



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
 NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS  
 RESEARCH LABORATORY  
 GULF ECOLOGY DIVISION  
 1 SABINE ISLAND DRIVE • GULF BREEZE, FL 32561-5299  
 850-934-9200

May 15, 2006

OFFICE OF  
 RESEARCH AND DEVELOPMENT

*NMS02*

Dr. Steven Courtemanche  
 Licensing Assistance Team  
 Division of Nuclear Materials Safety  
 U.S. Nuclear Regulatory Commission, Region I  
 475 Allendale Road  
 King of Prussia, PA 19406-1415

RECEIVED  
 REGION I  
 2006 MAY 18 PM 1:15

Dear Dr. Courtemanche:

*03032959*

RE: License No: 09-10672-03

This letter is to request an amendment to Materials License 09-10672-03. The amendment is for the addition of isotope <sup>32</sup>Si (Silicon 32) for research purposes at a maximum possession limit of 5 milliCurie (5 mCi); form of silicic acid. Enclosed is NRC Form 313.

The Radiation Safety Committee has directed me to make this request after the evaluation of the necessity for this addition.

In seeking this amendment for an additional radiosotope, the Radiation Safety Committee at the Gulf Ecology Division recognizes that ALARA principles dictate a reduction in both the number of radioisotopes authorized and a reduction in the possession limits. Therefore, the Radiation Safety Committee required the principal investigator making the request to respond to the following questions:

1. Describe the importance of the research to your Division.
2. Can the research be done with a non-radioactive technique?
3. Can the research be done with another radionuclide currently authorized by the EPA/GED Nuclear Regulatory Commission (NRC) license?
4. Is the Division's management aware of the radioactive waste disposal issue, specifically, that the radioactive wastes generated by this proposed research are potentially subject to indefinite storage on-site if the current waste disposal options for this low level radioactive waste were to change?

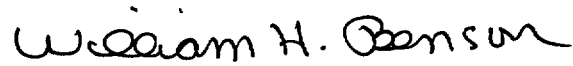
Evaluation of the responses led the Radiation Safety Committee to proceed with this amendment request for the addition of Silicon-32.

*138866*

NMOS/RGN MATERIALS-002

Thank you for your attention to this request. Please contact the RSO at 850-934-2468 if questions arise regarding the submission of this amendment.

Sincerely,

A handwritten signature in black ink that reads "William H. Benson". The signature is written in a cursive style with a large, sweeping "W" and a long, horizontal flourish at the end.

William H. Benson  
Director

Enclosure

cc: Stephanie Friedman  
GED Radiation Safety Officer

**NRC FORM 313**  
(10-2005)  
10 CFR 30, 32, 33,  
34, 35, 36, 39, and 40

**U.S. NUCLEAR REGULATORY COMMISSION**

**APPROVED BY OMB: NO. 3150-0120**

**EXPIRES: 10/31/2008**

Estimated burden per response to comply with this mandatory collection request: 4.4 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 Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [infocollects@nrc.gov](mailto:infocollects@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.

**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:**

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, MISSISSIPPI, 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  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

**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, 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  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 76011-4005

03032959

**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 09-10672-03
- C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

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

Dr. William B. Benson, Director  
US EPA, ORD/NHERRL Gulf Ecology Division  
1 Sabine Island Dr  
Gulf Breeze, FL 32561

**3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED**

US EPA, ORD/NHERRL Gulf Ecology Division  
1 Sabine Island Dr  
Gulf Breeze, FL 32561

**4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION**

Stephanie D. Friedman

**TELEPHONE NUMBER**

(850) 934-2468

**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 (See 10 CFR 170 and Section 170.31)**

FEE CATEGORY 0 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, 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**

Stephanie D. Friedman, RSO

**SIGNATURE**

Stephanie D. Friedman

**DATE**

11 May '06

**FOR NRC USE ONLY**

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

5. RADIOACTIVE MATERIAL

- a. Element and mass number:  $^{32}\text{Si}$ , atomic mass of 31.97
- b. Chemical and/or physical form: Dilute aqueous silicic Acid ( $\text{H}_4\text{SiO}_4$ ), non-volatile
- c. Maximum amount which will be possessed at any one time: 5 mCi

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

$^{32}\text{Si}$  will be used in research as a tracer for uptake by microorganisms in natural water from aquatic environments.

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

Stephanie D. Friedman, Radiation Safety Officer (Amendment No. 8, in accordance with NRC License Amendment, Control No. 138297, dated March 10, 2006). Training: Radiation Safety & Control Services, Inc, Radiation Safety Officer Training Course, Dec 5-9, 2005.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

Dr. Michael Murrell will be the principle investigator for the use of  $^{32}\text{Si}$ . Dr. Murrell is a licensed user under the Gulf Ecology Division NRC license number 09-10672-03 and has previously received additional training from the University of Maryland's Radiation Protection Training Course and University of Washington's Environmental Health and Safety course entitled "Principles of Radiation Protection".

9. FACILITIES AND EQUIPMENT.

Sample processing will be performed in designated laboratory work areas. A G-M detector will be used to monitor for  $^{32}\text{P}$  progeny in work area as will liquid scintillation counting for  $^{32}\text{Si}$  activity.

10. RADIATION SAFETY PROGRAM.

Primary and secondary stocks will be shielded with 3/8" plexiglass. The only significant exposure is to hands during stock handling. The estimated yearly dose to hands is less than 50 mrem, so dosimetry is not required. All other handling details in accordance with existing  $^{32}\text{P}$  license, except liquid waste disposal (see Item 11 below). Stocks will be stored in a locked container designated for radionuclide stocks.

11. WASTE MANAGEMENT.

Liquid waste generated will contain less than 0.1  $\mu\text{Ci}$  of  $^{32}\text{Si}$  per liter and less than 0.1  $\mu\text{Ci}$   $^{32}\text{P}$  per liter and contain no other hazardous materials. Liquid waste will be disposed of in accordance with 10 CFR 20 Appendix B. Solid waste generated will be disposed through a licensed radioactive waste disposal broker.

This is to acknowledge the receipt of your letter/application dated

5/15/2006, and to inform you that the initial processing which includes an administrative review has been performed.

APPROV. 09-1067203  
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

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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** 138866.  
When calling to inquire about this action, please refer to this control number.  
You may call us on (610) 337-5398, or 337-5260.