



Research Reactor Center

University of Missouri-Columbia

1513 Research Park Drive
Columbia, MO 65211

PHONE (573) 882-4211

FAX (573) 882-6360

WEBSITE <http://web.missouri.edu/~murrwww>

March 2, 2011

Ms. Colleen Casey
Materials Licensing Branch
US Nuclear Regulatory Commission, Region III
2443 Warrensville Rd., Suite 210
Lisle, IL 60532-4352

Reference: License Number 24-00513-39
Docket Number 030-32695

Dear Ms Casey,

The following license amendment request is being sent to you in order to increase the possession limit for an individual isotope; Cd-109, to 20 Curies at the University of Missouri, Research Reactor.

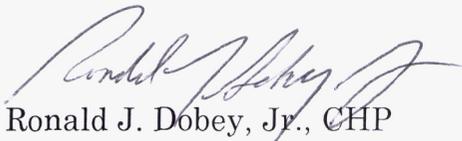
This license amendment is necessary to allow us to perform research and development on a process that may have potential for eventual commercial development. Should commercial viability of this project seem likely, we anticipate that a separate license may be necessary to accommodate the economic implications of such a process and income stream.

A requirement to provide assurance of funds for decommissioning was established for reactor licenses in 10 CFR 50.33 (k)(2). The University of Missouri submitted to the NRC a statement of intent that the University would request appropriation of funds for decommissioning of the University of Missouri-Columbia Research Reactor (MURR) sufficiently in advance of decommissioning to prevent delay of required activities (letter dated June 29, 1990). As required by 10 CFR 50.75 (e)(2)(iv), a detailed cost estimate for decommissioning MURR was included with this statement of intent. In accordance with 10 CFR 50.33 (d), the letter also describes the means of adjusting the cost estimate and associated funding level periodically over the life of the facility. Since reactor licensed radioactive materials and materials licensed radioactive materials are accounted for separately but used in the same laboratory facilities, the detailed cost estimate for the MURR encompasses decommissioning of the entire facility irrespective of which license or registration authorizes the use of radioactive material. The most recent estimate for the cost of decommissioning of MURR was made in September 2009.

Using the guidance of NUREG 1757, "Consolidated NMSS Decommissioning Guidance," Volume 3, Appendix A, page A-184, the isotope requested above would not require financial assurance plans if possessed in the quantities requested. Thus, it is the assessment of the university that the addition of 20 Ci of cadmium-109 would not have a significant impact on our total decommissioning funding costs.

If you have any additional questions regarding our submittal, please do not hesitate to contact me.

Sincerely,



Ronald J. Dobey, Jr., CHP
Health Physics Manager/RSO

Reviewed and Approved



Ralph Butler, PE
Director

Attachments

(3-2009)
10 CFR 30, 32, 33,
34, 35, 36, 39, and 40

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 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.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.

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

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

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
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

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
612 E. LAMAR BOULEVARD, SUITE 400
ARLINGTON, TX 76011-4125

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 **24-00513-39**
- C. RENEWAL OF LICENSE NUMBER

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

The Curators of the University of Missouri
Attn: Ronald J. Dobey, Jr., CHP
Research Reactor, 1513 Research Park Drive
Columbia, MO 65211

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

University of Missouri
Research Reactor Center
1513 Research Park Drive
Columbia, MO 65211

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Ronald J. Dobey, Jr., CHP, RSO

TELEPHONE NUMBER

573 882-5218

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 **Exempt** 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

Ralph A. Butler, Director

SIGNATURE

Ralph A. Butler

DATE

3/2/2011

FOR NRC USE ONLY

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

Application for Amendment to Materials License
License #24-00513-39
Docket No. 030-32695
University of Missouri
Research Reactor
(MURR)

Item 5: Radioactive Material

Request to add the following isotopes:

<u>Byproduct Material</u>	<u>Chemical/ Physical Form</u>	<u>Maximum Possession</u>
Cd-109	Any	20 Ci

Note: The radioactive material requested above does not exceed the quantities listed in 10 CFR 30.72.

The information requested on financial security is not significantly different than provided in license renewal application dated June 30, 2003 or subsequent cost adjustments. The addition of the requested additional isotope will not have a significant impact on the total cost estimate for the University of Missouri's decommissioning funding plan using the guidance available in NUREG Publication 1757, "Consolidated NMSS Decommissioning Guidance".

A requirement to provide assurance of funds for decommissioning was established for reactor licenses in 10 CFR 50.33 (k)(2). The University of Missouri submitted to the NRC a statement of intent that the University would request appropriation of funds for decommissioning of the University of Missouri-Columbia Research Reactor (MURR) sufficiently in advance of decommissioning to prevent delay of required activities (letter dated June 29, 1990). As required by 10 CFR 50.75 (e)(2)(iv), a detailed cost estimate for decommissioning MURR was included with this statement of intent. In accordance with 10 CFR 50.33 (d), the letter also describes the means of adjusting the cost estimate and associated funding level periodically over the life of the facility. Since reactor licensed radioactive materials and materials licensed radioactive materials are accounted for separately but used in the same laboratory facilities, the detailed cost estimate for the MURR encompasses decommissioning of the entire facility irrespective of which license or registration authorizes the use of radioactive material. The most recent estimate for the cost of decommissioning of MURR was made in September 2009.

Item 6: Purpose for Which Licensed Material Will Be Used

Material requested will be used for research and development as defined in 10 CFR 30.4. The requested isotope addition is meant to cover the research and development phase of the use of Cd-109 in devices that may have applicability to detect materials which are deemed hazardous by the regulations of the Environmental Protection Agency.

Item 7: Individuals Responsible For Radiation Safety

There have been no significant changes in the RSO, management structure, reporting paths or flow of authority between executive management, the Radiation Safety Committee and the RSO since the last amendment; No. 10 dated May 20, 2009.

Item 8: Training for Individuals Working in or Frequenting Restricted Areas

The information requested is not significantly different than provided in the license renewal application submitted June 30, 2003.

Item 9: Facilities and Equipment

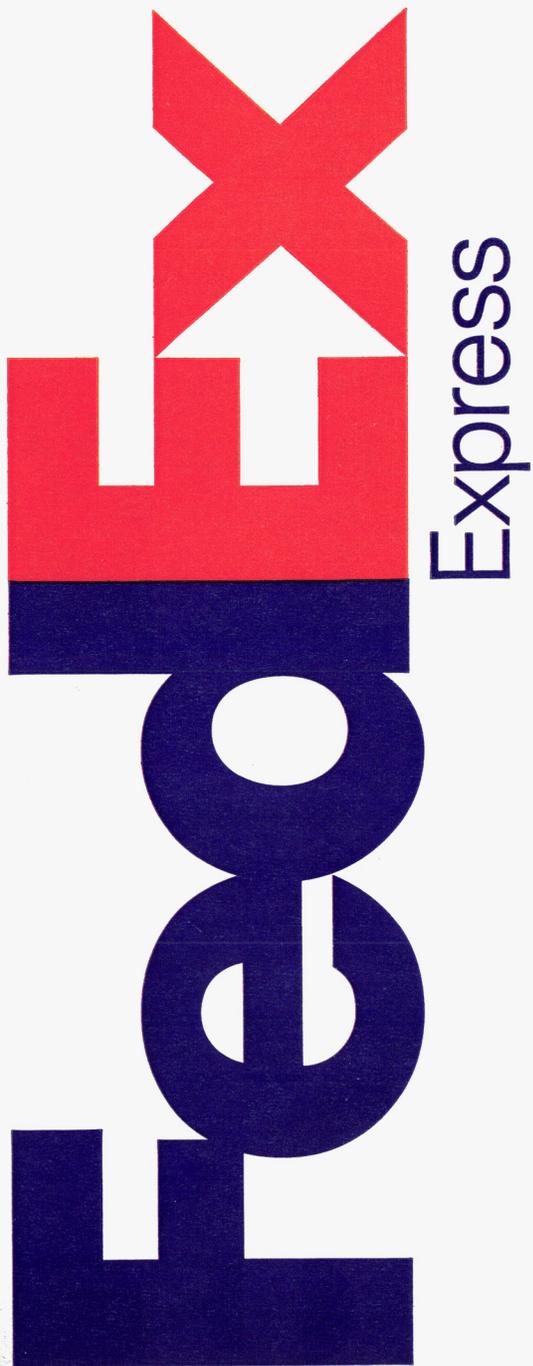
The radioactive material requested will be utilized in laboratory, hot cell and glove box facilities described in the license renewal application submitted June 30, 2003. The Radiation Safety Committee will review and approve any projects, facilities and equipment used with this material.

Item 10: Radiation Safety Program

The information requested is not significantly different than provided in the license renewal application submitted June 30, 2003.

Item 11: Waste Management

The information requested is not significantly different than provided in the license renewal application submitted June 30, 2003.



ORIGIN ID: COUA (573) 882-5311
MIKE KILFOIL
1513 RESEARCH PK DR
COLUMBIA, MD 65211
UNITED STATES US

SHIP DATE: 02MAR11
ACTWGT: 0.2 LB
CAD: 101285576/INET3130
BILL SENDER

TO COLLEEN CASEY
US NRC, REGION III
2423 WARRENVILLE RD STE 210

50811/ANCA/2PFR

LISLE IL 60532

(830) 829-9841
INV:
PO:

REF: RON DOBEY

DEPT: C5012



TRK# 7944 8578 7059
0201

FRI - 04 MAR A1
** 2DAY **

SE BDFA

60532
IL-US ORD

Part # 166297-435 RIT 1/09

The World



Envelope

Align bottom of Peel and Stick Airbill here.