DL-090497_01

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Reston, Virginia 22092

In Reply Refer To
Mail Stop 926A

SEP 04 1997

Ms Diane Heim
U. S. Nuclear Regulatory
Commission, Region II
101 Marietta Street, N W., Suite 2900
Atlanta, Georgia 30323-0199

License No. 45-15923-01
Expiration Date November 30, 2000

Dear Ms Heim

Enclosed for your information are two signed copies of an amendment to the present Material License No. 45-15923-01, which is being submitted for review and appropriate action. The main reason for this amendment is a suggestion by your office to combine all three present existing licenses into one material license

Since the U S Geological Survey (USGS) is significantly reducing its present research effort in the use of radioactive materials, we would like to combine the following two licenses into one material license

- Material License No 45-15923-01
  Docket or Reference No 030-10034

- Special Nuclear Material License No 1330
  Docket or Reference No 070-01358

There has been a thorough physical inventory and accountability of all radioactive material presently identified on these licenses Radioactive material no longer in use has been and will continue to be disposed of as Low-Level Radioactive Waste

In addition, the Electron Capture Detector foils presently identified on this license have been determined to belong to the manufacturer of the Gas Chromatographs under their General License The licensed material will only be used at the USGS facilities located at the National Center, 12201 Sunrise Valley Drive, Reston, Virginia The USGS facility located at 729 Gracern Road, Columbia, South Carolina, has obtained its own Nuclear Regulatory Commission materials license and should no longer be identified on the license for the USGS, Reston, Virginia

[illegible]

In addition, when the Source Materials License number SMB-237 is incorporated into one materials license, the licensed material will only be used at the USGS, Reston, Virginia. The other locations, located in Golden and Denver, Colorado, shall be deleted. The Radiation Safety Officer designee is Charles W. Naeser, Ph.D. Mr. Gregory A. Wandless and William C. Andrle shall be deleted.

With respect to the Special Nuclear Materials License number SNM-1330, the Radiation Safety Officer designee is Charles W. Naeser, and Mr. Gregory A. Wandless shall be deleted.

Should there be a need to discuss specific items and/or questions concerning this license amendment, please call Charles Naeser at (703) 648-6189 or Michael S. Terpilak, Certified Health Physicist, who presently provides health physics consultation services and technical assistance to the USGS. Mr. Terpilak's phone number is (301) 598-5633.

The USGS would appreciate the processing of this license application in a timely manner. Thank you in advance for your utmost attention and cooperation in this matter.

Sincerely yours,

Barbara J. Ryan

Associate Director

Enclosures

NRC FORM 313 U. S. NUCLEAR REGULATORY COMMISSION

(10-94)
10 CFR 30, 32, 33
34, 35, 36, 39 and 40

APPLICATION FOR MATERIAL LICENSE

APPROVED BY OMB: NO. 3150-0120
EXPIRES 6-30-98

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 (T-6 F33), 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.

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 19406-1415

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

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, 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

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)
   - [X] A NEW LICENSE
   - [ ] B AMENDMENT TO LICENSE NUMBER _____
   - [ ] C RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)
   US Department of the Interior
   Geological Survey National Center
   12201 Sunrise Valley Drive
   Reston, Virginia 22092

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED
   US Geological Survey National Center, MS 926A
   12201 Sunrise Valley Drive
   Reston, Virginia 22092

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION
   Charles W. Naeser (R30)
   Radiation Safety Officer

   TELEPHONE NUMBER
   (703) 648-6964

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 Exempt 7C AMOUNT ENCLOSED $ 0

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	SIGNATURE	DATE
Gordon P. Eaton, Director USGS		

FOR NRC USE ONLY

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

NRC FORM 313 (10-94)

PRINTED ON RECYCLED PAPER

ITEM 5

RADIOACTIVE MATERIAL

	Element/Mass Number	Chemical and/or physical form	Maximum amount that licensee may possess at any one time
A.	Carbon-14	Any	10 millicuries
B.	Any By-product material product from irradiation of geologic samples (rocks)	Activated samples	530 millicuries
C.	Uranium enriched in U-235 isotope	Any	200 milligrams of contained U-235 (0.4 microcurie)
D.	Thorium enriched in Th-230	Any	30 milligrams of contained Th-230 (0.60 millicurie)

AUTHORIZED USE:

A. For use in laboratory tracer studies and molecular biology procedures

B. For use in laboratory research studies of neutron activated geologic samples

C. and D. For determination of ages of materials by isotopic dilution of Natural Uranium and Thorium.

ITEM 6

Purpose(s) for which licensed material will be used:

- Carbon-14 will be used in laboratory tracer studies and molecular biology procedures
- Activated samples will be used in Laboratory Research Studies

Uranium and Thorium will be used in laboratory research and development in accordance with statements, representations and procedures contained in application dated December 22, 1992.

Uranium and Thorium will be used for determination of ages of materials by isotopic dilution of natural Uranium and Thorium.

ITEM 7

Individuals responsible for Radiation Safety Program and material usage.

Radiation Safety Officer (RSO)

- Charles W. Naeser

  Currently holds these po. :ion under License # 15-15923-01

AUTHORIZED USERS:

A.	Charles W. Naeser	For materials listed in Subitems 6.C and 6.D and for 6.A through 6.D incident to r: liation safety duties.
B.	Nancy D. Naeser	For materials listed in Subitem 6.C
C.	Jeffrey N. Grossman	For materials listed in Subitems 6.B and C
D.	Curtis A. Palmer	For materials listed in Subitmes 6.B and C
E.	Elizabeth J. Jones	For materials listed in Subitems 6.A and B
F.	Gregory A. Wandless	For materials listed in Subitems 6.C and D

ITEM 8

TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

1.0 PURPOSE

The purpose of this procedure is to determine the training requirements, training frequency, and individuals affected by the Training Program.

2.0 APPLICABILITY

This procedure applies to those individuals responsible for determining personnel affected, for scheduling training, and for those individuals responsible for conducting and monitoring the Training Program.

3.0 DEFINITIONS

3.1 USGS - US Geological Survey

3.2 RSO—Radiation Safety Officer

3.4 Restricted Area—Any area access to which is controlled for the purpose of protection of individuals from exposure to radiation and radioactive material.

4.0 RESPONSIBILITIES AND AUTHORITIES

4.1 The Radiation Safety Officer (RSO) has the responsibility to ensure that all individuals whose duties require them to work in the vicinity of radioactive material are properly instructed as required by paragraph 19.12 of 10 CFR 19.

4.2 Laboratory Supervisors have the responsibility to ensure that all individuals working in his/her lab have sufficient instruction or on-the-job training to perform their duties with or near radioactive material in a safe manner.

4.3 The Radiation Safety Officer, (RSO) has the authority to require any individual or group of individuals to attend refresher training in Radiation Safety practices if, in his opinion, that individual or group of individuals demonstrates a lack of knowledge in Radiation Safety practices. This refresher training may be in addition to the annual training requirements.

5.0 REQUIREMENTS AND INSTRUCTIONS

5.1 The Training Program shall include, but is not limited to, the requirements as outlined in paragraph 19.12 of 10 CFR 19 and in 10 CFR 20.

5.2 The Training Program shall be conducted:

a) Initially when an individual first enters the USGS work staff.

b) As deemed necessary by the RSO.

5.3 All individuals who work with or near radioactive materials are required to attend the training classes as outlined above. This shall include those individuals such as security and housekeeping staff who must enter any portion of a Restricted Area in the performance of their job.

5.4 The training class should address items as found in the attached class outline, or other similar guide.

6.0 RECORDS

6.1 A record of those who attended training classes shall be documented using the Attendance Record of Training form.

6.2 Records of training shall be retained as specified in the Radiation Safety Manual.

7.0 REFERENCES

7.1 10 CFR 19

7.2 10 CFR 20

7.3 NBS Handbook 92

7.4 NCRP Report No. 39

7.5 NCRP Report No. 48

8.0 ATTACHMENTS

8.1 Training Class Outline for Radiation Workers

8.2 Training Class Outline for Ancillary Workers

8.3 Attendance Record of Training

CLASS OUTLINE FOR RADIATION WORKERS

I Introduction

A. Purpose of training

1. To fulfill regulatory requirements.

2. To familiarize workers with standards for protection.

B. References

1. 10 CFR 19
2. 10 CFR 20
3. NBS Handbook 92
4. NCRP Reports No 39 and 48

II Principles of Radiation Protection

A. Philosophy of radiation exposure control

1. Radiation exposure control.
2. Radioactive material control.

B. Regulations and recommendations

C. Physical safeguards

D. The ALARA concept

III. Radioisotope Laboratory Safety Procedures

A. Isotope receipt and inspection.

B. Radiation Caution signs and labels.

C. Anti-contamination practices.

D. Radioactive waste disposal.

E. Personnel monitoring

F. Radiation emergency procedures.

IV Radiation Protection Surveys

A. Criteria and frequency.

B. Measurement of radiation levels.

C. Reviews and audits.

V Question and Answer Time

USGS
RADIATION TRAINING SIGN-IN SHEET

DATE: _____ CLASS: _____

Print Name	Signature	SSN

ITEM 9

FACILITES AND EQUIPMENT

The National Center for the U.S. Geological Survey is located in Reston,Virginia. The seven story building houses both research facilities and the administrative offices for the Agency. The Geological Survey conducts research in the earth sciences: geology, hydrology, biology and mapping.

There are four laboratories in the National Center that use radioactive materials for research. These laboratories conduct research in hydrology and geochronology. All laboratories have either tile of sealed concrete floors. The bench tops and sinks in the laboratories are all made of laboratory grade composition material or stainless steel. The laboratories also contain fume hoods.

Monitoring equipment consists of a liquid scintillation counter, 4 G-M rate meters and a thin windowed counter for monitoring alpha activity. Film badges are worn by all workers in the laboratories where radioactive material is used.

ITEM 10

RADIATION SAFETY PROGRAM

Enclosed is the Radiation Safety Manual recently developed and presently in use at the USGS National Center, Reston, Virginia to implement the current Radiation Safety Program.

ITEM 11

WASTE MANAGEMENT

Refer to section V entitled Waste Disposal in the USGS Radiation Safety Manual for specific procedures and protocols, dealing with Low-Level Radioactive Waste (LLRW).

In addition, the disposal Low-Level Radioactive Waste (LLRW) is also handled by a licenced broker specifically the U.S. Army which is located at Rock Island. Illinois.