NRC FORM 7
10 CFR 110

U.S. NUCLEAR REGULATORY COMMISSION (3-91)

APPLICATION FOR LICENSE TO EXPORT NUCLEAR MATERIAL AND EQUIPMENT

REVISED

(See Instructions on Reverse) Revised

APPROVED BY OMB: NO. 3150-0027
EXPIRES 3-31-94
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATIONCOLLECTION REQUEST: 1 HOUR. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555,AND TO THE PAPERWORK REDUCTION PROJECT (3150-0027), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

1. APPLICANT'S USE ——>	a. DATE OF APPLICATION	b. APPLICANT'S REFERENCE	2. NRC'S USE ——>	a. DOCKET NO.	b. LICENSE NO.
	2-11-2000	TNY: 544		11004440	XSNMO2611

3. APPLICANT'S NAME AND ADDRESS

a. NAME: Transnuclear, Inc.

b. STREET ADDRESS: 4 Skyline Drive

c. CITY: Hawthorne | STATE: NY | ZIP CODE: 10532

d. TELEPHONE NUMBER: 914-347-5064

4. SUPPLIER'S NAME AND ADDRESS
(Complete if applicant is not supplier of material)

a. NAME: DOE c/o Lockheed Martin Energy Systems, Inc.

b. STREET ADDRESS: Y-12 Plant,

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)
To be determined	N/A	same as item 5	5 years from date of issue	To be determined

10. ULTIMATE FOREIGN CONSIGNEE

a. NAME: EURATOM - Joint Research Center

b. STREET ADDRESS: Petten Establishment - P.O. Box 2

C. CITY: 1755 ZG Petten | D. Country: The Netherlands

11. ULTIMATE END USE
(Include plant or facility name)

To be used as fuel in the HFR/Petten reactor in Petten, The Netherlands (see attached end use statement, Reactor check list and HFR uranium supply history)

11a. DATE REQUIRED

12. INTERMEDIATE FOREIGN CONSIGNEE

a. NAME: CERCA

b. STREET ADDRESS (Facility Site)

c. CITY: Romans-sur-Isere | d. COUNTRY: France

13. INTERMEDIATE END USE

For conversion and fabrication of fuel elements

13a. DATE REQUIRED

14. INTERMEDIATE FOREIGN CONSIGNEE

a. NAME: Transnucleaire, S.A.

b. STREET ADDRESS (Facility Site): 9-11 Rue Christophe Colomb

c. CITY: 75008 Paris, France | d. COUNTRY: USA

15. INTERMEDIATE END USE

For transport purposes only.

15a. DATE REQUIRED

16. COM CODE	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 WEIGHT	21. UNIT
	Uranium in the form of metal, enriched to 93.45 w/o maximum 37.587 U | 35.125 U-235 Per year for four (4) years	150.348 (U)	93.45	140.500 (U-235)	Kg

22. COUNTRY OF ORIGIN.- SOURCE MATERIAL	23. COUNTRY OF ORIGIN.-SNM WHERE ENRICHED OR PRODUCED	24. COUNTRIES WHICH ATTACH SAFEGUARDS (If Known)
To be advised later *	USA	EURATOM

25. ADDITIONAL INFORMATION ON CONSIGNEES, END USES, AND PRODUCT DESCRIPTION (Use separate sheet if necessary)

(*) At this time it is unknown whether there will be any Australian or Canadian Origin material, however, Transnuclear, Inc will advise NRC if such is the case.

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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.

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27. AUTHORIZED OFFICIAL	a. SIGNATURE	b. TITLE
	Mathew George	Traffic Coordinator.

REVISED

EUROPEAN COMMISSION
DIRECTORATE GENERAL JRC
JOINT RESEARCH CENTRE
Institute for Advanced Materials
from The Director

Petten, 01.02.2000
AG/et/2000.02.01.01

TO WHOM IT MAY CONCERN

END USE STATEMENT

The undersigned certifies that the following maximum quantities, i.e.

149.60 kg of uranium *

93.30 w/o U-235 enriched

139.60 kg of U-235 content **

in the form of U-metal

to be furnished under the EURATOM/NUKEM/DOE Uranium Enrichment Services Contract will be used as fuel in the HFR Reactor at the Joint Research Centre, Petten, The Netherlands.

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

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

Date : 1 February 2000

Signature :

K. Törrönen
For the European Commission

* quantity for 4 years; 37.40 kg of uranium per year
** quantity for 4 years; 34.90 kg of U-235 content per year

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PO Box 2,NL-1755 ZG Petten, The Netherlands
Switchboard +31 224 565656 - Direct +31 224 565401 - Fax +31 224 563393
E-mail: torronen@jrc.nl

EUROPEAN COMMISSION

JOINT RESEARCH CENTRE

INSTITUTE FOR ADVANCED MATERIALS

HFR Unit

Petten, 01.02.2000
AG/et/2000.02.01.01

XSNM

CHECKLIST FOR USE IN REVIEW OF REQUESTS FOR HEU

TO DETERMINE TECHNICAL AND ECONOMIC JUSTIFICATION

1. Name of reactor and facility
   High flux materials testing reactor, HFR

2. Location
   EC, Joint Research Centre Petten (The Netherlands)

3. Quantity of uranium requested
   149.60 kg U_{tot} as metal

4. Enrichment in the isotope U-235
   93.3%

5. Quantity of uranium requested
   139.60 kg ^{235}U

6. Type of fuel element and form of uranium
   Plate-type MTR element, UAl_x

7. Current reactor power level
   45 MW

8. Duty factor, average burn-up
   78% annual availability
   50% average burn-up

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9a. Current core loading
Typically : 12.5 kg ^{235}U

9b. Amount of fuel per element
0.45 kg ^{235}U in a fresh standard fuel element
0.31 kg ^{235}U in a fresh control rod follower

9c. Number of elements in core
33 (plus 6 control rods)

9d. Average core life
25.0 days

9e. Active core dimensions
53 x 61 x 60 cm

9f. Neutron flux
Thermal 3×10^{14} $cm^{-2}s^{-1}$
Fast > 0.1 MeV 5×10^{14} $cm^{-2}s^{-1}$

10. Annual fuel usage
16 kg ^{235}U net

11. Annual spare fuel requirement, if any
Nil

12. Plans to increase, decrease reactor power level
None

13. Estimated annual supply of current fuel request
34.90 kg ^{235}U

14. Required manufacturer's working stock, if any, included in this request
5.65 kg ^{235}U per annum at CERCA plant, Romans-sure-Isère, France

15. Fabrication loss, if any, included in this request
0.42 kg ^{235}U per annum

16. Name of fuel fabricator : CERCA

17. Location
CERCA, Romans-sur-Isère, France

18. Inventory, as per 31 December 1999

18a. Quantity of non-useable scrap
7.55 kg ^{235}U (at CERCA)

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18b. Quantity of fabricated un-irradiated stored fuel available
33.50 kg ^{235}U (in HFR vault)

18c. Quantity of un-irradiated non-fabricated stored fuel
(which will be available for fabrication planned or in process)
8.36 kg ^{235}U (at CERCA)

18d. Amount of spent fuel stored
354.31 kg ^{235}U (in HFR pond)
23.85 kg ^{235}U (in 2 MTR-2 containers)

19. Date of which current inventory, including a, b, c, will be expended
May 2001

20. Date current requested fuel will be needed for reactor operation
May 2001, first annual supply

21. Date current requested fuel will be needed by fabricator
May 2000, first annual supply

22a. Time taken for shipment from USA to fabricator
1 to 2 months

22b. Lead time for ordering in USA
3 to 4 months (exclusive export license processing)

23. Date at which current requested fuel will be expended
i.e. when a further HEU supply will be needed at reactor
May 2002, second annual supply (as fuel elements, delivery of HEU to fabricator in May 2001, second annual supply)

24. History and dates of previous HEU supplies by the U.S.
See Annex I

25. Amount of fuel of U.S.-origin previously consumed during operation of the reactor
about 500 kg ^{235}U

26. Status of LEU test programme
UMo fuel tests under preparation

ANNEX I : HFR Uranium Supply history

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ANNEX I : HFR Uranium Supply history

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18/04/91

DATE	SOURCE	KG	ENRICH	CONTRACT	LICENCE	REMARKS
19/11/63	Union Carbide	25.999	89.810	EU/HL/1-18;AG/79	OR-0344	
14/08/64	Goodyear Atomic Corp.	1.830	89.974	EU/HL/3-15;AG/79	SED-0310	
14/08/64	Goodyear Atomic Corp.	27.024	89.974	EU/HL/3-19;AG/79	OR-0329	
20/01/65	Goodyear Atomic Corp.	24.685	89.840	EU/HL/3-23;AG/79	SED-0309	
06/06/66	Goodyear Atomic Corp.	16.800	89.850	EU/HL/3-53;AG/79-7	SED-0332	
13/07/66	Goodyear Atomic Corp.	0.300	89.850	EU/HL/3-53;AG/79-7	SED-0333	
23/09/66	Goodyear Atomic Corp.	14.653	89.900	EU/HL/3-58	SED-0442	
15/03/67	Goodyear Atomic Corp.	2.450	89.840	EU/HL/3-68	SED-0784	
13/05/68	Goodyear Atomic Corp.	14.492	89.960	EU/HL/3-98;AG/79-12	SED-0338	
27/09/68	Goodyear Atomic Corp.	4.500	89.870	EU/HL/3-10;AG/79-13	SED-0377	
19/03/69	Goodyear Atomic Corp.	23.922	89.850	EU/HL/3-12;AG/79-14	OR-0346	
22/12/69	Goodyear Atomic Corp.	3.000	90.050	EU/HL/3-14	SED-0343	
29/05/70	Goodyear Atomic Corp.	15.691	90.040	EU/HL/9-8;AG/79-16	SED-0344	
06/01/71	Goodyear Atomic Corp	5.993	90.060	EU/HL/9-18;AG/79-19	SED-0349	
19/03/71	Goodyear Atomic Corp.	10.976	89.940	EU/HL/9-21;AG/79-20	SED-0351	
20/09/71	Goodyear Atomic Corp.	29.993	89.830	EU/HL/9-28	SED-0352	
08/02/72	Goodyear Atomic Corp.	3.501	89.930	EU/HL/9-33	SED-0799	
31/10/74	Goodyear, Piketon	14.950	93.190	AT(49-14)UES/EU/105;AGT/105		
07/08/75	Goodyear Atomic Corp.	33.107	93.110	AT(49-14)UES/EU/139;AGT/139	XSNM-0680	
16/10/75	Goodyear Atomic Corp.	4.893	93.110	AT(49-14)UES/EU/139;AGT/139		
05/12/75	Goodyear Atomic Corp.	16.014	93.090	E-(49-14)UES/EU/142	XSNM-0756	
23/07/76	Goodyear, Piketon	38.000	93.230	E-(49-14)UES/EU/144		
10/03/77	Goodyear, Piketon	3.800	93.100	E-(49-14)UES/EU/144;AGT/144		
15/05/77	UNC Wood River Junction	17.500	93.070	AG/1153		
28/02/79	Goodyear Atomic Corp.	20.924	93.160	E-(40-1)4724-DUE;AG/1362	XSNM-1129	
28/02/79	Goodyear Atomic Corp.	22.556	93.160	E-(40-1)4724-DUE;AG/1362	XSNM-1149	
01/06/79	UNC Wood River Junction	18.003	92.900	AG/1282	XSNM-1212	
26/09/79	Goodyear Atomic Corp.	19.956	93.100	AT(40-1)4724-DUE;AG/1042	XSNM-1238	
23/10/80	Goodyear Atomic Corp.	19.994	93.100	4725-DUE;AG/1491	XSNM-1333	
23/10/80	United Nuclear Recovery	19.270	93.149	AG/1392/2	XSNM-1412	
10/12/81	Goodyear Atomic Corp.	15.761	93.140	AG/1597	XSNM-1632	
10/12/81	Goodyear Atomic Corp.	15.148	93.110	AG/1597	XSNM-1699	
10/12/81	Goodyear Atomic Corp.	24.951	93.130	AG/1597	XSNM-1495	
21/08/82	Goodyear Atomic Corp.	38.017	93.130		XSNM-1824	

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ANNEX I : HFR Uranium Supply history
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DATE	SOURCE	KG	ENRICH	CONTRACT	LICENCE	REMARKS
22/05/84	USA	18.000	93.140	AG/1693	XSNM-1975	Ex-GE material
18/01/85	Goodyear Atomic Corp.	19.957	93.100	AG/1709	XSNM-1975	
08/11/86	Goodyear Atomic Corp.	38.129	93.110	AG/2102	XSNM-2133	
06/10/88	Goodyear Atomic Corp.	37.861	93.167	AG/2102/1	XSNM-2353	
11/10/89	Goodyear Atomic Corp.	38.000	93.000	AG/2102/2	XSNM-2445	
23/10/90	Martin Marietta	38.000	93.150	AG/2385	XSNM-2491	

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