

**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 50-274; NRC-2015-0284]**

**United States Department of the Interior**

**United States Geological Survey TRIGA Research Reactor**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** License renewal; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) issued a renewal of Facility Operating License No. R-113, held by the United States Geological Survey (USGS or the licensee), for the continued operation of its USGS Training, Research, Isotope Production, General Atomics (TRIGA) research reactor (GSTR or the reactor) at a steady-state power level of 1.0 megawatt (MW) and a pulse power level as provided in the licensee's Technical Specifications, for an additional 20 years. The GSTR facility is located on the property of the Denver Federal Center in Lakewood, Colorado.

**DATE:** The operating license renewal No. R-113 is effective on October 14, 2016.

**ADDRESSES:** Please refer to Docket ID **NRC-2015-0284** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2015-0284**. Address questions about NRC dockets to Carol Gallagher;

telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search.](#)" For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The ADAMS accession number for each document referenced (if it available in ADAMS) is provided the first time that a document is referenced. In addition, for the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Geoffrey A. Wertz, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-0893; e-mail: [Geoffrey.Wertz@nrc.gov](mailto:Geoffrey.Wertz@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Discussion**

The NRC has issued renewed Facility Operating License No. R-113, held by the USGS, which authorizes continued operation of the USGS GSTR, located in the Denver Federal Center

in Lakewood, Colorado. The GSTR is heterogeneous pool-type, natural convection, light-water cooled, and shielded TRIGA reactor. The GSTR is licensed to operate at a steady-state power level of 1,000 kilowatts thermal power and to pulse the reactor with a maximum reactivity insertion of \$3.00. The renewed Facility Operating License No. R-113 will expire 20 years from its date of issuance.

The renewed facility operating license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in chapter I of title 10 of the *Code of Federal Regulations*, and sets forth those findings in the renewed facility operating license. The NRC afforded an opportunity for hearing in the Notice of Opportunity for Hearing published in the *Federal Register* on February 5, 2016 (81 FR 6302). The NRC received no request for a hearing or petition for leave to intervene following the notice.

The NRC staff prepared a safety evaluation report for the renewal of Facility Operating License No. R-113 and concluded, based on that evaluation, that the licensee can continue to operate the facility without endangering the health and safety of the public. The NRC staff also prepared an Environmental Assessment and Finding of No Significant Impact for the renewal of the facility operating license, noticed in the *Federal Register* on June 14, 2016 (81 FR 38739), and concluded that renewal of the facility operating license will not have a significant impact on the quality of the human environment.

## **II. Availability of Documents**

The documents identified in the following table are available to interested persons as indicated.

<b>Document</b>	<b>ADAMS Accession No.</b>
U.S. Geological Survey – Revised Safety Analysis Report, Technical Specifications, and Environmental Report to Support License Renewal (redacted version), dated January 5, 2009 (redacted version)	ML092120136
U.S. Geological Survey - TRIGA Reactor Response to the RAI Concerning R-113 License Renewal, dated November 24, 2010	ML103340090
U.S. Geological Survey - Response to Letter of February 1, 2011 Concerning R-113 License Renewal, dated February 11, 2011	ML110480046
U.S. Geological Survey - Response to Questions 23.1, 23.2, and 23.3 of the Referenced RAI, dated March 28, 2011	ML110950059
U.S. Geological Survey – Response to Questions 22.1, 22.2, 25.1, 25.2, 25.3, 25.4, and 25.6 of the Referenced RAI, dated May 12, 2011	ML11138A027
U.S. Geological Survey - Response to Request for Additional Information for Questions 17.1 and 17.2, dated June 29, 2011	ML11181A305
U.S. Geological Survey - Response to Question 2 of the Referenced RAI, dated July 27, 2011	ML11214A091
U.S. Geological Survey - Response to Question 1 of the Referenced RAI, dated August 30, 2011	ML112500522
U.S. Geological Survey - Response to Request for Additional Information to Question 20, dated September 26, 2011	ML11277A013
U.S. Geological Survey TRIGA Reactor - Response to Question 6 of the Referenced RAI, dated October 31, 2011	ML11314A106
U.S. Geological Survey – Response to NRC Request for Additional Information Questions 7 and 8, License Renewal, dated November 30, 2011 (redacted version)	ML113460014
U.S. Geological Survey – Licensee Response to NRC Request for Additional Information Question 15.3, dated January 3, 2012 (redacted version)	ML120240003
U.S. Geological Survey TRIGA Reactor – Response to Question 15.2 of the Request for Additional Information from September 29, 2010, letter, dated January 27, 2012	ML12068A138
U.S. Geological Survey TRIGA Reactor (GSTR) – Response to Question 18 of a Request for Additional Information dated September 29, 2010, letter, dated January 27, 2012	ML12039A173
U.S. Geological Survey TRIGA Reactor - Response to Request for Additional Information to Question 14, dated March 28, 2012	ML12100A097
U.S. Geological Survey TRIGA Reactor – Response to Question 16 of the Referenced RAI, dated April 27, 2012	ML12128A429

U.S. Geological Survey, Responses to Questions 26 and 27 of the Referenced RAI, dated May 18, 2012	ML12151A407
U.S. Geological Survey – Response to Request for Additional Information (RAI) Question 14, dated May 31, 2012	ML12160A064
U.S. Geological Survey TRIGA Reactor – Response to Question 3 of the Referenced RAI, dated June 29, 2012	ML12200A055
U.S. Geological Survey TRIGA Reactor - Response to Question 21 of the Referenced RAI dated September 29, 2010, letter, dated July 31, 2012	ML12220A525
U.S. Geological Survey - Responses to Questions 9, 10, 11, 12, 15.1, 23.4, 24, and 25.5; Along with a Corrected Copy of the Proposed Technical Specifications (Chapter 14) of the SAR, dated August 30, 2012	ML12251A231
U.S. Geological Survey – Redacted - Response to NRC Request for Additional Information dated October 2, 2012, letter, dated November 16, 2012	ML12334A001
U.S. Geological Survey – Responses to NRC Request for Additional Information dated October 2, 2012 and Telephone Conference, dated December 20, 2012, letter, dated February 8, 2013 (redacted version)	ML13052A179
U.S. Geological Survey –Responses to RAIs, Follow-up Safety Analysis responses from questions of phone conference conducted on March 21, 2013, dated May 17, 2013 (redacted version)	ML13162A662
Follow-up Safety Analysis Responses dated July 15, 2013, letter, dated October 31, 2013	ML13311A047
US Geological Survey TRIGA Reactor (GSTR), Responses to Reactor Operator Requalification Questions, dated February 19, 2014	ML14070A040
Submission of Revised Technical Specifications, Chapter 14, November 3, 2014	ML14325A646
U.S. Geological Survey TRIGA Reactor –Responses to RAI Questions 15.3 and 28, dated November 24, 2014 (redacted version)	ML14338A196

Revision of Proposed Technical Specifications, September 8, 2015	ML15261A042
U.S. Geological Survey – Responses to RAI Questions 1a, 1b, and 1c, dated January 22, 2016	ML16042A575
U.S. Geological Survey – , Response to Request for Additional Information for License Renewal, dated April 1, 2016 (redacted version)	ML16110A008
U.S. Geological Survey – Responses to RAI questions, dated September 12, 2016	ML16277A216
U.S. Geological Survey – Responses to Email Questions from Mr. Wertz date September 10, 2016, dated September 22, 2016	ML16273A304

Dated at Rockville, Maryland, this 17<sup>th</sup> day of October, 2016.

For the Nuclear Regulatory Commission

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