOE
M. Rosenthal, ACDA
G. Brubaker, DOD
G. Kuzmycz, DOC

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PDR EXPORT
XSNM-2492 FDC

APPLICATION FOR LICENSE TO EXPORT NUCLEAR
MATERIAL AND EQUIPMENT (See Instructions on Reverse)

1. APPLICANT'S USE		a. DATE OF APPLICATION December 1, 1989		b. APPLICANT'S REFERENCE NUK-503		2. NRC USE		a. DOCKET NO. 11004232		b. LICENSE NO. XSNM02499		
3. APPLICANT'S NAME AND ADDRESS						4. SUPPLIER'S NAME AND ADDRESS (Complete if applicant is not supplier of material)						
a. NAME Transnuclear, Inc.						RIS U.S.D.O.E.						
b. STREET ADDRESS Two Skyline Drive						a. NAME c/o Martin Marietta Energy Systems, Inc.						
c. CITY Hawthorne				STATE NY		ZIP CODE 10532		b. STREET ADDRESS				
d. TELEPHONE NUMBER (Area Code - Number - Extension) 914-347-2345 Ext. 3056						c. CITY Oak Ridge		STATE TN		ZIP CODE 37830		
5. FIRST SHIPMENT SCHEDULED		6. FINAL SHIPMENT SCHEDULED		7. APPLICANT'S CONTRACTUAL DELIVERY DATE		8. PROPOSED LICENSE EXPIRATION DATE		9. U.S. DEPARTMENT OF ENERGY CONTRACT NO. (If Known)				
ASAP		N/A		Same as item 5		Three years from date of issuance		To be determined				
10. ULTIMATE CONSIGNEE						11. ULTIMATE END USE (Include plant or facility name)						
a. NAME C.E.A. - Centre d'Etudes Nucleaires						To be used as fuel in the Orphee reactor at Commissariat a l'Energie Atomique, Paris, France (see attached end use statement and reactor checklist)						
b. STREET ADDRESS Services des Piles de Saclay						11a. EST. DATE OF FIRST USE						
c. CITY - STATE - COUNTRY Saclay, France						13. INTERMEDIATE END USE						
12. INTERMEDIATE CONSIGNEE						13a. EST. DATE OF FIRST USE						
a. NAME CERCA						15. INTERMEDIATE END USE						
b. STREET ADDRESS Romans, France						For conversion and fabrication of fuel elements						
c. CITY - STATE - COUNTRY						15a. EST. DATE OF FIRST USE						
14. INTERMEDIATE CONSIGNEE						15. INTERMEDIATE END USE						
a. NAME Transnucleaire, S.A.						For transport purposes only						
b. STREET ADDRESS 11 bis rue Christophe Colomb						15a. EST. DATE OF FIRST USE						
c. CITY - STATE - COUNTRY 75008 Paris, France						15a. EST. DATE OF FIRST USE						
16. NRC USE		17. DESCRIPTION (Include chemical and physical form of nuclear material, give dollar value of nuclear equipment and components)				18. MAX. ELEMENT WEIGHT		19. MAX. WT. %		20. MAX ISOTOPE WT.		21. UNIT
		Uranium, in the form of metal, enriched to 93.45 w/o maximum Uranium-235				(U) 47.356		93.45		(U-235) 44.254		Kgs
22. COUNTRY OF ORIGIN - SOURCE MATERIAL			23. COUNTRY OF ORIGIN - SNM WHERE ENRICHED OR PRODUCED			24. COUNTRIES WHICH ATTACH SAFEGUARDS (If Known)						
U.S.A.			U.S.A.			EURATOM						
25. ADDITIONAL INFORMATION (Use separate sheet if necessary)												
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26. The applicant certifies that this application is prepared in conformity with Title 10, Code of Federal Regulations, and that all information in this application is correct to the best of his/her knowledge.												
27. AUTHORIZED OFFICIAL			a. SIGNATURE Patricia B. Quinn				b. TITLE Traffic Coordinator					

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COMMISSARIAT A L'ENERGIE ATOMIQUE

INSTITUT DE RECHERCHE TECHNOLOGIQUE ET DE DEVELOPPEMENT INDUSTRIEL (IRDI)
DIVISION D'EXPLOITATION DES REACTEURS PROTOTYPES ET EXPERIMENTAUX

IRDI/DEPE/SPS/DIR/89-472

Saclay, November 29, 1989

SERVICE DES PILES DE SACLAY

XSNM02492
11004332

To whom it may concern

END USE STATEMENT

The undersigned certify(-ies) that the following maximum quantities, i.e.

- 47.12 kg of uranium
- 93.30 w/o U-235 enriched
- 43.97 kg of U-235 content
- in the form of U-metal

furnished under the EURATOM/HKG-US/DOE Uranium Enrichment Services Contract will be used as fuel in the Orphée Reactor at Commissariat à l'Energie Atomique, Paris, France.

CERCA, Romans, France shall perform the manufacturing of the fuel elements.

We authorize Transnuclear, Inc., Hawthorne, N.Y., USA, to apply for the relevant U.S. export licenses.

Date : 29/11/1989

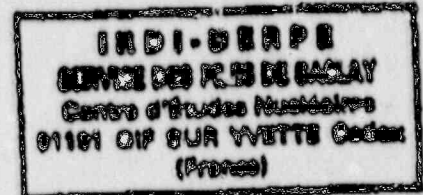
Signature :

BALLACQ Alain

(Head of Saclay Reactors Department)

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CHECKLIST FOR USE IN REVIEW OF REQUEST FOR HEU
TO DETERMINE TECHNICAL AND ECONOMIC JUSTIFICATION

XSNM02492
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1. Name of reactor and facility : ORPHEE - Experimental Research Reactor
2. Location : CERN - SACLAY (FRANCE)
3. Quantity of Uranium requested (kgU) : 47 kg
4. Enrichment in the isotope U-235 : 93,15 %
5. Quantity of uranium requested (kg U-235) : 43,76 kg
6. Type of fuel element and form of uranium : MTR Type-UAL
7. Current reactor power level (MW th) : 14 MWth
8. Duty factor, average burn-up : 90 %
- 9a. Current core loading (kg U-235) : 5,9
- 9b. Amount of fuel per element (kg U-235) : 0,84 or 0,630
- 9c. Number of elements in core : 8
- 9d. Average core life : 100 days
- 9e. Active core dimensions : 0,25 x 0,25 x 0,90 m
- 9f. Neutron flux : 3.10^{14} n.cm⁻².s⁻¹
10. Annual fuel usage (kg U-235) : 15
11. Annual spare fuel requirement, if any (kg U-235) : 0
12. Plans to increase, decrease reactor power level : no

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- 13. Estimated annual supply of current fuel request : 15 kg 235U
- 14. Required manufacture's working stock, if any, included in this request (kg U-235) : 0
- 15. Fabrication loss, if any, included in this request (kg U-235) : 0.45
- 16. and 17. Names of convertor and fabricator of fuel :
Convertor : - D O E
Fabricator : - C E R C A
- 18a. Quantity of scrap U-235, useable, non-useable (kg U-235)
Useable : included in working stock
Non useable : 0.45
- 18b. Quantity of fabricated unirradiated stored fuel available :

kg 235U : 26,502
- 18c. Quantity of unirradiated non-fabricated stored fuel (which will be available from fabrication planned or in process) :

kg 235U : 15,0
- 18d. Amount of spent fuel stored (kg U-235):

kg 235U : 41,175
- 19. Date a which current inventory, including a,b,c, will be expected :
16/10/89
- 20. Date current requested fuel will be needed at reactor : March 1992
- 21. Date current requested fuel will be needed by convertor/fabricator:
January 1991.
- 22a. Time taken for shipment from USA to convertor/fabricator : 8 months
- 22b. Lead time for ordering in USA : beginning of 1990. ~~1990~~ 68.
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23. Date at which current requested fuel will be expended i.o., when a further HEU supply will be needed at reactor : Next licence 1983
24. Date at which reactor could be converted to 45 % fuel ; to 20 % fuel, including time required for licensing procedure :
ORPHEE is a unique purpose reactor.
25. History and dated of previous HEU supplies by the U.S. :

Licence N°	Quantity (kg U-235)	Arrival date in Europe	Observations
) XSNM 987	26,6	13.06.78	U _T = 27,61 kg
XSNM 1543	19,8	27.03.82	U _T = 15 kg
XSNM 02204	30,36	11.88	U _T = 32,0 kg
XSNM 02360	30,36	10.89	U _T = 32,6 kg

26. Amount of fuel of U.S. origin previously consumed during operation of reactor :

kg U 235 : 94,19 kg

27. Status of cooperation between reactor and Argonne National Laboratory in reduced enrichment program (RERTR) :
CEA and CERCA go on with ANL RERTR program mainly with irradiation tests in OSIRIS reactor.
28. Status of agreement between reactor operator and ANL to reduce enrichment : SILOE and OSIRIS will be converted in 1992 and 1994 respectively.
29. Status of cooperation between reactor operator and IAEA reduced enrichment program :
CEA has no formal cooperation agreement with IAEA on this program.

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TRANSNUCLEAR, INC.

XSNM02492
11004232

December 1, 1989

United States Nuclear
Regulatory Commission
One White Flint North
Mail Stop 3-H-5
Washington, DC 20555

Attn: Mr. R. Neal Moore

Re: Export License Application
TNY Ref: NUK-503

Dear Neal:

Enclosed is an export license application, the end use statement and its reactor checklist for your handling of the following:

44.254 Kgs Uranium-235, contained in 47.356 Kgs Uranium, in the form of metal, enriched to 93.45 w/o maximum Uranium-235.

The above figures include tolerances.

Please call me if you have any questions.

Very truly yours,

Patricia B. Quain
Traffic Coordinator

PBQ
Enclosures

DEC 05 1989