

<b>NRC FORM 7</b> (6-2006) 10 CFR 110		<b>U.S. NUCLEAR REGULATORY COMMISSION</b>		<b>APPROVED BY OMB: NO. 3150-0027</b>		<b>EXPIRES: 06/30/2009</b>	
<b>APPLICATION FOR NRC EXPORT/IMPORT LICENSE, AMENDMENT, OR RENEWAL</b> (See Instructions on Page 5)				Estimated burden per response to comply with this mandatory collection request: 2.4 hours. This submittal is reviewed to ensure that the applicable statutory, regulatory, and policy considerations are satisfied. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0027), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.			
<b>PART A. FOR NRC USE ONLY</b>		<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC		DATE RECEIVED <b>4/13-07</b>			
LICENSE NUMBER <b>XSNM 3491</b>		DOCKET NUMBER <b>11005683</b>		ADAMS ACCESSION NUMBER			
<b>PART B. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, OR RENEWALS</b> (If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)							
1. NAME AND ADDRESS OF APPLICANT/LICENSEE Pacific Northwest National Laboratory 902, Battelle Boulevard, Richland, WA 99352			1a. NAME OF APPLICANT'S CONTACT Glen Warren		1b. APPLICANT'S REFERENCE NUMBER		
			1c. PHONE NUMBER (509) 373-9477		1d. FAX NUMBER (509) 376-5824		
			1e. E-MAIL ADDRESS glen.warren@pnl.gov				
2. TYPE OF NRC LICENSE REQUESTED (Check One)							
<input checked="" type="checkbox"/> EXPORT (Parts B, C, E) <input type="checkbox"/> IMPORT (Parts B, D, E) <input type="checkbox"/> COMBINED EXPORT/IMPORT (Parts B, C, D, E) <input type="checkbox"/> AMENDMENT/RENEWAL Existing License Number:							
3. CONTRACT NUMBER(S)		4. FIRST SHIPMENT DATE 06/01/2007		5. LAST SHIPMENT DATE 09/30/2008		6. PROPOSED EXPIRATION DATE 10/31/2008	
<b>PART C. TO BE COMPLETED FOR EXPORT ONLY OR COMBINED LICENSES, AMENDMENTS, OR RENEWALS</b> (If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)							
7. NAME(S) / ADDRESS(ES) OF SUPPLIERS AND/OR OTHER PARTIES TO THE EXPORT Pacific Northwest National Laboratory 902, Battelle Boulevard Richland, WA 99352			8. NAME(S) / ADDRESS(ES) OF INTERMEDIATE FOREIGN CONSIGNEE(S)			9. NAME(S) / ADDRESS(ES) OF ULTIMATE FOREIGN CONSIGNEE(S) Institute fuer Kernphysik Technische Universitaet Darmstadt Schlossgartenstr. 9 64289 Darmstadt Germany  <i>Rec'd 4-13-07 RB</i>	
7a. LIST FUNCTIONS PERFORMED/SERVICE PROVIDED Research and Development			8a. INTERMEDIATE USE(S)			9a. ULTIMATE END USE(S) Research Study	
10. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES, EQUIPMENT, OR COMPONENTS Highly Enriched Uranium  <i>Metal foils inside plastic containers</i>				10a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq) 0.00771kg		10b. MAX ENRICHMENT OR WGT % 93.11%	10c. MAX ISOTOPE WGT (KG) 0.00717kg of U-235
11. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME) None							

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U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR NRC EXPORT/IMPORT  
LICENSE, AMENDMENT, OR RENEWAL (Continued)

LICENSE NUMBER <i>XSNM349</i>	DOCKET NUMBER <i>11005623</i>	ADAMS ACCESSION NUMBER	<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC
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**PART D. TO BE COMPLETED FOR IMPORT ONLY, OR COMBINED LICENSES, AMENDMENTS, OR RENEWALS**  
(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

12. NAME(S) / ADDRESS(ES) OF FOREIGN SUPPLIERS AND/OR OTHER PARTIES TO IMPORT  Institute fuer Kernphysik Technische Universitaet Darmstadt Schlossgartenstr. 9 64289 Darmstadt Germany	13. NAME(S) / ADDRESS(ES) OF INTERMEDIATE CONSIGNEE(S)	14. NAME(S) / ADDRESS(ES) OF ULTIMATE CONSIGNEE(S)  Pacific Northwest National Laboratory 902, Battelle Boulevard Richland, WA 99352	
12a. NRC EXPORT LICENSE NUMBER(S) (if applicable)	13a. LICENSE NUMBER(S) / EXPIRATION DATE(S)	14a. LICENSE NUMBER(S) / EXPIRATION DATE(S)	
	13b. INTERMEDIATE USE(S)	14b. INTERMEDIATE USE(S)	
15. DESCRIPTION OF RADIOACTIVE MATERIALS, SEALED SOURCES, NUCLEAR FACILITIES  Highly Enriched Uranium	15a. MAX TOTAL VOLUME / ELEMENT WGT (KG), OR TOTAL ACTIVITY (TBq)  0.00771kg	15b. MAX ENRICHMENT OR WGT %  93.11%	15c. MAX ISOTOPE WGT (KG)  0.00717kg of U-235  <i>Rec'd 4-13-07 RB</i>
16. FOREIGN OBLIGATIONS (BY COUNTRY AND BY PERCENTAGE OF MAXIMUM TOTAL VOLUME)  None			

**PART E. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, OR RENEWALS**

17. ADDITIONAL INFORMATION PROVIDED ON PAGES 3, 4, AND/OR ON SEPARATE SHEETS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	17a. COPIES OF RECIPIENTS' AUTHORIZATIONS PROVIDED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
18. CERTIFICATION: I, the applicant's authorized official, hereby certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, and that all information provided is correct to the best of my knowledge.		
18a. PRINT NAME AND TITLE OF AUTHORIZED OFFICIAL  Darlene Varley, Export control Specialist	18b. SIGNATURE -- AUTHORIZED OFFICIAL  <i>Darlene Varley</i>	18c. DATE  04/12/2007

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(6-2006)  
10 CFR 110

U.S. NUCLEAR REGULATORY COMMISSION

**APPLICATION FOR NRC EXPORT/IMPORT  
LICENSE, AMENDMENT, OR RENEWAL (Continued)**

LICENSE NUMBER <i>XSNM349</i>	DOCKET NUMBER <i>11005683</i>	ADAMS ACCESSION NUMBER	<input checked="" type="checkbox"/> PUBLIC OR <input type="checkbox"/> NON-PUBLIC
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ADDITIONAL INFORMATION (Reference applicable block numbers from page 1 and/or page 2 for each entry)

Pacific Northwest National Laboratory (PNNL) plans to conduct nuclear resonance fluorescence (NRF) measurements on the above mentioned sample at the Institute fuer Kernphysik, Technische Universitaet Darmstadt in Germany as a part of a project for the Domestic Nuclear Detection Office of the Department of Homeland Security and for the National Nuclear Security Administration of the Department of Energy. These measurements cannot be performed within the United States and TU Darmstadt has existing facilities for conducting the measurements and handling the sample. PNNL will prepare and ship the sample directly to TU Darmstadt. The sample will remain at TU Darmstadt only as long as necessary to make NRF measurements. Upon completion of measurements, TU Darmstadt will be responsible for the return shipping of the above mentioned sample to PNNL. This sample will be outside of the United States for at most a period of eight weeks.

*Rec'd  
H-13-07  
RMB*

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As a the permit holder, you are responsible for radiation protection in accordance with Chapter 9, Section 2 of the Atomic Law and in accordance with Chapter 29, Section 1 StrlSchV.

Your personnel that are responsible for management and oversight of the use of nuclear materials according to Chapter 9, Section 2 of the Atomic Law and for radiation protection responsibility are:

Prof. Dr. H. Frank, Director of the Radiation Protection Department

Dr. Dieter Tüsch, Dipl. Phys.

Anton v. Gunten, Dipl. Phys.

The removal or appointment of further responsible personnel and radiation protection officers must be immediately indicated in writing to the State Trade Supervisory Board in Darmstadt, Holzhofalle 17A, 6100 Darmstadt, as the supervisory authority for nuclear law. You must certify proof of required radiation protection training and attach a copy to the permit.

The cognizant state authority required by Chapter 47, Section 1 StrlSchV is the Test and Measurement Office for the Worker's Oversight Administration for the State of Hesse, Ludwig-Mond-Strasse, 33 b, 3500 Kassel, Tel. (0561) 2931. There you can obtain the applicable guidelines for the collection, storage, and transport of radioactive wastes.

The permission is not transferable.

This permit does not supersede other permits required by statute, permissions, or the like. Moreover, you are required (to comply). The permit does not absolve you from existing duties to give notice.

As to the possibility of the publication of subsequent versions in accordance with Chapter 17, Section 1, Sentence 3 of the Atomic laws as well as the re-acceptance and of the revocation according to Chapter 17, Sections 2 through 5 of the Atomic laws will be referred to.

With today's decree, I have assigned the national Industrial Inspection Office of Darmstadt, per Chapter 24, Section 2, Sentence 3 of the Atomic laws, no additional regulatory duties of oversight over the use of nuclear materials, as far as in the particular case under consideration the use of nuclear materials outside of nuclear installations is regulated with this notice of approval.

D. Covering Precaution

The President of the Technical University of Darmstadt

6100 Darmstadt

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Subject: Execution of the Atomic Laws and of the Radiation Protection Act according to Part 9 of the Atomic Law

Reference: Proposal of the Institute for Nuclear Physics (Prof. Dr. H. Frank) of June 1, 1979 (received on June 25, 1979) as well as the telephone conversation between Dr's Türch and Mr. Wilhemi from my house on August 10, 1979

Permission

A. Extent of the Permission

Due to Chapter 9 Section 1 of the laws concerning the peaceful use of atomic energy and the protection against its dangers (Atomic law) of December 23, 1959 (BGBI. I S. 814) in that version of the proclamation of October 31, 1976 (BGBI. I S. 3053), amended by law on December 3, 1976 (BGBI. I. S. 3281), in connection with Chapter 3 Section 2 of the regulation concerning protection from harm through ionizing radiation (Radiation Protection Regulation – StrlSchV) of October 13, 1976 (BGBI. I S. 2905, 1977 I S. 184, 269), amended by the second decree on the modification of the export regulations to the law concerning units in Messwesen of December 12, 1977 (BGBI. I S. 2537), I grant to you the permission for the use of nuclear materials and extend permission for the handling of additional radioactive materials:

- a) plutonium arbitrary/any isotope mixtures
- b)  $U_{233}$
- c)  $U_{235}$
- d) Uranium with naturally-occurring isotope mixtures

in each case up to 100 times the unrationed allowance in Part IV, Table IV, column 4 of the StrlSchV (Atomic protection law).

The permission includes that you can, if necessary replenish the stock of nuclear fuels and other radioactive materials up to the indicated quantities ((radio)activities).

The permission is granted according to the data contained in your request.

B. Limitations

1. The permission extends to the rooms at the Institute for Nuclear Physics identified in your request.

C. Radiation Protection Responsibility, Radiation Protection Assignments, Directions

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Covering precaution is furnished through the membership responsibility of the State of Hesse, confirmed through the answer of the Hessen Secretary of Cultural Affairs on 24 December, 1968 (H II 3-423/265), published StAnz. 5/1969, page 180).

E. Conditions

1. An issuance of this permit is to be kept in such a way, that representatives of the oversight authorities and those from your consulted experts or the assigned other consulted authorities can be expected at any time at the place of authorized handling.
2. Rooms, in which open nuclear materials are moved about, must be equipped with a jointless, easily washable floor covering; they may contain for handling only the necessary articles and equipment. The doors of these rooms must be marked on the exterior. The markings must contain the word "Radioactive." The admission of unauthorized personnel must be securely prohibited.
3. All materials and equipment that can possibly come in contact with nuclear material must have a smooth, easily cleanable surface.
4. To protect against outward radiation fields, suitable protection material (for example, lead brick walls, Plexiglas shields with manipulators) are to be readily available and used.
5. To measure stray radiation fields, suitable dosimetry equipment must be available at all times.
6. Work which entails or can cause evaporation, spraying, or dust must be carried out in glove boxes.
7. Open plutonium may only be handled in closed systems or remotely (?).
8. In the event of contamination of the floor, walls, equipment, apparatus and the like, a wet cleaning must be carried out immediately. The exposed material used for decontamination must be handled as radioactive waste.
9. A suitable apparatus to check for any contamination of the room air, the area (floor and walls) or equipment and apparatus and of personnel must be present and be utilized.
10. In areas in which open nuclear materials are present, eating, drinking, and smoking is not permitted.
11. The protective work clothing worn during exposure to nuclear materials and various radioactive substances must be checked for contamination prior to laundering. Contaminated protective work clothing may only be washed in special equipment intended for that purpose. Separate storage for street and work clothing must be provided.
12. Personnel who are not trained for handling of nuclear materials and other radioactive materials (for example, manual laborers, cleaning staff) may be active in control areas only under the direct supervision of health physics officer.
13. The nuclear material and other radioactive materials are to be protected against fire and theft; they are to be supervised constantly in such a way that unauthorized withdrawal and unauthorized handling are prohibited. Unused material must be constantly locked up.

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14. Suitable fire protection measures must be in agreement with responsible authority for fire protection and the national industrial safety to meet with the approval of the national industrial advisory board (Chapter 37, StrlSchV).
15. Exhaust air from the area in which open nuclear materials are handled may not be used again as circulating air.
16. Measuring points must be furnished for an intermittent emissions measurement at freely flowing exhaust ducts through which areas with open radioactive materials are aired out.
17. The exhaust air must be vented from the roof. A free flow must be ensured.
18. Maintenance of the exhaust air and sewage system may only be carried out with the permission and under the supervision of the health physics officer.
19. The body dose is to be determined through measurement of the personal dosimeter, which is requested and sent in for evaluation monthly from the analysis facility for radiation dosimeters of the Society for Radiation and Environmental Research, Munich, Ingolstaedter Landstrasse 1, 8042 Oberschleissheim (Ortsteil Neuherberg).

#### F. Expenses

Due to Chapter 3, Section 1 of the cost regulation of the atomic law of March 24, 1971 (BGBl. I S. 266) in connection with Chapter 9, Section 1 of the administrative expense law of June 23, 1970 (BGBl. I S. 821), the permit will be issued without cost. Expenses are not generated.

#### G. Legal Recourse Information

You can contest this decision within one month after publication at the administrative court in Darmstadt, Neckarstrasse 3a, 6100 Darmstadt. The complaint must designate the plaintiff, the nature of the complaint and grounds for contention and must contain a specific request. The prevailing reasons, facts and proof must be provided and the contested decision in original or copy must be attached.

By order of:

Dipl. Phys. Hinrichs