



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL EXPOSURE RESEARCH LABORATORY
Research Triangle Park, NC 27711

Office of
Research and Development

January 13, 2015

Licensing Assistant Team
Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission, Region I
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-2713

CERTIFIED MAIL
7006 0100 0001 8196 7835

030-086 31

Supporting Information for NRC Form 313 || Dated January 13, 2015.

Dear License Reviewer:

The purpose of this letter is to request an amendment to radioactive materials license No. 32-14048-04. The United States Environmental Protection Agency located at Research Triangle Park, North Carolina (EPA-RTP) would like to add the following type of radioactive material open compound:

6. <u>radioactive material</u>	7. <u>chemical and/or physical form</u>	8. <u>maximum amount</u>
Radium-226	Any	25 μ Ci

9. Purpose for which licensed material will be used.
Research and Development as defined in 10 CFR 30.4.

BACKGROUND INFORMATION:

The need for a license amendment arose from proposed research to be conducted as a joint effort between EPA Region 7 and the EPA National Homeland Security Research Center under the Regional Research Partnership Program (R2P2): Excavator Detector Project and Remediation of Naturally Occurring Radionuclides from Shale and Clay Soils. The objective of the research is to reduce the waste volume, and therefore cost, of radioactive contaminated soil during remediation at active and future sites where radioactive contamination of Uranium, Thorium or Radium poses a hazard.

Using uncontaminated, natural shale and clay soils as surrogates in a laboratory setting, the research will investigate detector equipment to rapidly characterize and segregate radioactive content in soils from non-radioactive components of soils. The maximum activity of Radium-226 in the natural soils was measured to be 1 pCi/gm for shale soil and between 5-7 pCi/gm for

{Over Please . . .}

585-801
NMSS/RONI MATERIALS-002

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the clay soil. Initially, two 55 gallon drums (one drum each for shale and clay) will be used in a study with a total activity of Radium-226 between 2.6 μCi to 3.0 μCi . The rapid characterization of the soils will involve the construction of a detector housing apparatus capable of attachment to an excavator bucket thumb. The housing geometry and shielding will be evaluated with the natural shale and clay soils. Additional research will be conducted on the natural shale and clay soils using simple physical (sieving and sizing) and chemical techniques in an effort to extract and concentrate the naturally occurring radionuclides. This amendment is being sought because the research project is likely to technologically enhance the concentration of the naturally occurring radioactive material in the component samples extracted from the natural soils with associated research derived wastes.

In accordance with 10 CFR 30.35(d) and EPA License 32-140418-04 condition number 12, the possession of combination of unsealed by product material isotopes will continue to be restricted to less than 10^5 times the applicable limits in Appendix B of 10 CFR Part 30. Therefore, if approved, the addition of Radium-226 in the amount of 25 μCi does not impact the EPA at Research Triangle Park, NC's financial assurance \$1,125,000 value.

Please contact me if you need any additional information regarding this license amendment request at 919-541-4307.

Sincerely,



Todd W. Baker,
Radiation Safety Officer

Enclosure: [1] NRC Form 313; dated January 13, 2015.

cc: Dr. Michael F. Hughes, Chair, Radiation Safety Committee,
Mr. Ritchie Buschow, Assistant Radiation Safety Officer,
Material License File
Reading File
RSO File



APPLICATION FOR MATERIALS LICENSE

Estimated burden per response to comply with this mandatory collection request: 4.3 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. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollections.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), 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.

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. *AMENDMENTS/RENEWALS THAT INCREASE THE SCOPE OF THE EXISTING LICENSE TO A NEW OR HIGHER FEE CATEGORY WILL REQUIRE A FEE.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

OFFICE OF FEDERAL & STATE MATERIALS AND
ENVIRONMENTAL MANAGEMENT PROGRAMS
DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA,
KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY,
NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH
CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,

SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PA 19406-2713

IF YOU ARE LOCATED IN:

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

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MISSISSIPPI, 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 BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
1600 E. LAMAR BOULEVARD
ARLINGTON, TX 76011-4511

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

32-14048-04

☐

C. RENEWAL OF LICENSE NUMBER

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

U.S. Environmental Protection Agency
109 T.W. Alexander Drive
Mail Code D343-02
Research Triangle Park, NC 27711

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

U.S. Environmental Protection Agency
109 T.W. Alexander Drive
Research Triangle Park, North Carolina
(Primary usage locations per condition 10. D. and E. of license
Amendment 45)

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Todd W. Baker

BUSINESS TELEPHONE NUMBER

(919) 541-4307

BUSINESS CELLULAR TELEPHONE NUMBER

(919) 672-8758

BUSINESS EMAIL ADDRESS

baker.todd@epa.gov

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. LICENSE FEES (Fees required only for new applications, with few exceptions*)
(See 10 CFR 170 and Section 170.31)**

FEE CATEGORY

3.L.

**AMOUNT
ENCLOSED \$**

0.00

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, 37, 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

Todd W. Baker, Acting Director, Safety, Health and Environmental
Management, Radiation Safety Officer

SIGNATURE

Todd W. Baker

DATE

1/13/15

This is to acknowledge the receipt of your letter application dated

01/13/2015, and to inform you that the initial processing which includes an administrative review has been performed.

32-14048-04 (Amendment)
☒ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned Mail Control Number 585801
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.