March 23, 2016

Mr. Vito Nuccio
Reactor Administrator
U.S. Geological Survey
Denver Federal Center
PO Box 25046 MS 911
Denver, CO 80225-0046

SUBJECT: U.S. GEOLOGICAL SURVEY - ISSUANCE OF AMENDMENT NO. 12 TO FACILITY OPERATING LICENSE NO. R-113 TO MODIFY THE SOURCE BYPRODUCT AND SPECIAL NUCLEAR MATERIAL POSSESSION LIMITS (TAC NO. ME9424)

Dear Mr. Nuccio:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 12 to Facility Operating License No. R-113 for the U.S. Geological Survey TRIGA Research Reactor. The amendment consists of changes to the facility operating license and technical specifications (TSs) in response to your application dated June 26, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12180A270), as supplemented by letters dated March 14, July 10, and August 25, 2014; June 9, August 28, October 27, and November 17, 2015; and March 11, 2016 (ADAMS Accession Nos.: ML14083A398, ML14205A300, ML14211A586, and ML15162A962, ML15253A485, ML15321A237, ML15323A316, and ML16074A002, respectively). The amendment modifies the facility operating license possession limits of special nuclear, byproduct, and source materials, and adds the definition of licensed area to the TSs.

The safety evaluation supporting Amendment No. 12 is enclosed. If you have any questions, please contact me at (301) 415-0893, or by electronic mail at Geoffrey.Wertz@nrc.gov.

Sincerely,

/RA by Alexander Adams for/

Geoffrey A. Wertz, Project Manager
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-274
License No. R-113

Enclosures:
1. Amendment No. 12
2. Safety Evaluation

cc: w/enclosures: See next page

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Reactor Administrator
U.S. Geological Survey
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Geoffrey A. Wertz, Project Manager
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-274
License No. R-113
Enclosures:
1. Amendment No. 12
2. Safety Evaluation
cc: w/enclosures: See next page

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ADAMS Accession No: ML14294A649 ***concurrence via e-mail** **NRR-088**

OFFICE	NRR/DPR/PRLB:PM*	NRR/DPR/PRLB:LA*	NRR/DLR/RERB:BC*	OGC
NAME	GWertz	NParker	JDanna	MYoung
DATE	6/29/15	11/19/15	2/10/16	3/22/16
OFFICE	NRR/DPR/PRLB:BC	NRR/DPR/PRLB:PM		
NAME	AAdams	GWertz (AAdams for)		
DATE	3/23/16	3/23/16		

OFFICIAL RECORD COPY

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Test, Research, and Training
Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

DOCKET NO. 50-274

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 12
License No. R-113

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for an amendment to Facility Operating License No. R-113 filed by the Department of the Interior, U.S. Geological Survey (the licensee) on June 26, 2012, as supplemented by letters dated March 14, July 10, and August 25, 2014; June 9, August 28, October 27, and November 17, 2015; and March 11, 2016, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the regulations of the Commission as stated in Chapter I, "Nuclear Regulatory Commission," of Title 10 of the *Code of Federal Regulations* (10 CFR);

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance that (i) the activities authorized by this amendment can be conducted without endangering the health and safety of the public and (ii) such activities will be conducted in compliance with the rules and regulations of the Commission;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;

   E. This amendment is issued in accordance with the regulations of the Commission as stated in 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," and all applicable requirements have been satisfied; and

   F. Prior notice of this amendment was not required by 10 CFR 2.105, "Notice of proposed action," and publication of a notice for this amendment is not required by 10 CFR 2.106, "Notice of issuance."

2. Accordingly, the license is amended by changes to paragraphs 2.B., and 2.C., to Facility Operating License No. R-113, which is hereby amended to read as follows:

2.B. Pursuant to the Act and Title 10 CFR Chapter 1, Part 70, "Domestic Licensing of Special Nuclear Material," to receive, possess, and use, but not to separate, in connection with the operation of the facility:

1. up to 9 kilograms of contained uranium-235 enriched to less than 20 percent in the isotope uranium-235 in the form of TRIGA reactor fuel;

2. up to 15 grams of contained uranium-235 of any enrichment in the form of neutron detectors;

3. up to 2 grams of special nuclear material of any enrichment in reactor-based experiments, in sources for calibration of radiation detectors, and reference sources for reactor based programs;

4. such special nuclear material as may be produced by the operation of the facility; and

5. such special nuclear material as may be received in TRIGA fuel elements that are transferred to license R-113 after use in other reactor facilities.

2.C. Pursuant to the Act and Title 10 CFR Chapter 1, Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," in connection with 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 millicuries of byproduct material (atomic numbers 1-88) that will be irradiated in the reactor after receipt;

d. up to 5 curies of byproduct material used in reactor-based experiments, in sources for calibration of radiation detectors, and reference sources for use in reactor-based analytic techniques; and

e. up to 50 millicuries of byproduct material contained in (non-fuel) research reactor parts and components received for use under this facility operating license, No. R-113 from other research reactor facilities.

2. to receive, possess and use, but not to separate, any amount of byproduct material contained in TRIGA fuel elements transferred to USGS facility operating license No. R-113 after use in other reactor facilities;

3. to possess, and use, but not to separate, in connection with the operation of the facility, such byproduct material as may be produced by the operation of the reactor.

3. Accordingly, the license is amended by adding paragraph 2.D., to Facility Operating License No. R-113, which is hereby amended to read as follows:

D. Pursuant to the Act and Title 10 CFR Chapter 1, Part 40, "Domestic Licensing of Source Material," in connection with the operation of the facility, to receive, possess, and use up to 1 millicurie of source material for reactor-based experiments, sources for calibration of detectors, and reference sources for use in reactor-based analytical techniques.

4. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the enclosure to this license amendment, and paragraph 3.B. of Facility Operating License No. R-113 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 12, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

5. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Alexander Adams, Jr., Chief
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Attachment:
Changes to Amend Facility Operating License
and Technical Specifications

Date of Issuance: March 23, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 12

FACILITY OPERATING LICENSE NO. R-113

DOCKET NO. 50-274

Replace the following page of Facility Operating License No. R-113 with the revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Facility Operating License

Remove	Insert
N/A	Page 1a
Page 2	Page 2

Attachment

2. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the USGS:

   A. Pursuant to Section 104c of the Act and Title 10, Chapter 1, CFR, Part 50, “Licensing of Production and Utilization Facilities,” to possess, use and operate the reactor as a utilization facility in accordance with the procedures and limitations described in the application and in this license;

   B. Pursuant to the Act and Title 10 CFR, Chapter 1, Part 70, “Domestic Licensing of Special Nuclear Material,” to receive, possess, and use, but not to separate, in connection with the operation of the facility:

      1. up to 9 kilograms of contained uranium-235 enriched to less than 20 percent in the isotope uranium-235 in the form of TRIGA reactor fuel;

      2. up to 15 grams of contained uranium-235 of any enrichment in the form of neutron detectors;

      3. up to 2 grams of special nuclear material of any enrichment in reactor-based experiments, in sources for calibration of radiation detectors, and reference sources for reactor based programs;

      4. such special nuclear material as may be produced by the operation of the facility; and

      5. such special nuclear material as may be received in TRIGA fuel elements that are transferred to license R-113 after use in other reactor facilities.

   C. Pursuant to the Act and Title 10 CFR Chapter 1, Part 30, “Rules of General Applicability to Domestic Licensing of Byproduct Material,” in connection with 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 millicuries of byproduct material (atomic numbers 1-88) that will be irradiated in the reactor after receipt;

d. up to 5 curies of byproduct material used in reactor-based experiments, in sources for calibration of radiation detectors, and reference sources for use in reactor-based analytic techniques; and

e. up to 50 millicuries of byproduct material contained in (non-fuel) research reactor parts and components received for use under this facility operating license, No. R-113 from other research facilities.

2. to receive, possess, and use, but not to separate, any amount of byproduct material contained in TRIGA fuel elements transferred to USGS Facility Operating License No. R-113 after use in other reactor facilities;

3. to possess and use, but not to separate, in connection with the operation of the facility, such byproduct material as may be produced by the operation of the reactor.

D. Pursuant to the Act and Title 10 CFR, Chapter 1, Part 40, "Domestic Licensing of Source Material," in connection with the operation of the facility, to receive, possess, and use, up to 1 millicurie of source material for reactor-based experiments, sources for calibration of detectors, and reference sources for use in reactor-based analytical techniques.

3. This license shall be deemed to contain and be subject to the conditions specified in Part 20, Section 30.34 of Part 30, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70 of the Commission's regulations; is subject to all applicable provisions of the Act and rules, regulations and orders of the Commission now or hereafter in affect, and is subject to the additional conditions specified or incorporated below:

A. Maximum Power Level

The licensee may operate the reactor at steady-state power levels not in excess of 1000 Kilowatts (thermal) and, in pulse mode, with reactivity insertions not to exceed 2.1 % delta k/k.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 12, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

ATTACHMENT TO LICENSE AMENDMENT NO. 12

FACILITY OPERATING LICENSE NO. R-113

DOCKET NO. 50-274

Replace the following page of Appendix A, “Technical Specifications,” with the revised page. The revised page is identified by amendment number and contains a marginal line indicating the areas of change.

Technical Specifications

Remove	Insert
Page 2	Page 2

3. Pulse Mode

Pulse mode shall mean operation requiring the use of the scrams in Table I and the interlocks in Table II to assure that no more than one rod is pneumatically withdrawn to produce power pulses.

4. Square Wave Mode (SW)

Square wave mode shall mean operation of the reactor with the mode selector switch in the square-wave position requiring use of the scrams in Table I and the interlocks in Table II.

5. Operable

A system or component shall be considered operable when it is capable of performing its intended functions.

6. Experiment

Experiment shall mean: (a) any apparatus, device, or material installed in the core or experimental facilities (except for underwater lights, fuel element storage racks and the like) which is not a normal part of these facilities or (b) any operation to measure reactor parameters or characteristics.

7. Experimental Facilities

Experimental facilities shall mean the rotary specimen rack, vertical tubes, pneumatic transfer system, central thimble, and in-pool irradiation facilities.

7 a. Licensed Area

The licensed area shall be the following areas on the Denver Federal Center:

Building 15, rooms 149 through 152 and room 154

Building 15, rooms 157 and 158

Building 15, rooms B10, B10B, and B11

Building 10, room 2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 12 TO

FACILITY OPERATING LICENSE NO. R-113

DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

DOCKET NO. 50-274

1.0 INTRODUCTION

By letter dated June 26, 2012, the U.S. Geological Survey (USGS or the licensee) requested an amendment to Facility Operating License No. R-113 for the USGS Training, Research, Isotope Production, General Atomics (TRIGA) Research Reactor (GSTR) (copies are available from the U.S. Nuclear Regulatory Commission's (NRC's) public Web site at www.nrc.gov under Agencywide Documents Access and Management System (ADAMS), Accession No. ML12180A270). The requested amendment would allow the licensee to transfer non-GSTR produced byproduct and source material from the USGS Materials License No. 05-01399-08, to USGS GSTR Facility Operating License No. R-113, by the addition of license conditions for source, byproduct and special nuclear material (SNM). Additionally, the licensee requested license conditions that will allow the facility to receive irradiated fuel elements in the future from other TRIGA reactors to replace depleted GSTR fuel elements. The requested amendment would also add the definition of licensed area to the GSTR technical specifications (TSs).

During its review, the NRC staff identified areas where clarification and additional information was needed to continue its review. Requests for additional information (RAIs) were sent to the licensee, by letters dated January 29, and June 12, 2014, and August 18, and September 21, 2015 (ADAMS Accession Nos.: ML13323B380, ML14141A632, ML15226A277, and ML15259A731). The licensee provided its RAI responses to the NRC staff by letters dated March 14, July 10, and August 25, 2014, June 9, August 28, October 27, and November 17, 2015; and March 11, 2016, (ADAMS Accession Nos.: ML14083A398, ML14205A300, ML14211A586, ML15162A962, ML15253A485, ML15321A237, ML15323A316, and ML16074A002, respectively).

2.0 BACKGROUND

The GSTR reactor is a 1000 kilowatt thermal power steady state operation TRIGA pool-type research reactor with pulsing capability. The GSTR uses TRIGA fuel elements and performs experiments that involve the irradiation of SNM, source and byproduct material. SNM means uranium enriched in the isotope uranium-235, uranium-233, or plutonium. Source material means uranium or thorium, or ores containing 0.05, or more, weight percent uranium or thorium, or any combination thereof. Byproduct material, in general, means any material which is produced, or has been made radioactive by exposure to the radiation of a nuclear reactor.

The USGS facility operates with two licenses: 1) Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, "Domestic Licensing of Production and Utilization Facilities," License No. R-113 (hereafter known as the "reactor license"), and, 2) NRC Materials License No.-05-01399-08 (hereafter known as the "materials license"). All GSTR produced byproduct material is authorized under the reactor license and non-GSTR produced materials are authorized by the materials license. The non-GSTR produced materials are used for research development purposes and include calibrations and facility instrument checks, radiation survey meter calibrations, the utilization of TRIGA reactor components from other NRC-licensed TRIGA facilities, and target materials for the performance of reactor experiments. This license amendment would allow these materials to be controlled on the USGS reactor license, thereby, reducing the level of effort necessary for inventory, audit, and inspection. Additionally, a license condition allowing the possession and use of byproduct material contained in irradiated TRIGA fuel elements is sought in preparation for future possession of TRIGA fuel elements from other facilities. Other license conditions are proposed to enhance the facility's ability to conduct experiments. The regulations in 10 CFR 50.52, "Combining licenses," allows the activities of an applicant which would otherwise be licensed severally to be combined in a single license. This allows SNM, source material and byproduct material licenses to be combined into the 10 CFR Part 50 reactor facility license. A detailed review of each change is provided in Section 3.0.

3.0 EVALUATION

3.1 Special Nuclear Material

The regulations in 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," requires title, ownership, possession, use and transfer of SNM to be licensed. The GSTR facility operating license contains conditions for receipt, possession, and use of SNM. Specifically, License Condition 2.B., for the possession of SNM, states:

> B. Pursuant to the Act and Title 10 CFR, Chapter I, Part 70, "Domestic Licensing of Special Nuclear Material," to receive, possess, and use at up to 9.0 kilograms of contained uranium-235 at various enrichments in connection with the operation of the reactor. Without exceeding the foregoing maximum possession limits, the specific categories of maximum limits are as follows:
>
> | Maximum U-235 | % Enrichment | Exempt Status* |
> |---|---|---|
> | (1) 9.0 kg | < 20 % | Exempt 10 CFR 73.6(a) |
> | (2) .015 kg | 93.00 | Not Exempt |
>
> *Material is exempt provided that it meets the requirement for exempt pursuant to the cited provisions of 10 CFR 73.

By letter dated June 26, 2012, as supplemented, the licensee requested the following changes:

1. Change item (1) above to specify that the form is TRIGA fuel elements.

2. Change item (2) above to specify the form as neutron detectors and to increase the enrichment from the current license condition value of 93.00 to any enrichment.

3. Change items (1) and (2) above to remove reference to 10 CFR 73.6(a).

4. Add License Condition 3 which would allow USGS to receive, possess, and use, but not to separate, in connection with the operation of the facility, up to 2 grams of SNM of any enrichment in reactor-based experiments, sources for calibration of radiation detectors, and reference sources for reactor based programs.

5. Add License Condition 4 which would allow possession and use of such special nuclear material as may be produced by the operation of the facility.

6. Add License Condition 5 which would provide that special nuclear material may be received in TRIGA fuel elements that are transferred to license R-113 after use in other reactor facilities.

The licensee, in its letters dated March 14, 2014, and June 9, 2015, revised and reformatted proposed License Condition 2.B as stated below:

> B. Pursuant to the Act and Title 10 CFR, Chapter 1, Part 70, "Domestic Licensing of Special Nuclear Material," to receive, possess, and use, but not to separate, in connection with the operation of the facility:
>
> 1. up to 9 kilograms of contained uranium-235 enriched to less than 20 percent in the isotope uranium-235 in the form of TRIGA reactor fuel;
>
> 2. up to 15 grams of contained uranium-235 of any enrichment in the form of neutron detectors;
>
> 3. up to 2 grams of special nuclear material of any enrichment in reactor-based experiments, in sources for calibration of radiation detectors, and reference sources for reactor based programs;
>
> 4. such special nuclear material as may be produced by the operation of the facility; and
>
> 5. such special nuclear material as may be received in TRIGA fuel elements that are transferred to license R-113 after use in other reactor facilities.

The NRC staff reviewed the proposed changes described above. The licensee's change to License Condition 2.B.(1) (proposed License Condition 2.B.1.), specifies the material form as TRIGA reactor fuel. This change clarifies the description in the existing license condition by

specifying that the material possession limit of 9 kilograms (kgs) applies to TRIGA reactor fuel. Because this change accurately describes and does not alter the current possession enrichment limits for TRIGA fuel, the NRC staff finds the proposed License Condition 2.B.1. to be acceptable.

License Condition 2.B.(2), limits the possession of uranium to .015 kg at an enrichment of 93.00 percent. The licensee proposed to remove the specification on the enrichment. In response to RAI No. 1, by letter dated July 10, 2014, the licensee stated that it was difficult for neutron detector manufacturers to satisfy the level of precision (i.e., 1/100) in the enriched uranium content. Additionally, this specification on the uranium-235 enrichment limited the ability of the facility to perform experiments that could be done by neutron detectors using other levels of uranium-235 enrichment. For example, the licensee stated that detectors with a lower enrichment would provide an enhanced response to fast neutrons. The NRC staff finds that the specification of 93.00 percent enriched uranium-235 is an unnecessary restriction to the availability and use of neutron detectors at the facility. Since the proposed possession limit remains unchanged at 15 grams of uranium-235, varying the enrichment does not affect the characterization of the facility as a Category III facility with SNM of low strategic significance in accordance with the paragraph (1) definition of “Special Nuclear Material of Low Strategic Significance” provided in 10 CFR Part 73, “Physical Protection of Plants and Materials,” Section 73.2. Based on the information described above, the NRC staff finds proposed License Condition 2.B.2. to be acceptable.

USGS license condition 2.B.(1) stated that for SNM with an enrichment less than 20 percent, the material is subject to an exemption stated in 10 CFR 73.6(a). The licensee proposes to remove this reference from the license condition because it is unnecessary to state exemptions provided by regulation in a license condition. As stated in 10 CFR 73.6(e), all SNM at non-power reactors are exempt from the regulations listed in 10 CFR 73.6. The exemption stated in license condition 2.B.(1) was in the GSTR license issued on February 24, 1969. By rulemaking, published in the *Federal Register* on November 28, 1979, [44 FR 68184-68199], 10 CFR 73.6(e) was added and provided an exemption for all SNM at non-power reactors. Because the exemption does not need to be stated in the license, the NRC staff finds this proposed change to be acceptable.

The licensee’s proposed change to add License Condition 2.B.3. will allow possession and use, but not to separate, up to 2 grams of SNM for reactor-based experiments, in sources for calibration of radiation detectors, and reference sources related to reactor operation. In response to RAI No. 2, by letter dated July 10, 2014, the licensee stated that the proposed increase in the possession limit of 2 grams of SNM will allow for reactor experiments, detector calibration, and for calibration of reference sources related to reactor operation. The NRC staff questioned the licensee in RAI No. 4, by letter dated June 12, 2014, concerning the radiological controls on the irradiation of up to 2 grams of SNM. In responses to RAI Nos. 4 and 3, by letters dated July 10, and August 25, 2014, respectively, the licensee stated that the requirements of technical specification (TS) I.9 (restated below) for iodine and strontium would continue to bound experiments. The licensee also stated that a new TS was not needed since the current TS I.9 limit was sufficient, and a safety analysis is performed on all proposed GSTR experiments to ensure the TS I.9 limits are maintained. The proposed experiment is reviewed by the GSTR staff and approved by the Reactor Operations Committee prior to any irradiation of SNM.

Current GSTR TS I.9:

> Each fueled experiment shall be controlled such that the total inventory of iodine isotopes 131 through 135 in the experiment is no greater than 1.5 curies and the maximum strontium-90 inventory is no greater than 5 millicuries.

The NRC staff reviewed the proposed change to add License Condition 2.B.3 and determined that the addition of the license condition will allow GSTR staff to conduct a variety of experiments utilizing SNM. The modest increase in the possession limit to allow 2 grams of SNM of any enrichment does not require any changes to the security plan as the USGS facility will remain a Category III facility consistent with the limits provided in 10 CFR 73.2 for SNM of low strategic significance (i.e., not greater than 1000 grams of uranium-235 enriched greater than 20 percent). TS I.9 limits the generation of iodine and strontium isotopes generated from the irradiation of SNM in reactor-based experiments in the GSTR. TS I.9 helps to ensure that any potential doses associated with an experiment failure involving irradiation of SNM are limited to the values in 10 CFR 20, "Standards for Protection from Radiation." TSs I.1 and I.3 require the facility staff and Reactor Operations Committee, respectively, to review and approve all proposed experiments, thus providing an independent review and oversight of planned experiments prior to their performance. Based on the information provided above, the NRC staff finds the proposed change to add License Condition 2.B.3. to be acceptable.

The licensee's proposed change to add License Condition 2.B.4. to allow the licensee to receive, possess, and use, but not separate, in connection with the operation of the facility, SNM as produced by the operation of the facility. This change was proposed in response to RAI No. 6, by letter dated July 10, 2014, and accounts for material produced by the operation of the reactor. The NRC staff determined that this change corrects an omission in the current license, which did not specifically authorize SNM produced by the operation of the reactor. The NRC staff reviewed the licensee's response and, based on the information provided above, finds the addition of License Condition 2.B.4. to be acceptable.

The licensee's proposed change to add License Condition 2.B.5. to allow SNM that is contained in TRIGA fuel elements that have been used in other reactor facilities, and will be transferred to GSTR for use, will allow the licensee to receive used TRIGA fuel. The licensee indicated that since the manufacture of new TRIGA fuel has (temporarily) ceased, the Department of Energy (DOE) is considering the option of replacing used GSTR fuel with used TRIGA fuel which has been returned to DOE from other TRIGA facilities. License condition 2.B.1 will continue to limit the facility to 9.0 kgs of SNM and thus limit the potential for accumulation of used fuel at the GSTR facility. The licensee proposed this license condition in its letter dated June 9, 2015. The NRC staff reviewed the requested license condition and finds that it properly accounts for SNM that may be contained in TRIGA fuel elements that have undergone irradiation at another facility (i.e., another research reactor). All GSTR license conditions and technical specifications associated with requirements for TRIGA fuel at GSTR remain effective to ensure compliance with regulations for the receipt, possession, and use of TRIGA fuel. Based on the information provided above, the NRC staff finds the addition of License Condition 2.B.5. to be acceptable.

3.2 Byproduct Material

The regulations in 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," require byproduct material to be licensed. The GSTR facility operating license contains license conditions for receipt, possession, and use of byproduct material. Specifically, License Condition 2.C., for the possession of byproduct material, reads as follows:

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

By letter dated June 26, 2012, as supplemented, the licensee requested the following changes:

> C. Pursuant to the Act and Title 10 CFR Chapter 1, Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," in connection with 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 millicuries of byproduct material (atomic numbers 1-88) that will be irradiated in the reactor after receipt;
>
> d. up to 5 curies of byproduct material used in reactor-based experiments, in sources for calibration of radiation detectors, and reference sources for use in reactor-based analytic techniques; and
>
> e. up to 50 millicuries of byproduct material contained in (non-fuel) research reactor parts and components received for use under this facility operating license, No. R-113 from other research facilities.
>
> 2. to receive, possess, and use, but not to separate, any amount of byproduct material contained in TRIGA fuel elements transferred to USGS Facility Operating License No. R-113 after use in other reactor facilities;

3. to possess and use, but not to separate, in connection with the operation of the facility, such byproduct material as may be produced by the operation of the reactor.

The NRC staff reviewed the proposed changes described above. The NRC staff finds that the proposed License Conditions 2.C.1.a. and 2.C.1.b. restate into an alpha-numerical listing, but do not alter, information in the current License Condition 2.C. The reformatting is consistent with the format in recent research reactor renewed licenses. Based on this information, the NRC staff finds the proposed change to add License Conditions 2.C.1.a. and 2.C.1.b. to be acceptable.

The justification and supporting information for proposed License Condition 2.C.1.c. was provided in the licensee's response to RAI No. 1, by letter dated March 14, 2014. The licensee stated that License Condition 2.C.1.c. was needed to authorize the irradiation of target materials used as radiation sources and requiring periodic re-irradiation to regenerate the source activity. In order to be irradiated by the GSTR, the byproduct material within the source needs to be transferred from the user's license to the GSTR reactor license. After irradiation, the byproduct material is transferred back to the user and placed on the user's licensee. The proposed limit of 10 millicuries is sufficient for the GSTR to perform the current and future irradiation activities. The NRC staff reviewed the proposed addition of License Condition 2.C.1.c. and finds that the proposed license condition acceptably describes and controls byproduct material transferred to the GSTR for irradiation. Based on the information provided above, the NRC staff finds the proposed License Condition 2.C.1.c. to be acceptable.

The proposed License Condition 2.C.1.d. involves the transfer of byproduct material under the USGS NRC-issued materials license. For Federal Government agencies such as USGS, the NRC regulates the use of byproduct material in accordance with the regulations in 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material." As stated in 10 CFR 150.10, exemptions for entities in Agreement States do not apply to agencies of the Federal government. The justification and supporting information for proposed License Condition 2.C.1.d. was provided by the licensee in response to RAI No. 5, by letter dated March 14, 2014. The licensee indicated that the byproduct material was used in reactor-based experiments, in sources for calibration of radiation detectors, and reference sources for use in reactor-based analytic techniques. The proposed license condition possession limit of 5 curies of byproduct material encompasses the quantity of byproduct material currently in use at the GSTR under the USGS materials license. The licensee provided a summary of the material in Table 1 in a letter dated March 14, 2014. This material will be transferred from the USGS materials license to the reactor license upon issuance of this license amendment. The NRC staff reviewed the USGS material license (No. 05-01399-08, expiration July 31, 2025, which because it contains security related information, is not publicly available) and the proposed License Condition 2.C.1.d. and finds that the requested quantity of byproduct material is consistent with the limits in the materials license. The proposed License Condition 2.C.1.d acceptably describes and controls the byproduct materials used in reactor-based experiments, calibration of radiation detectors, and reference sources for use in reactor-based analytic techniques. The materials in Table 1 are items being moved from the NRC material license to the reactor license.

The limit of 5 curies will allow the licensee to receive, possess and use byproduct material in addition to the materials listed in Table 1, to account for replacement of decaying sources and additional reference and calibration sources. Based on the information provided above, the NRC staff finds the proposed License Condition 2.C.1.d. to be acceptable.

The justification and supporting information for proposed License Condition 2.C.1.e. was provided in the licensee's response to RAI No. 8, by letter dated March 14, 2014, and updated by letter dated June 9, 2015. The licensee states that the types of non-fuel TRIGA reactor parts to be received at the facility include fuel handling tools, source shields, sample handling apparatus, and sample tubes, and these items may contain activation products. The licensee indicated that the proposed limit of 50 millicuries would provide a sufficient limit for the amount of non-fuel TRIGA reactor parts that would be transferred to the facility. The NRC staff reviewed the licensee's proposed License Condition 2.C.1.e. and finds that it acceptably describes and limits the amount of byproduct material contained in TRIGA non-fuel parts and components. The NRC staff finds that the limit of 50 millicuries is reasonable to allow the licensee to receive TRIGA non-fuel parts and components and provides assurance that the inventory will not continue to accumulate. Based on the information provided above, the NRC staff finds the proposed License Condition 2.C.1.e. to be acceptable.

License Condition 2.C.2. which states, "to receive, possess, and use, but not to separate, any amount of byproduct material contained in TRIGA fuel elements transferred to USGS facility operating license No. R-113 after use in other reactor facilities," was requested by the licensee in its license amendment request letter dated June 26, 2012. The licensee stated that this license condition would allow the licensee to receive irradiated fuel elements from other research reactors for future use at GSTR, and would improve the long-term outlook for fuel supply while TRIGA fuel element manufacture is questionable. The NRC staff reviewed proposed License Condition 2.C.2. for byproduct material contained in TRIGA fuel elements transferred to the GSTR reactor license and finds it acceptable because the receipt, possession and use of any irradiated TRIGA fuel elements received at GSTR would remain limited to 9.0 kg in accordance with License Condition 2.B.(1). Prior to the use of any irradiated TRIGA fuel elements at GSTR, the licensee would be required perform a review to ensure that the requirements in GSTR TSs, Section D, Reactor Core, are maintained. Any changes to the facility as described in the GSTR safety analysis report (SAR), including the use of the TRIGA fuel, would require a review in accordance with the requirements of 10 CFR 50.59, "Changes, tests and experiments," to determine if prior NRC approval of the change is required through a license amendment. Based on the information provided above, the NRC staff finds the proposed License Condition 2.C.2. to be acceptable.

License Condition 2.C.3., which states, "to possess and use, but not to separate, in connection with the operation of the facility, such byproduct material as may be produced by the operation of the reactor," was proposed by the licensee in its application by letter dated June 26, 2012. This license condition was contained in License Condition 2.C of the current GSTR reactor license, and, except for renumbering and adding "in connection with the operation of the facility," is unchanged. The NRC staff reviewed proposed License Condition 2.C.3, which retains the authority to possess byproduct material generated as a result of reactor operation, and finds it acceptable. Based on the information provided above, the NRC staff finds the proposed License Condition 2.C.3. to be acceptable.

3.3 Source Material

The regulations in 10 CFR Part 40 "Domestic Licensing of Source Material," require source material to be licensed. Proposed License Condition 2.D., states:

> D. Pursuant to the Act and Title 10 CFR, Chapter 1, Part 40, "Domestic Licensing of Source Material," in connection with the operation of the facility, to receive, possess, and use, up to 1 millicurie of source material for reactor-based experiments, sources for calibration of detectors, and reference sources for use in reactor-based analytical techniques.

License Condition 2.D., was proposed by the licensee in response to RAI No. 1, by letter dated March 14, 2014, and is supported by additional information provided in its responses to RAIs Nos. 2 and 5 by letter dated March 14, 2014. The licensee stated in its RAI response that this license condition was needed to support the irradiation of source material involving research on fission products, using uranium or thorium. The existing reactor license did not contain a license condition associated with source material. The basis for the 10 millicurie limit of source material, provided by the licensee in its response to RAI No. 2, was that it would allow for the receipt of sufficient quantities of natural uranium and thorium material for reactor-based experiments. Based on the specific activity of natural uranium and thorium, the license condition limit of 10 millicuries would allow approximately 10 kgs of both natural uranium and thorium (20 kgs total). The licensee indicated that its samples would be approximately 100 grams, so the 10 millicurie limit would allow for approximately 100 samples. The NRC staff reviewed proposed License Condition 2.D. for GSTR to receive, possess, and use, up to 10 millicuries of source material for reactor-based experiments, calibration of detectors, and reference sources for use in reactor-based analytical techniques, and questioned the licensee's need for 10 millicuries of source material. The NRC staff discussed this limit with the GSTR Director, by telephone on September 30, 2014, who acknowledged that the 10 millicurie limit was more than needed for routine operation. By letter dated March 11, 2016, the licensee proposed a revised license condition limit of 1 millicurie. The NRC staff reviewed the revised limit on proposed License Condition 2.D., and finds the 1 millicurie limit on source material to be reasonable to allow the licensee to perform experiments while providing an effective limit to ensure a minimal amount of source material. Based on the information provided above, the NRC staff finds the proposed License Condition 2.D. acceptable.

3.4 Control of Licensed Material

In its letter dated March 14, 2014, the licensee stated that the proposed changes to the license conditions to control licensed materials would not require any changes to the GSTR TSs, and any changes to the facility (e.g., receipt of irradiated fuel) would be reviewed against the requirements in 10 CFR 50.59. The NRC staff reviewed the current GSTR TSs, performed a site visit on August 4, 2015, toured the licensee's material use and storage areas, and determined that additional information was needed to clarify the location and control requirements for the licensed material. RAI's were sent by letters dated August 18, and September 21, 2015.

In its RAI responses, by letter dated August 28, 2015, the licensee provided the following description of the licensed areas that would provide the storage and access controls for the licensed material: Building 15, rooms 149 through 152, and room 154, are associated with the reactor, are contained within the protected area of the USGS reactor facility and only accessible by reactor staff members; Building 15, rooms 157 and 158, contain the gamma spectroscopy laboratory and access is controlled by the reactor staff; Building 15, rooms B10, B10B, and B11 are for storage and calibration and access is controlled by reactor staff and the USGS Radiation Safety Officer; and Building 10, room 2 is a storage area for reactor components and low level radioactive waste awaiting transfer to a disposal site, and access is controlled by reactor staff. These areas are the current storage areas for the material. Any transfer or movement of material within these areas will remain secured within the protected area of GSTR.

By letter dated October 27, 2015, the license provided a list of licensed material and its associated physical storage locations, which is reproduced below to match the proposed license conditions:

Proposed License Condition	Physical Location
2.B.1 through B.5 – SNM	Building 15, Room 149
2.C.1.a and 1.b – neutron startup source	Building 15, Room 149
2.C.1.c through 1.e – byproduct material	Building 15, Rooms 149-152, 154, 157, B10, B10B, and B11, and Building 10, room 2.
2.C.2 – byproduct material in TRIGA fuel	Building 15, Room 149
2.C.3 – byproduct material	Building 15, Rooms 149-152, 154, 157, B10, B10B, and B11, and Building 10, room 2.
2.D.1 – source material	Building 15, Rooms 149-152, 154, 157, B10, B10B, and B11, and Building 10, room 2.

3.4.1 Technical Specification

In its RAI response, by letters dated August 28, October 27, and November 17, 2015, the licensee proposed to add a new definition to the TS, TS 7 a., “Licensed Area,” as follows:

7 a. Licensed Area

The licensed area shall be the following areas on the Denver Federal Center:

Building 15, rooms 149 through 152 and room 154

Building 15, rooms 157 and 158

Building 15, rooms B10, B10B, and B11

Building 10, room 2

The licensee explained, as described in its response to RAI No. 2, by letter dated October 27, 2015, that the definition would provide a more restrictive location requirement than currently contained in the USGS byproduct license for licensed material used and stored at the

Denver Federal Center. These locations are accessible only by reactor staff or authorized users of the licensed radioactive material under the USGS broad scope material license. The facility will continue to follow the radiation safety requirements in 10 CFR Part 20, "Standards for Protection Against Radiation," for all material added to the reactor license, as provided in its SAR, Chapter 11, "Radiation Protection Program and Waste Management."

The NRC staff reviewed the proposed TS definition 7.a., and finds that is provides specified locations for the use and storage of license material at the GSTR facility. The NRC staff toured these locations (except Building 10) and observed that proper radiological safety, in accordance with the GSTR Reactor Operations Manual Section 8, "Radiation Protection Program," personnel access, and material controls were active and appeared effective. Based on its review, the NRC finds that the proposed GSTR TS 7.a., acceptable.

3.5 Other Plans and Programs

During its review, the NRC staff noted that the licensee's request did not indicate whether the Physical Security Plan, Emergency Plan, or the Radiation Protection Program had been reviewed, or if any changes were necessary as a result of the proposed license amendment. The NRC staff requested, in RAI No. 9, by letter dated January 29, 2014, that the licensee indicate if any changes were necessary to the Physical Security Plan, Emergency Plan or Radiation Protection Program.

3.5.1 Emergency Plan

In its response by letter dated March 14, 2014, the licensee stated that there were no changes needed to the Emergency Plan as a result of the proposed license amendment. The NRC staff reviewed the effect of the proposed license condition changes on the GSTR Emergency Plan, noting that the Emergency Plan was also recently reviewed by the NRC staff as part of the licensee's application for renewal of the facility operating license. The license renewal review by NRC staff concluded that the Emergency Plan, Revision 14, was acceptable, by letter dated July 9, 2014 (ADAMS Accession No. ML14183A425). The NRC staff reviewed the proposed license condition changes and finds that the minor increase in the material possession limits is acceptable because it does not result in any changes to the facility, or to the categorization of the facility as a Category III facility in accordance with the definition in 10 CFR Part 73. The NRC staff finds that no changes to the Emergency Plan are needed because the material types and amounts involved in the proposed license conditions are already properly controlled by the licensee, using existing procedures. Based on the information provided above, the NRC staff concludes that no changes are necessary to the GSTR Emergency Plan as a result of this proposed amendment.

3.5.2 Security Plan

In its response by letter dated March 14, 2014, the licensee stated that no changes were needed to the Physical Security Plan based on the proposed license condition changes. The NRC staff reviewed the proposed changes and finds that the proposed changes involve a very small increase in the quantity of SNM (2 grams of SNM of any enrichment). In addition, any SNM received as fuel to be used in GSTR would remain within the license condition limits as specified. As such, the facility remains a Category III facility possessing SNM of low strategic

significance, and continues to meet the requirements of 10 CFR 73.67(f), “Fixed site requirements for special nuclear material of low strategic significance.” Based on its review of the proposed license conditions, the NRC staff finds that changes to the GSTR Physical Security Plan are not required as a result of the proposed license condition changes.

3.5.3 Radiation Protection Program

In its response to RAI No. 9, by letter dated March 14, 2014, the licensee stated that two new sections, 8.3.4, “Material Leak Testing,” and 8.3.5, “Material Inventory,” would be added to the GSTR Radiation Protection Program. Section 8.3.4 would provide requirements for material leak testing of sealed sources that are not byproduct material produced by the reactor, and Section 8.4.5 would provide requirements for material inventory of licensed sources that are not byproduct material produced by the reactor, and ensure that current requirements associated with the materials license are maintained when the materials are subsequently transferred to the reactor license. By letter dated March 11, 2016, the licensee indicated that the proposed new sections, 8.3.4 and 8.3.5, had been added GSTR Radiation Protection Program. The NRC staff reviewed the Radiation Protection Program, as provided in the license renewal application SAR, Chapter 11 (ADAMS Accession No. ML092120136) and, based on the proposed license conditions, finds it acceptable to continue to ensure proper radiological control and protection of licensed material. The proposed changes to the GSTR Radiation Protection Program, which include leak testing, and material inventory, help to provide assurance that sealed sources remain sealed, and that licensed sources are properly controlled through the inventory methods described in the Radiation Protection Program. Based on its review of the Radiation Protection Program, including the two changes described above, the NRC staff finds that the revised GSTR Radiation Protection Program is acceptable.

Based on the information identified by the licensee, as described above, the NRC staff asked the licensee to review its NRC Materials License No. 05-01399-08 to determine if there were any other materials license requirements that needed to be reflected in GSTR implementing procedures or other facility requirements. In its response to RAI No. 3, by letter dated October 27, 2015, the licensee indicated that it had reviewed its materials license and did not find any additional license conditions that needed to be incorporated into their procedures or other license requirements. The NRC staff has reviewed the NRC Materials License No. 05-01399-08 and finds the licensee included the requirements from the materials license that need to be incorporated into GSTR implementing procedures. Based on the information provided above, the NRC staff concludes the two materials sections being added to the GSTR Radiation Protection Program include appropriate requirements and will help to ensure that the license maintains adequate and effective sealed source leak testing and material inventory.

3.6 Conclusion

The NRC staff reviewed the GSTR license amendment application, as supplemented, to allow the transfer non-GSTR produced byproduct and source material from the USGS Materials License No. 05-01399-08 to GSTR Facility Operating License No. R-113, by the addition of proposed license conditions for source, byproduct, and SNM, and to allow the facility to receive irradiated fuel elements from other TRIGA reactors to replace depleted GSTR fuel elements. The NRC staff also reviewed the proposed TS 7.a. definition for Licensed Area.

The NRC staff also reviewed the GSTR responses to the NRC RAIs, and the potential effects of the proposed license condition changes on the GSTR Physical Security Plan, the Emergency Plan, the Radiation Protection Program and the SAR.

On the basis of its review, the NRC staff has determined that adherence to the proposed license conditions and TSs will help ensure that the licensee's use of licensed material will be done safely, and without adverse consequences to the workers, members of the public or the environment. Based on the information provided above, the NRC staff concludes that the proposed license conditions and TS changes are acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

The NRC's regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) 51.22(a) states, in part, that the issuance of an amendment to a 10 CFR Part 50 license is eligible for a categorical exclusion if the Commission has declared that the action does not individually or cumulatively have a significant effect on the human environment. This amendment involves changes to requirements with respect to the use of facility components located within the restricted area (protected area boundary) as defined in 10 CFR Part 20. The NRC staff has reviewed the proposed license amendment and finds that the requested amendment satisfies the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). The scope of the proposed amendment encompasses modifying the facility operating license possession limits of special nuclear, byproduct, and source materials, and adds the definition of licensed area to the TSs. More specifically, the requested amendment would allow the licensee to transfer non-GSTR produced byproduct and source material from the USGS Materials License No. 05-01399-08, to GSTR Facility Operating License No. R-113, by the addition of license conditions for source, byproduct and SNM. No physical changes to the licensed facilities are required.

As stated in 10 CFR 51.22(c)(9), the issuance of the amendment is subject to a categorical exclusion if it meets the requirements below:

(i) *The amendment involves no significant hazards consideration;* [10 CFR 51.22(c)(9)(i)]

The NRC's regulations in 10 CFR 50.92(c) states that a license amendment involves no significant hazards consideration if operation of the facility, in accordance with the proposed amendment, would not:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or [10 CFR 50.92(c)(1)]

(2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or [10 CFR 50.92(c)(2)]

(3) Involve a significant reduction in a margin of safety [10 CFR 50.92(c)(3)]

These proposed changes modify the facility operating license possession limits of SNM, byproduct material, and source material, to allow the licensed material to be transferred from the current materials license to the proposed amended reactor license, and adds a definition of the licensed area to the GSTR TSs. There are no changes to the facility as

described in the SAR, nor to the amounts or types of licensed material allowed at the facility. Because there are no changes to the SAR or to the TSs, other than the addition of the definition of licensed area, the proposed amendment does not alter or change any of the accident scenarios described in the SAR. USGS TSs that provide limits to control the operation of the reactor and the amount of material which can be irradiated remain unchanged by this proposed amendment. USGS TSs that help ensure that the assumptions used in the safety analyses provided in the USGS SAR are maintained. Because, TS I.9 limits the amount of iodine 131 through 135 which can be produced by experiment, the radiological consequence of any postulated accident remains unchanged. The minor increase in enrichment for 2 grams of SNM, from 93 percent to any enrichment, has no discernible effect on any postulated accident, and does not reduce a margin of safety. Based on the above, the NRC staff concludes that there is no change in probability or consequence of any previously evaluated accident, nor is a new or different type of accident created, nor is there in any reduction in the margin of safety. Based on the above, the NRC staff concludes that this amendment involves no significant hazards consideration.

(ii) *There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; and* [10 CFR 51.22(c)(9)(ii)]

The proposed changes to the license conditions include a minor increase (2 grams SNM of any enrichment), but does not alter any existing TS requirements used to control the release of effluent offsite. GSTR TS B.3 limits the release of Argon-41 to a maximum of 4.8E-6 microcuries per milliliter per year, and GSTR TS B.4 limits all other radionuclides to the requirements provided in 10 CFR Part 20, “Standards for Protection Against Radiation.” Based on the information provided above, the NRC staff concludes that there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

(iii) *There is no significant increase in individual or cumulative occupational radiation exposure.* [10 CFR 51.22(c)(9)(iii)]

These proposed changes modify the facility operating license possession limits of SNM, byproduct material, and source material, to allow the licensed material to be transferred from the materials license to the reactor license, and adds the definition of the licensed area to the GSTR TSs. There is no substantive change, with respect to the type or amounts of licensed material which are currently authorized to be handled by the GSTR staff, as it is currently controlled under the materials license. GSTR personnel handle source, byproduct and special nuclear material through the use of controls and procedures approved in accordance with the Radiation Protection Program that include provisions to prevent any significant increase in individual or cumulative occupation radiation exposure as a result of the proposed amendment. Therefore, the NRC staff finds that there is no significant increase in individual or cumulative occupational radiation exposure caused by the issuance of this amendment.

The proposed license amendment does not involve a significant increase in the probability or consequences of accidents previously evaluated, create the possibility of a new kind of accident or a different kind of accident from any accident previously evaluated, or involve a significant reduction in a margin of safety, or create the need to revise the Emergency or Security Plans. In addition, the NRC staff has determined that there would be no significant impacts to biota, water resources, historic properties, cultural resources, or socioeconomic conditions in the region. As such, there are no extraordinary circumstances present that would preclude reliance on this categorical exclusion. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The NRC staff concludes, on the basis of the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed activities; and (2) such activities will be conducted in compliance with the Commission's regulations; and (3), the issuance of this amendment will not be inimical to the common defense and security or the health and safety of the public.

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Date: March 23, 2016