

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

RECEIVED  
11003010

1. APPLICANT'S USE		a. DATE OF APPLICATION March 26, 1980		b. APPLICANT'S REFERENCE N/A		2. NRC USE		a. DOCKET NO. 11003010		b. LICENSE NO. XSNM01670		
3. APPLICANT'S NAME AND ADDRESS						4. SUPPLIER'S NAME AND ADDRESS						
a. NAME U.S. Department of Energy						a. NAME OFFICE OF Y-12 INTERNATIONAL						
b. STREET ADDRESS 1000 Independence Ave., S.W.						b. STREET ADDRESS P.O. Box Y						
c. CITY Washington, D.C.						c. CITY Oak Ridge, TN						
STATE D.C.						STATE TN						
ZIP CODE 20585						ZIP CODE 37830						
d. TELEPHONE NUMBER (Area Code - Number - Extension) 202-252-6183 T. Hart						c. CITY Oak Ridge, TN						
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)				
May 15, 1980		May 15, 1981				May 15, 1981		31-109-38-5309				
10. ULTIMATE CONSIGNEE						11. ULTIMATE END USE						
a. NAME NUKEM GmbH						Fabrication of fuel elements for University of Michigan Ford Nuclear Reactor, Ann Arbor, Michigan, by NUKEM						
b. STREET ADDRESS Postfach 110080 D-6450						11a. EST. DATE OF FIRST USE						
c. CITY - STATE - COUNTRY Hanau 11, Federal Republic of Germany						13. INTERMEDIATE END USE						
12. INTERMEDIATE CONSIGNEE						13a. EST. DATE OF FIRST USE						
a. NAME To be determined for transport						15. INTERMEDIATE END USE						
b. STREET ADDRESS Only						15a. EST. DATE OF FIRST USE						
c. CITY - STATE - COUNTRY												
14. INTERMEDIATE CONSIGNEE												
a. NAME												
b. STREET ADDRESS												
c. CITY - STATE - COUNTRY												
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 metal 1980 APR 4 PM 4 39 EXPORT/IMPORT AND INTERNATIONAL SAFGRDS				27.1 kgs		19.79%		5.37 kgs		Kgs U
22. COUNTRY OF ORIGIN - SOURCE MATERIAL U.S.A				23. COUNTRY OF ORIGIN - SNM WHERE ENRICHED OR PRODUCED U.S.A				24. COUNTRIES WHICH ATTACH SAFEGUARDS (If Known) U.S.A				
25. ADDITIONAL INFORMATION (Use separate sheet if necessary) Memorandum dated January 25, 1980 - Snelgrove to Hangen												
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 A. Dangelhoff			b. TITLE Director OVA/IA			

January 25, 1980

To: Joel C. Haugen SPM  
 From: James L. Snelgrove JAP/RERTR  
 Subject: Shipment of 19.75%-Enriched Uranium Metal to France and Germany

A key element of the Reduced Enrichment Research and Test Reactor (RERTR) program, managed by the Laboratory, is the Low-Power Whole-Core Demonstration in the Ford Nuclear Reactor (FNR) at the University of Michigan, scheduled to begin in September, 1980. The Laboratory will procure the fuel elements needed for this demonstration, and will be responsible for supplying the uranium metal needed for their fabrication. The fuel elements will be procured from CERCA (France) and NUKEM (Germany), the only bidders responsive to the request for proposals issued by the Laboratory. Export licenses for the uranium metal and import licenses for the fabricated fuel elements must now be obtained. We assume that the uranium metal will be supplied under the terms of a no-cost lease agreement between the Department of Energy and the Euratom Supply Agency, as is being done for irradiation test elements which we are procuring. The uranium metal for this procurement is now being processed at Y-12 and will be ready for shipment by the middle of March, 1980.

The Laboratory intends to procure 20 standard fuel elements from CERCA and 25 standard and 10 control fuel elements from NUKEM. Each standard fuel element will contain 0.167 kg ( $\pm 2\%$ ) and each control fuel element will contain 0.084 kg ( $\pm 2\%$ ), of  $^{235}\text{U}$  in uranium enriched to  $19.75 \pm 0.2\%$ . The Laboratory would provide CERCA with 32.5 kg of 19.75%-enriched uranium metal to produce fuel elements containing 16.9 kg of uranium. The large (92%) surplus is required by CERCA because there is not enough time to recover and reuse uranium from scrap during production. CERCA does not have its own recovery facility and normally contracts with another company for this service, making scrap recovery a lengthy process. In normal practice the surplus required for one order of fuel elements would come from a stockpile of uranium recovered from scrap from previous orders. However, this is the first order of 19.75%-enriched elements for CERCA, so no such stockpile now exists. The Laboratory would provide NUKEM with 27.0 kg of 19.75%-enriched uranium metal to produce fuel elements containing 25.4 kg of uranium. NUKEM does have a stockpile of uranium from previous fabrications from which to provide the major part of the fabrication surplus. Each fabricator expects unrecoverable fabrication losses of  $\sim 2\%$ . In addition,  $\sim 0.1$  kg of uranium will be contained in non-destructive examination standards to be retained by each fabricator. The quantities discussed are summarized below.

Export

<u>Company</u>	<u>U-Metal (kg)</u>	<u><math>^{235}\text{U}</math> (kg)</u>
CERCA	32.5	6.419
NUKEM	27.0	5.333

1/25/80 - called Mike McDermogh  
 Later discussed it with all parties involved -  
 Mattson, Mc Claff, Thomsen.

POOR ORIGINAL

January 25, 1980

Import

<u>Company</u>	<u>Item</u>	<u>Contained U (kg)</u>	<u>Contained <sup>235</sup>U</u>
CERCA	20 Std. El.	16.9	3.340
CERCA	Scrap	15.2	2.992
NUKEM	25 Std. + 10 Ct1. El.	25.4	. 015

In order for CERCA and NUKEM to fabricate and deliver elements in time to start the demonstration in September, 1980, it will be necessary to ship the uranium as soon as processing has been completed at Y-12. This means that lease agreements, export licenses, and other documents must be finalized by the middle of March, 1980. Rapid issuance of these documents is vital for another, and possibly more important, reason. This particular fuel element procurement will probably be viewed by foreign fuel fabricators as a test of assurances given by the U.S. Government that the delays recently encountered in obtaining export licenses for highly-enriched uranium will not be encountered for low (<20%)-enriched uranium.

JLS/ej

cc: L. R. Dates  
A. Travelli