



Department of the Interior  
US Geological Survey  
Box 25046 MS-974  
Denver CO, 80225

August 28, 2015

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington DC 20555

Subj: Response to RAI dated August 18, 2015, regarding R-113 license amendment request (TAC No. ME9424)

Gentlemen:

The attached pages are submitted in response to your Request for Additional Information dated August 18, 2015. Please contact me if you need additional information.

Sincerely,

A handwritten signature in black ink that reads "Tim DeBey". The signature is written in a cursive, flowing style.

Tim DeBey  
USGS Reactor Supervisor

**I declare under penalty of perjury that the foregoing is true and correct.  
Executed on 08/28/2015**

Copy to:  
Vito Nuccio, Reactor Administrator, MS 911  
USGS Reactor Operations Committee

A020  
NLR

Response to RAI dated August 18, 2015 concerning a license amendment to the USGS R-113 research reactor license (TAC No. ME9424)

**QUESTION:**

1. *The storage locations for the source, byproduct and SNM to be transferred from the materials license to the reactor license do not appear to be described in your license amendment application, as supplemented. In your response to Request for Additional Information (RAI) No. 11, by letter dated March 14, 2014 (ADAMS Accession No. ML14083A398), you provided a description of the source, byproduct and SNM that you proposed to be transferred with the license amendment. However, a description of the storage locations and any transportation methods between the storage locations and the locations where the material may be used was not provided.*

*a. Provide a description, which includes all of the licensed materials provided in your response to RAI No. 11 (as referenced above), of the locations where the listed materials are to be stored or used, or justify why no description is needed.*

*b. Describe the transport methods of any source, byproduct and SNM needed between the storage locations and the locations where the material may be used, or justify why no description is needed.*

**RESPONSE:**

1.a. The GSTR licensed area, within which the licensed materials listed in our response to RAI No. 11 are located, are described as follows:

Building 15, rooms 149 through 152 and room 154: These rooms are inside the protected area of the USGS reactor facility and they contain the reactor bay, reactor control room, staff offices, sample handling and processing areas, workshop, storage, reactor equipment and supplies, low level radioactive waste being held for decay, and radiation monitoring equipment. These areas are only accessible by reactor staff members. In addition, access to Building 15 is restricted to a limited number of government employees and contractors.

Building 15, rooms 157 and 158: These rooms comprise the gamma spectroscopy lab that is part of the USGS reactor project. They contain the equipment (detectors, electronic instrumentation, and calibration sources) needed to perform high-precision gamma spectroscopy. Access to these rooms is controlled by the reactor staff.

Building 15, rooms B10, B10B, and B11: These rooms are storage and calibration areas that are part of the USGS reactor project. They contain equipment, supplies, and a gamma calibration facility. Access to these rooms is jointly controlled by the reactor staff and the USGS Radiation Safety Officer.

Building 10, room 2: This room is a storage area that contains components from reactor experiments, spare TRIGA graphite elements, spare equipment and supplies, and low level

radioactive waste that is waiting for transfer to a disposal site. Access to this room is controlled by the reactor staff.

1.b. All locations described in response to question 1.a. are within the controlled area of the Denver Federal Center and on federal government property. Transport of licensed material between the locations described above does not need to comply with DOT and/or IATA regulations since there are no public roads involved in such movements. However, appropriate containment will be used to minimize the potential for spillage or contamination from the materials. Many of the licensed materials listed in our response to RAI No. 11 are orders of magnitude below the associated ALI values in 10 CFR 20 Appendix B, as well as being below the labeling requirements of 10 CFR 30 Appendix B and the 10 CFR 30.18 "Exempt Quantities" values given in 10 CFR 30 Schedule B. All of the listed materials are solids, so no special precautions are needed for the transport of liquids or gases. The labeling requirements of 10 CFR 30 will be followed and appropriate shielding will be used, if needed, to protect personnel as required in 10 CFR 20.

**QUESTION:**

*2. The USGS technical specifications do not define the Title 10 of the Code of Federal Regulations (10 CFR) Part 50 licensed area of the USGS research reactor. As such, it is not clear if the storage locations are within the 10 CFR 50 licensed area of the USGS research reactor. Determine if a USGS technical specification is needed to define the USGS licensed area to include the storage areas for the proposed license material is needed. If a technical specification is needed, propose a technical specification. Otherwise, justify why no change to the current technical specifications is needed.*

**RESPONSE:**

2. Given the lack of definition of the USGS research reactor licensed area, a technical specification is proposed to provide this definition. The proposed technical specification change is an addition to the license definitions in Section A as follows:

**A. Definitions:**

**10. Licensed Area:**

Rooms 149-152, 154, 157, 158, B10, B10B, and B11 of Building 15 and Room 2 of Building 10.