

(6-93)
10 CFR 30, 32, 33
34, 35, 36, 39 and 40

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19408-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30323-0199

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
LISLE, IL 60532-4351

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

RADIOACTIVE MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION V
1450 MARIA LANE
WALNUT CREEK, CA 94596-5368

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER SUB 1435
- C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)

Commander
U.S. Army Test & Evaluation Command
ATTN: AMSTE-ST
Aberdeen Proving Ground, MD 21005-5055

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Jefferson Proving Ground
Madison, Indiana 47250-5100

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Tanya Palmateer Oxenberg

TELEPHONE NUMBER

410-278-1309

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.


5. RADIOACTIVE MATERIAL. a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.	6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.
7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.	8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.
9. FACILITIES AND EQUIPMENT.	10. RADIATION SAFETY PROGRAM.
11. WASTE MANAGEMENT.	12. LICENSEE FEES (See 10 CFR 170 and Section 170.31) FEE CATEGORY <u>N/A</u> AMOUNT ENCLOSED \$

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE
COL JAMES KRIEBEL, Deputy Commander

SIGNATURE 

DATE 9/29/95

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED \$	CHECK NUMBER	COMMENTS
APPROVED BY				DATE	

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DISTRIBUTION

ITEM 5

FCT Project Sponsors

PEOs:

PEO, Armaments, ATTN: SFAE-AR, Picatinny Arsenal, NJ 07806-5000

PEO, Armored Systems Modernization, ATTN: SFAE-ASM, Warren, MI 48397-5000

PEO, A **ELEMENT IN CHEMICAL AND PHYSICAL FORM** **AMXIMUM AMOUNT TO BE POSSESSED AT ANY TIME**

PEO, Combat Support, ATTN: SFAE-CS, Fort Monmouth, NJ 07703-5000

PEO, Command and Control Systems, ATTN: SFAE-CC, Fort Monmouth, NJ 07703-5000

PEO, Communication Systems, ATTN: SFAE-CM, Fort Monmouth, NJ 07703-5000

PEO, **Depleted Uranium Solid Metal alloyed with 0.75% titanium** **80,000 kg.**

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ITEM 6

Depleted Uranium was used as a component in munitions which were tested at Jefferson Proving Ground. Testing no longer takes place at JPG. The only operations that will take place are those necessary for decommissioning.

ITEM 7

TANYA PALMATEER OXENBERG, Health Physicist

ROBERT A. AASERUDE, Health Physicist

Tanya Palmateer Oxenberg

Health Physicist

B.S./B.A. Biology (w/Health Physics Option)/French, Virginia Polytechnic Institute and State University June 1978

Masters Candidate in Health Physics, Georgia Institute of Technology

Principles of Radiation Protection	Virginia Polytechnic Inst & State Univ	6 qtr credit hours
	Georgia Institute of Technology	3 qtr credit hours
Mathematics	Virginia Polytechnic Inst & State Univ	12 qtr credit hours
	Essex Community College	15 semester credit hours
	Johns Hopkins University	3 semester credit hours
Biological Effects	Virginia Polytechnic Inst & State Univ	3 qtr credit hours
	Georgia Institute of Technology	4 qtr credit hours
Instrumentation and Calibration	Virginia Polytechnic Inst & State Univ	3 qtr credit hours
	Georgia Institute of Technology	4 qtr credit hours

Source	Quantity	Location	Date
<p>H-3, P-32, C-14</p> <p>Cs-137</p> <p>Pu-139:Be</p> <p>C-14, Sr-90, Co-60, Pu-239</p> <p>fission products</p>	<p>μCi, liquid tracers in gas productivity and uptake exp</p> <p>20 mCi, calibration gamma detectors</p> <p>1 Ci, calibration neutron detectors</p> <p>μCi, calibration alpha, beta, gamma gas flow detectors</p> <p>100 kW research reactor; surveys and monitoring</p>	<p>Va Polytechnic Inst & State Univ Blacksburg, Va</p>	<p>Sept 1977 to Jun 1978</p>

<p>enriched U</p> <p>fission products</p> <p>Ba-133, Cr-51, Co-57, Co-58, Co-60, Cs-134, Cs-137, Y-88</p> <p>Cs-137, Co-60, Ba-133</p> <p>Cs-137</p> <p>Sr-90, Co-60, Tc-99</p>	<p>fuel assemblies for 960 MW Pressurized Water Reactor; surveys for refueling</p> <p>sev Ci; air, effluent monitoring, steam generator repair, refueling, containment entries, packaging and disposal rad waste</p> <p>5 μCi; Calibration sources for Ge- Li Detector</p> <p>2 μCi; response source for Ge-Li detector</p> <p>130 Ci and 10 mCi; calibration source for gama detector</p> <p>.1 μCi; calibration and response source for beta & gamma gas flow detector</p>	<p>Virginia Electric Power Company North Anna Power Station Mineral, Va</p>	<p>April thru Oct 1979</p>
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Pu-139	.9 nCi; calibration of alpha gas flow detector	Virginia Electric Power Company North Anna Power Station	April thru Oct 1979
Am-241:Be	30 mCi; calibration neutron detector	Mineral, Va	
H-3	22.5 nCi; liquid calibration for liquid scintillation		

Am-241, Sr-90	<p>μCi; calibration alpha, beta gas flow detector</p>	<p>Radiation Mgt Corp APG, MD</p>	<p>Nov 1979- Jun 1981</p>
fission products	<p>fast burst reactor rad waste; survey of packages prior to shipment</p>		
depleted uranium	<p>1040 kg; hard target firing, surveys, packaging and disposal of rad waste, air/effluent and env monitoring</p>		
	<p>100 kg; contaminated soil, packaging and disposal as rad waste</p>		

<p>2 Research reactors, linear accelerators, x-rays, radiography, and numerous byproduct, special nuclear, and source material</p> <p>depleted uranium</p> <p>Ra-226, Pm-147, and H-3</p>	<p>program mgt; annual inspections of workplaces and procedures of six test centers with 16 NRC licenses</p> <p>several thousand kg; tank ammunition, armor and weapon debris, recovery, env monitoring, packaging and shipping rad waste</p> <p>μCi to sev Ci; paint and gaseous; U.S. and Foreign Materiel gauges, dials, and vehicles</p>	<p>U.S. Army Test and Evaluation Command APG, MD</p> <p>White Sands Missile Range, NM Dugway Proving Ground, UT Aberdeen Proving Ground, MD Jefferson Proving Ground, IN Electronic Proving Ground and Yuma Proving Ground, AZ</p> <p>JPG, APG, YPG</p> <p>YPG, APG</p>	<p>June 1981 to present</p>
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Th-234	Vandal missile; recovery	WSMR
H-3	500 mCi to 17 Ci; gaseous; sights, dials, range indicators, compasses, light wands (120 Ci)	Ft Bragg, NC; Ft Greely, AK; APG, JPG
Ni-63	10-15 mCi; gas and solid; gas chromatographs, chemical agent detectors	DPG, Panama, Ft Knox, KY
C-14	μ Ci; photometer	Panama
Am-241	250 μ Ci; chemical agent detector	DPG, APG, Panama
Sr-90	25 μ Ci; Foreign Materiel, ice detector	APG
Pu-239	260 μ g; Foreign materiel, chemical agent detector	APG

RADIOLOGICAL TRAINING AND EXPERIENCE OF ROBERT A. AASERUDE
September 1995

1. Training.

<u>Type of Training</u>	<u>Where Trained</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
Principles and Practice of Radiation Protection	Oregon State University	1 year	No	Yes
	Health Physics Office, BRL	2 years	Yes	No
	Reactor Facility	19 years Jul 68 - Jan 88	Yes	No
	USACSTA	2 years	Yes	No
Radioactivity Measurements	Oregon State University	1 year	No	Yes
	Health Physics Office, BRL	2 years	Yes	No
	Reactor Facility	19 years Jul 68 - Jan 88	Yes	No
	USACSTA	2 years	Yes	No
Mathematics and Calculations	Oregon State University	6 years	No	Yes
	Health Physics Office, BRL	2 years	Yes	No
	Reactor Facility	19 years Jul 68 - Jan 88	Yes	No
	USACSTA	2 years	Yes	No

Radiological Training and Experience of Robert A. Aaserude (Continued)

<u>Type of Training</u>	<u>Where Trained</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
Radiological Effects of Radiation	Oregon State University	1 year	No	Yes
	Health Physics Office, BRL	2 years	Yes	No
	Reactor Facility	19 years Jul 68 - Jan 88	Yes	No
Depleted Uranium testing	USACSTA	2 years	Yes	No
	USACSTA	2 years	Yes	No

Radiological Training and Experience of Robert A. Aaserude (Continued)

2. Education.

Mr. Aaserude has a B.S. degree in Physics received in 1963 from Oregon State University and a M.S. degree in Radiological Physics received from Oregon State University in 1965. From August 1966 to July 1969, Mr. Aaserude served as the Radiological Safety Officer for the U.S. Army Ballistic Research Laboratories (BRL) and Chief, Health Physics Office with overall responsibility for the radiological health and safety program at the laboratories including staff supervision of the BRL nuclear research reactor, the BRL Radiation Laboratory, and the handling of all radioactive isotopes and other sources of ionizing radiation. From July 1969 to January 1988, Mr. Aaserude served as the Reactor Health Physicist at the Army Pulse Radiation Facility (APRF). From January 1988 to December 1989, Mr. Aaserude served as the Radiation Protection Officer for USACSTA with responsibility for the APRF, the depleted uranium testing program and all other USACSTA programs involving radioisotopes and other sources of ionizing radiation. From December 1989 to present Mr. Aaserude has been serving as a health physicist for Headquarters, U.S. Army Test and Evaluation Command. The TECOM operates ten test centers located in various parts of the country. Five of the test centers hold a total of eleven NRC licenses including broadscope, byproduct, source and special nuclear material. Two of the test centers operate nuclear research reactors. Two conduct outdoor testing of depleted uranium munitions. One test center is just closing after ten years of outdoor DU munitions testing.

3. Job Assignments.

- a. Chief Health Physicist
- b. Reactor Health Physicist
- c. Radiation Protection Officer
- d. Radioactive Materials Inventory Control Officer
- e. Chairman, Radiation Protection Committee
- f. Member, Proposal Evaluation Board to perform technical evaluation for environmental radiological monitoring and health physics programs.
- g. Special Nuclear Material Custodian
- h. Alternate Radiological Accident/Incident Control Officer
- i. Contracting Officer's Representative

Radiological Training and Experience of Robert A. Aaserude (Continued)

4. Use of Ionizing Radiation.

<u>ISOTOPE</u>	<u>MAX AMT</u>	<u>LOCATION</u>	<u>DURATION</u>	<u>TYPE OF USE</u>
H-3	10 curies	USACSTA/APG, MD	2 years	Light sights
Sr-90	1 curie	USABRL	1 year	Leak test
Cs-137	9 curie	USABRL	2 years	Calibration
Pm-147	25 millicurie	USABRL	1 year	Leak test
Ra-226	200 millicurie	USABRL	1 year	Calibration
U-238	100 pounds	USABRL	2 years	Testing
Depleted uranium	10,000 Kgms	USACSTA/APG, MD	2 years	Munitions tests
PU-239	5 curie	USABRL	2 years	Neutron source
Am-241	16 microcurie	USABRL	1 year	Leak test
Cf-252	19 micrograms	Reactor Facility	6 years	Neutron source
Co-60	10,000 curie	Reactor Facility	17 years	Irradiators
Ba-133	Small amounts	USABRL	17 years	Check source
Cd-109	"	"	17 years	"
Co-57	"	"	17 years	"
Mn-54	"	"	17 years	"
Np-237	"	"	17 years	"
Na-22	"	"	17 years	"
Th-230	"	"	17 years	"
U-235	Large amounts	"	17 years	Reactor fuel

ITEM 8

The area impacted by DU testing will be monitored to assess the environmental impact. The work will be contracted and training will be the responsibility of the contractor.

ITEM 9