

### 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. **REGION V**

APPLICATIONS FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS  
WASHINGTON, DC 20545

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:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
NUCLEAR MATERIALS SAFETY SECTION B  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
NUCLEAR MATERIALS SAFETY SECTION  
101 MARIETTA STREET, SUITE 2900  
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
NRC FUEL CYCLE LICENSING SECTION  
799 ROOSEVELT ROAD  
GLEN ELLYN, IL 60137

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
MATERIAL RADIATION PROTECTION SECTION  
811 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TX 76011

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
NUCLEAR MATERIALS SAFETY SECTION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CA 94596

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 JURISDICTION.

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

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER
- C. RENEWAL OF LICENSE NUMBER 50-14858-02  
*Receipt # 030-15266*

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

Alaska Dept. of Environmental Conservation  
750 St. Ann's Avenue  
Douglas, AK 99824

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

ADEC  
Douglas Laboratory Facility  
750 St. Ann's Avenue  
Douglas, AK 99824

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Ursula Spannagel Laboratory Supervisor, ADEC

TELEPHONE NUMBER

(907) 364-2155

SUBMIT ITEMS 6 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.

6. 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. See attached.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

See attached.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.

See attached.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

See attached.

9. FACILITIES AND EQUIPMENT.

See attached.

10. RADIATION SAFETY PROGRAM.

See attached.

11. WASTE MANAGEMENT.

N/A

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 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, 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.

SIGNATURE—CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

*Ursula Spannagel*

Ursula Spannagel

Chemist IV

7/26/89

9003070356 B91017  
REG5 LIC30  
50-14858-02 PDR

FOR NRC USE ONLY

| TYPE OF FEE     | FEE LOG      | FEE CATEGORY | COMMENTS | APPROVED BY |
|-----------------|--------------|--------------|----------|-------------|
| Ren             | Aug-1-I      | EX 3P        | EXEMPT   | M. M...     |
| AMOUNT RECEIVED | CHECK NUMBER | 170.465      |          | DATE        |
|                 |              |              |          | 8/1/89      |

21019

**APPLICATION FOR MATERIAL LICENSE**

**5) RADIOACTIVE MATERIAL**

**8. LICENSE MATERIAL**

| L<br>I<br>N<br>E<br>N<br>O. | ELEMENT<br>AND<br>MASS NUMBER<br><br><b>A</b> | CHEMICAL<br>AND/OR<br>PHYSICAL FORM<br><br><b>B</b> | NAME OF MANUFACTURER<br>AND<br>MODEL NUMBER<br>(If Sealed Source)<br><br><b>C</b> | MAXIMUM NUMBER OF<br>MILLICURIES AND/OR SEALED<br>SOURCES AND MAXIMUM ACTI-<br>VITY PER SOURCE WHICH<br>WILL BE POSSESSED AT ANY<br>ONE TIME<br><br><b>D</b> |
|-----------------------------|---|---|---|--|
| (1)                         | Americium<br>241                              | Aqueous Sol'n                                       | EPA Prepared SRM  | 5x10 <sup>-5</sup> millicuries   |
| (2)                         | Gross Alpha<br>& Gross<br>Beta Emitter        | Aqueous Sol'n                                       | EPA Prepared SRM  | 4x10 <sup>-10</sup> millicuries  |

**6) PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED**

**DESCRIBE USE OF LICENSED MATERIAL  
E**

|     |  |
|-----|--|
| (1) | This material will be used as quality control samples for the measurement of gross alpha activity in drinking water samples. |
| (2) | In order to be approved by the U.S. EPA in radiochemistry, performance samples must be analyzed.                             |
| (3) | In order to continue to receive performance samples from EPA, we will renew our Byproduct Material License!                  |

**7) INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE**

**A) FORMAL TRAINING IN RADIATION SAFETY**

- 1) **Ursula Sparnagel** - No formal radiation safety training.
- 2) **Rey Jose** - No formal radiation safety training.
- 3) **Don LaFara** - No formal radiation safety training.

7) Continued

B) EXPERIENCE

- 1) Ursula Spannagel - BS Chemistry, MS Environmental Occupational Toxicology. Fifteen years laboratory experience in organic, inorganic, and biochemistry. Analytical chemistry and research working experience with radioactive materials - Carbon<sup>14</sup> and Iodine<sup>131</sup>.
- 2) Rey Jose - BS in Chemical Engineering, eight years experience in inorganic heavy metal, wet chemistry analysis, and three years in Gross Alpha analysis.
- 3) Don LaFara - Eighty-eight semester hours in pursuit of BS Medical Technology. Thirteen years laboratory experience in organic, inorganic, clinical lab analyses, and four years gross alpha analysis with training provided by Richard Heffern.

8) TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

- A) Ursula Spannagel - Same as #7 A & B.
- B) Rey Jose - Same as #7 A & B.
- C) Don LaFara - Same as #7 A & B.
- D) Munling Lee - BA in Literature, and two years laboratory experience.
- E) Martha Moore - BA in Elementary Education, MS candidate for Nutritional Sciences, and six months laboratory experience.

## 9) FACILITIES AND EQUIPMENT

Samples are evaporated to dryness in the hood, first in a glass beaker, then in planchets. The planchets are transferred to a desiccator, and then taken to the counting room for weighing and counting.

Gross alpha monitoring is essentially done in two areas. The sample preparation laboratory and the counting room area. The sample preparation or trace element laboratory consists of a fume hood, evaporation equipment, chemicals, and balances.

The counting room is 110 sq. ft. and contains the gas flow proportional counter and decade scaler. Also available is a single tank of compressed gas - (10% CH<sub>4</sub>, 90% Ar). The counting room has benches that accommodate the counter and scales. The radiation detection equipment consists of a NMC windowless gas-flow proportional counter and decade scales purchased in 1978. Primary use is to screen water samples for their gross alpha radio activity.

Calibration of Instruments: The gas-flow proportional counter is calibrated daily with Pb<sup>210</sup> supplied by Nuclear Measurements Corporation (Serial # 7824). The Pb<sup>210</sup> source is placed in the counting chamber and counted for 10 minutes. The activity of the source must fall within  $\pm 2$  standard deviations of the established mean before analysis can proceed.

## 10) RADIATION SAFETY PROGRAM

We have no formal radiation safety program at this time. The standard materials that we propose to use are so low in activity -alpha- that they need not be considered hazardous.

Wipe tests for gross alpha of table tops, floors, instruments, sample containers are made twice a year. Wipe tests for Nickel<sup>63</sup> from the ECD Detector.

Dr. Heidersdorf, a health physicist of the Dept. of Health and Social Services, State of Alaska, is willing to provide a training course in radiation safety to the analyst(s) who will be involved in the gross alpha analysis.

All of the analyst involved are professionally trained. Each has been advised of potential hazards of the materials.

10) Continued

Samples and standards are disposed of by flushing into the sewage system. A log is kept on the amounts disposed, to monitor that the permissible disposal levels specified in Title 10, Chapter 1, Part 20 are not exceeded.

Maurice Messier  
LFMB, MNBB  
4503

OCT 17 1989

Docket No. : 030-15266  
License No.: 50-14858-02  
Control No.: 71019

State of Alaska  
Dept. of Environmental Conservation  
750 St. Ann's Avenue  
Douglas, Alaska 99824

Attention: Rolly Grabbe, Ph.D.  
Acting Chief, EQM&LO

Gentlemen:

Enclosed is the NRC license renewal which you requested.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify us so that we can provide appropriate corrections and answers.

Any future correspondence relating to your license should specifically reference your license and docket numbers to expedite your inquiry.

Sincerely,

*Beth A. Riedlinger*

Beth A. Riedlinger  
Health Physicist (Licensing)  
Nuclear Materials Safety Section

Enclosure: Attachment A (original)  
Amendment No. 3 to License No. 50-14858-02 (original and copy)

RECEIVED  
OCT 17 1989  
MAIL

OCT 17 1989

Distribution

bcc w/original concurrence, copy of license, and original correspondence:  
License docket folder (Peggy)

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Reading file (Frances)

bcc w/correspondence and 2 copies of license:  
Maurice Messier, LFMB, MNBB 4503

license only:  
State of Alaska

F. Browne

J. Montgomery

D. Skov

B. Riedlinger

*BT*  
*10/17/89*

*/ /*

*BR*  
*10/17/89*

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| YES / NO     | YES / NO     | YES / NO     | YES / NO     | YES / NO     |