



Department of the Interior  
US Geological Survey  
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Denver CO, 80225

June 26, 2012


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

Gentlemen:

The U.S. Geological Survey is herein requesting an amendment to its research reactor facility license (No. R-113, Docket 50-274) to authorize the receipt, possession, and use of byproduct, source, and special nuclear material on the reactor license, as needed for operation of the reactor and its experimental programs. We request that this amendment be processed as soon as possible.

This request has been reviewed and is endorsed by the USGS Reactor Operations Committee. Correspondence concerning this request should be directed to Tim DeBey, Reactor Supervisor.

Sincerely,

  
Tim DeBey  
USGS Reactor Supervisor

**I declare under penalty of perjury that the foregoing is true and correct.**

**Executed on 06/26/2012**

Copy to:  
Betty Adrian, Reactor Administrator  
USGS Reactor Operations Committee

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**License amendment request to authorize the receipt, possession, and use of byproduct, source, and special nuclear material on the reactor license, as needed for operation of the reactor and its experimental programs.**

The USGS TRIGA Reactor (GSTR) is operated under NRC license R-113 which authorizes the facility to possess all byproduct material that is produced during operation of the reactor. Currently, all non-GSTR produced byproduct and source materials at the facility are authorized by an NRC-issued broad scope license, number 05-01399-08. These non-reactor produced materials are used for research and development purposes. These purposes include calibrations and facility instrument checks, radiation survey meter calibrations, utilization of TRIGA reactor components from other NRC-licensed TRIGA facilities, and target materials for performance of reactor experiments. Byproduct material is routinely produced at the reactor facility and transferred to the broad scope license for use by USGS researchers, and those transfers will continue.

There are several locations in the reactor building (Building 15) at the Denver Federal Center that are authorized for the possession and storage of materials on both NRC licenses. This proposal is to permanently transfer all licensed materials authorized by this amendment from the broad scope license to the R-113 non-power reactor license. Two additional secured rooms in Building 15 and one secured storage room in Building 10 (all are currently authorized locations on the USGS broad scope license) would then become authorized licensed material locations for the reactor license. All of the affected locations are within the Denver Federal Center boundaries. The advantages of this change would be a greatly simplified material inventory, easier audits and inspections for both facility personnel and the auditors/inspectors, and a cost savings of several thousand dollars per year for the facility. This will not result in reduced byproduct material license fees being paid by the USGS to the NRC. Below is the current license specification, followed by the proposed specification.

It is also proposed that the R-113 non-power reactor license authorize the possession of all byproduct material produced and contained in irradiated TRIGA fuel elements that are transferred to the GSTR for further use. This would allow for greatly reduced fuel costs at the GSTR and would improve the long-term outlook for the facility in a climate of a questionable TRIGA fuel supply.

This request for possession of the proposed materials on the R-113 non-power reactor license follows the guidance of NUREG-1537, Part 2, Section 9.5.

Current license:

2.

C. Pursuant to the Act and Title 10, Chapter 1, CFR, Part 30, "Rules of General Applicability to Licensing of Byproduct Material", to receive, possess and use up to 3 curies of sealed americium-beryllium neutron source and a 10-curie sealed

polonium-beryllium neutron source, either of which may be used for reactor startup; and to possess, but not to separate, such byproduct material as may be produced by operation of the reactor.

Proposed license:

2.

C. Pursuant to the Act and Title 10, Chapter 1, CFR, Part 30, "Rules of General Applicability to Licensing of Byproduct Material", in support of the operation of the facility:

1. to receive, possess and use:

a. up to 3 curies of sealed americium-beryllium in a single neutron source for reactor startup use;

b. up to 10-curies of sealed polonium-beryllium in a single neutron source for reactor startup use;

c. up to 10 mCi of byproduct or source material that will be irradiated in the reactor after receipt;

d. byproduct or source material used in reactor-based experiments, calibration of radiation detectors, and reference sources for use in reactor-based analytic techniques;

e. up to 10 mCi of byproduct material contained in TRIGA (non-fuel) reactor parts and components received for use under R-113 from other TRIGA facilities;

2. to receive, possess, and use, but not to separate, any amount of byproduct material contained in TRIGA fuel elements that are transferred to license R-113 after use in other TRIGA facilities;

3. to possess and use, but not to separate, any byproduct material as may be produced by operation of the reactor.