

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50-089 and 50-163; NRC-2021-0196]

**Termination of Operating Licenses for the
General Atomics TRIGA Reactor Facility**

AGENCY: Nuclear Regulatory Commission.

ACTION: License termination; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is providing notice of the termination of Facility Operating License No. R-38 and Facility Operating License No. R- 67 for the General Atomics (GA; the licensee) TRIGA Reactor Facility in San Diego, California, where the Mark I and Mark F non power research reactors are located. The NRC has terminated the licenses for the decommissioned GA TRIGA Reactor Facility and has released the site for unrestricted use.

DATES: Notice of termination of Facility Operating License No. R-38 and Facility Operating License No. R-67 was issued on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Please refer to Docket ID **NRC-2021-0196** 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 Website:** Go to <https://www.regulations.gov> and search for Docket ID **NRC-2021-0196**. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: Stacy.Schumann@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 <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, 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 email to PDR.Resource@nrc.gov. 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, by appointment, at the NRC’s PDR, Room P1 B35, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8:00 a.m. and 4:00 p.m. (ET), Monday through Friday, except Federal holidays

FOR FURTHER INFORMATION CONTACT: Marlayna Doell, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-3178; email: Marlayna.Doell@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Background

The GA TRIGA Reactor Facility in San Diego, California, is located on the Torrey Pines Mesa within the larger General Atomics campus. The TRIGA Mark I was the initial prototype TRIGA reactor, achieved initial criticality on May 3, 1958, and was in continuous operation until late 1997. On October 29, 1997, the TRIGA Mark I license (Facility Operating License No. R-38) was amended to possession only. The TRIGA Mark F achieved initial criticality on July 2, 1960 and was in continuous operation until March 22, 1995. The TRIGA Mark F license (Facility Operating License No. R-67) was

amended to possession only in 1995. In 2010, all irradiated fuel elements from the TRIGA reactors located on the Torrey Pines Mesa were shipped to an authorized off-site storage facility at the Idaho National Laboratory.

II. Discussion

By letter dated April 18, 1997, as supplemented by letters dated November 20, 1998, January 28 and 29, February 3, April 22, May 3 and 12, and June 15, 16, and 22, 1999, GA submitted a request to the NRC to approve the TRIGA Reactor Facility Decommissioning Plan (DP). The NRC approved the GA DP by Amendment No. 36 to Facility Operating License No. R-38 and Amendment No. 45 to Facility Operating License No. R-67, dated August 12, 1999.

In February 2020, GA submitted Revision 2 of the “TRIGA Reactor Facility Final Status Survey Plan”, which the NRC staff determined was consistent with the guidance and methodology in NUREG-1575, “Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM),” and NUREG-1757, “Consolidated Decommissioning Guidance.” The licensee’s decommissioning activities included decontamination, dismantlement, and demolition of various systems, structures, and components followed by MARSSIM-based final status surveys (FSS).

The FSS was performed to demonstrate that the residual radioactivity remaining at the GA TRIGA Reactor Facility site satisfies the NRC’s release criteria in section 20.1402 of title 10 of the *Code of Federal Regulations* (10 CFR), “Radiological criteria for unrestricted use,” which are (1) an annual dose limit of less than 25 millirem per year Total Effective Dose Equivalent to an average member of the critical group (i.e., a member of the public) and (2) the residual radioactivity has been reduced to levels that are as low as reasonably achievable.

By letter dated December 14, 2020, GA submitted the FSS Report for the TRIGA Reactor Facility and requested the termination of Facility Operating License No. R-38 and Facility Operating License No. R-67. The NRC staff reviewed the FSS Report, which states that the criteria for license termination set forth in the GA licenses, and as established in the previously submitted DP and FSS Plan, have been satisfied. Supplemental information was provided in emails from the licensee dated February 26 and May 18, 2021, which addressed additional questions and items requiring clarification that were provided to the licensee by the NRC staff during the review of the FSS Report.

The GA FSS Report and request to terminate the TRIGA Reactor Facility licenses, the NRC evaluation supporting the license termination decision, and a collection of decommissioning and license termination information, including the GA DP and associated NRC safety evaluation, as well as Revision 1 of the GA FSS Plan, are provided in the “Availability of Documents” table in this notice.

Throughout the decommissioning process, inspectors from the NRC’s Region IV office in Arlington, Texas, conducted routine safety inspections at the GA TRIGA Reactor Facility, as documented in the following NRC Inspection Reports (IRs), which took place during and after removal of the TRIGA irradiated fuel elements in 2010:

IR 50-163/2010-01; 50-89/2010-01, IR 50-163/2012-01; 50-89/2012-01, IR 50-163/2013-01; 50-89/2013-01, IR 50-163/2015-01; 50-89/2015-01, IR 50-163/2018-01; 50-89/2018-01, IR 50-163/2019-01; 50-89/2019-01, and IR 50-163/2020-01; 50-89/2020-01.

The inspections consisted of observations by the NRC inspectors, interviews with GA and contractor personnel, confirmatory measurements, collection of soil samples, and a review of decommissioning work plans and work instructions. The NRC

inspections also verified that radioactive waste associated with the decommissioning project had been appropriately shipped offsite and that the decommissioning and FSS activities were being conducted safely and in accordance with the appropriate regulatory requirements, licensee commitments, and the NRC-approved GA DP. No health or safety concerns were identified during the NRC inspections.

During the period of August 5-8, 2019, the Oak Ridge Institute for Science and Education (ORISE) performed confirmatory surveys in support of the GA FSS and decommissioning activities, which included gamma surface scans, gamma direct measurements, alpha-plus-beta scans, alpha-plus-beta direct measurements, smear sampling, and soil/volumetric sampling within Building G21 and associated land areas, as applicable. The areas investigated included the following survey units: Mark I reactor pit, Mark F reactor pit and canal, Mark I reactor room (floor and lower walls), Mark F reactor room (floors and lower walls), the soil lab, mezzanine 1, mezzanine 2, TRIGA waste yard, TRIGA front yard, TRIGA back yard, and room 112, as well as a small section of the TRIGA Reactor Facility roof. ORISE provided the results of the confirmatory survey in a report dated November 26, 2019. The ORISE survey data support the conclusion that the residual radioactivity levels satisfy the criteria for license termination set forth in the GA licenses, and as established in the previously submitted DP and FSS Plan.

Based on observations during the NRC inspections and ORISE confirmatory survey activities, decommissioning activities have been carried out by GA in accordance with the approved TRIGA Reactor Facility DP. Additionally, the NRC staff evaluated the licensee's FSS Report and the results of the independent confirmatory survey conducted by ORISE. Based on the NRC staff's evaluation of the GA FSS Report sampling and scanning data, NRC staff inspections, ORISE confirmatory analyses, and comparison to

the TRIGA Reactor Facility DP and FSS Plan criteria, the NRC staff concludes that the GA TRIGA Reactor Facility decommissioning has been performed and completed in accordance with the approved DP, and that the facility and site are suitable for unrestricted release in accordance with the radiological criteria for license termination in 10 CFR part 20, subpart E, "Radiological Criteria for License Termination."

Therefore, pursuant to 10 CFR 50.82(b)(6), Facility Operating License No. R-38 and Facility Operating License No. R-67 are terminated.

III. Availability of Documents

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

DOCUMENT	ADAMS ACCESSION NO.
GA Final Status Survey Report and Request to Terminate License Nos. R-38 and R-67	ML21012A268 (Package)
NRC Approval of License Termination Based on the Final Status Survey Report and Supporting Information	ML21281A171
GA TRIGA Reactor Facility Final Status Survey Plan, Revision 2	ML20049A039
Supplemental Information Related to the License Termination Request	ML21246A250 (Package)
NUREG-1575, "Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM)"	ML003761445
NUREG-1757, "Consolidated Decommissioning Guidance," Volume 1	ML063000243
NUREG-1757, "Consolidated Decommissioning Guidance," Volume 2	ML063000252
IR 50 163/2010-01; 50 89/2010-01	ML103060034
IR 50 163/2012-01; 50 89/2012 01	ML12321A127
IR 50 163/2013-01; 50 89/2013-01	ML13338A864
IR 50 163/2015-01; 50 89/2015-01	ML15328A527
IR 50 163/2018-01; 50 89/2018-01	ML18319A137
IR 50 163/2019-01; 50 89/2019-01	ML19247C512

IR 50 163/2020-01; 50 89/2020-01	ML20090B701
Independent Confirmatory Survey Summary and Results for the General Atomics TRIGA Reactor Facility	ML19337D382

Dated: December 8, 2021.

For the Nuclear Regulatory Commission.

/RA/

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