

April 17, 2000

Mr. J. Edwards, Vice President  
General Council and Secretary  
General Atomics  
P.O. Box 85608  
San Diego, CA 92186-9784

SUBJECT: NRC INSPECTION REPORT NOS. 50-89/00-201 and 50-163/00-201

Dear Mr. Edwards:

On March 15 and 16, 2000, the NRC conducted an inspection of your General Atomics TRIGA Reactors Facility. The enclosed report presents the results of that inspection.

Various aspects of your organization and proposed decommissioning activities were reviewed and inspected. This inspection included interviews with personnel and observation of activities in progress. No problems were noted during the inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

If there are any questions concerning this letter, please contact Mr. Craig Bassett at 404-562-4712.

Sincerely,

*/RA/*

Ledyard B. Marsh, Chief  
Events Assessment, Generic Communications  
and Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-89 and 50-163  
License Nos.: R-38 and R-67

Enclosure: NRC Inspection Report  
Nos. 50-89/00-201  
and 50-163/00-201

cc w/enclosure: Please see next page

General Atomics

Docket Nos. 50-89 and 50-163

cc:

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Radiologic Health Branch  
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Dr. Keith E. Asmussen, Director  
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**DOCUMENT NAME: ML003700314**

**TEMPLATE #: NRR-056**

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U. S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION

Docket Nos.: 50-89, 50-163

License Nos.: R-38, R-67

Report Nos.: 50-89/00-201 and 50-163/00-201

Licensee: General Atomics

Facility: TRIGA Reactors Facility

Location: 3550 General Atomics Court, Building 21  
San Diego, CA

Dates: March 15 and 16, 2000

Inspector: C. H. Bassett, Non-Power Reactor (NPR) Inspector

Approved by: Ledyard B. Marsh, Chief  
Events Assessment, Generic Communications  
and Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

General Atomics  
Report Nos.: 50-89/00-201 and 50-163/00-201

The primary focus of this routine, announced inspection was the on-site review of selected programs of this Class III non-power reactor facility including licensee organization, ongoing decommissioning activities, material control and accountability, and transportation of radioactive material.

### Organization and Staffing

- The licensee's organization is in compliance with the requirements specified in the Technical Specifications and the Decommissioning Plan.
- The staffing level is acceptable for current activities.

### Proposed Decommissioning Activities

- The licensee is generally following the schedule which indicates that final decommissioning of the TRIGA Reactors Facility will be dependent upon the removal of all the fuel from the site.
- Safety reviews and audits of the decommissioning project are being completed.
- Postings satisfied regulatory requirements.
- Personnel dosimetry is being worn as required and doses are well within the licensee's specified procedural action levels and regulatory limits.
- Surveys are being completed and documented acceptably to permit evaluation of the radiation hazards that exist.
- Radiation monitoring equipment is being maintained and calibrated as required.
- Radiation worker training is being completed as stipulated by procedure.
- The Work Authorization for decommissioning the TRIGA Reactors Facility has been revised to reflect the recent revisions to the TRIGA Reactors Facility procedures.

### Material Control and Accountability

- No deficiencies were identified in the licensee's Material Control and Accounting program.

### Transportation

- The program for shipping radioactive material is consistent with regulatory requirements.

## REPORT DETAILS

### Summary of Plant Status

The NRC issued license amendments on August 12, 1999, authorizing the licensee to begin decommissioning the two non-power reactors on site. During the inspection, the licensee continued efforts to decommission the reactors as stipulated in the applicable Technical Specifications and as outlined in the Decommissioning Plan.

#### **1. Organization and Staffing (40755)**

##### a. Inspection Scope

The inspector reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Technical Specification (TS) Section 7.1 (for the TRIGA Mark I) and TS Section 8.1 (for the TRIGA Mark F), and statements contained in Section 2.4 of the Decommission Plan (DP) were being met:

- the licensee organizational structure
- management responsibilities
- staffing for decommissioning of the TRIGA Reactors Facility
- resources being committed to the project

##### b. Observations and Findings

Through discussions with licensee representatives and contractor personnel, the inspector determined that management responsibilities and the organization at the facility meet the requirements specified in the TS and the DP. The inspector determined that the TRIGA Reactors Facility (TRF) Decommissioning Project Manager retains overall responsibility for direction of the decommissioning of the facility. The site Health Physics Manager and the TRIGA Reactors Safety Committee advise the TRF Decommissioning Project Manager in matters pertaining to radiological and general safety. The TRF Physicist-in-Charge is responsible for maintaining the project in a safe and proper condition during the evolution of the project and provides engineering support for the decommissioning activities.

The inspector also determined that the licensee's current staffing level is adequate to support the activities being conducted at the facility.

##### c. Conclusions

The licensee's organization is in compliance with the requirements specified in the TSs and the DP and the current staffing level is acceptable for ongoing activities.

#### **2. Decommissioning Activities (40755)**

##### a. Inspection Scope

In order to verify that activities at the site are proceeding as outlined in the DP, the inspector reviewed:

- decommissioning schedule and plans
- safety reviews and audit records
- the Radiation Protection Program

- radiological signs and postings
- routine surveys, monitoring, and dosimetry records
- maintenance and calibration of radiation monitoring equipment
- Work Authorization records related to the decommissioning of the TRF

b. Observations and Findings

Decommissioning personnel have been following the general schedule for completion of the decommissioning project. The schedule, with a few approved modifications, is the one that had been outlined in the DP. The schedule indicates that total decommissioning of the TRF will ultimately be dependent upon the removal of all fuel from the site.

Records showed that the safety reviews are conducted as required in the TSs and the DP. Topics of these reviews are also consistent with TS requirements to provide guidance, direction, and oversight. Audits are being conducted by the Criticality and Radiation Safety Committee (CRSC) and/or a subcommittee of the CRSC, the TRIGA Reactors Safety Committee, in those areas outlined in the TSs and at the required frequency. The CRSC meets at the required intervals to review the project and any modifications or changes that might be needed.

Copies of NRC Form 3, "Notice to Employees," are posted in accordance with 10 CFR 19.11. Caution signs, postings, and control of radiation areas are as required in 10 CFR Part 20, Subpart J. Licensee and contractor personnel were noted observing the indicated precautions for access to the radiation areas.

Use of dosimeters and exit frisking practices are in accordance with radiation protection requirements. The licensee is using a National Voluntary Laboratory Accreditation Program (NVLAP)-accredited vendor to process dosimetry. Radiological exposure records showed that occupational doses and doses to the public are within 10 CFR Part 20 limitations. Training records showed that personnel are acceptably trained in radiation protection practices.

Radiation monitoring and survey activities are as required. Equipment used for these activities are being maintained, calibrated, and used acceptably.

The Work Authorization (WA) and associated amendments and records pertaining to the decommissioning are being maintained as required by procedure. The WA had been revised to reflect revised decommissioning requirements and revisions to the TRF procedures. The WA and applicable procedures appeared to be acceptable.

c. Conclusions

The licensee is generally following the schedule and is using sufficient personnel to complete the job as projected. Safety reviews and audits of the decommissioning project are being completed. Postings satisfy regulatory requirements. Personnel dosimetry is being worn as required and doses are well within the licensee's specified procedural action levels and regulatory limits. Surveys are completed and documented acceptably to permit evaluation of the radiation hazards that exist. Radiation monitoring equipment is being maintained and calibrated as required. Radiation worker training is being completed as stipulated by licensee procedure. The Work Authorization for decommissioning the TRF has been revised to reflect the recent revisions to the TRIGA Reactors Facility procedures.

### **3. Material Control and Accounting (85102)**

#### **a. Inspection Scope**

To verify compliance with 10 CFR Part 70, the inspector reviewed:

- control of storage areas
- annual inventory results of Special Nuclear Material (SNM)
- associated records and reports

#### **b. Observations and Findings**

Records showed that SNM was adequately controlled and that physical inventories were conducted at least annually as required by 10 CFR 70.51(d). Nuclear Material Transaction Reports (DOE/NRC Form 741) and Material Status Reports (DOE/NRC Form 742) were being submitted by the licensee as required by 10 CFR 74.13(1).

The inspector reviewed the licensee's records concerning burn-up adjustments to the fuel inventory. Several years ago the licensee had changed their method of calculating fuel burn-up to better reflect uranium consumption. This change in calculation method resulted in the need for an adjustment to the material inventory records. The records did not appear to clearly reflect what those adjustments were or how they were made. The licensee was informed that their method of adjusting the SNM inventory to reflect the change in burn-up calculation method would be followed by the NRC as an Inspector Follow-up Item (IFI) and would be reviewed during a subsequent inspection (IFI 50-163/00-201-01).

#### **c. Conclusion**

No deficiencies were identified in the licensee's Material Control and Accounting program.

### **4. Transportation of Radioactive Materials (86740)**

#### **a. Inspection Scope**

In order to verify that transportation activities are proceeding as outlined in the DP, the inspector reviewed:

- radioactive materials shipping procedures
- radioactive materials transportation records

#### **b. Observations and Findings**

Records showed that the radioactive waste material for disposal was shipped in accordance with the applicable regulations. This program for radioactive material transport was consistent with license requirements.

#### **c. Conclusions**

The program for shipping radioactive material was consistent with regulatory requirements.

**5. Exit Meeting Summary**

The inspection scope and results were summarized on March 16, 2000, with licensee representatives. NRC personnel discussed the findings for the areas reviewed. The licensee did not identify any of the materials provided during the inspection as proprietary.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee Personnel

K. Asmussen, Director, Licensing, Safety, and Nuclear Compliance  
G. Bramblett, Manager, Decommissioning Project  
E. Drees, Chair, TRIGA Reactors Safety Committee  
L. Gonzales, Manager, Health Physics  
J. Greenwood, Physicist-in Charge and Manager, TRIGA Reactors Facility  
H. Kleinsorge, Security Administrator  
C. Wisham, Manager, Nuclear Materials Accountability

### NRC

A. Adams, General Atomics Project Manager

## INSPECTION PROCEDURE USED

IP 40755: Class III Non-Power Reactors  
IP 85102: Material Control and Accounting - Reactors  
IP 86740: Inspection of Transportation Activities

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

50-163/00-201-01	IFI	Demonstrate an adequate method of adjusting the SNM inventory to reflect the change in burn-up calculation method
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### Closed

None

## LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CRSC	Criticality and Radiation Safety Committee
DP	Decommissioning Plan
IFI	Inspector Follow-up Item
NPR	Non-Power Reactor
NRC	Nuclear Regulatory Commission
NVLAP	National Voluntary Laboratory Accreditation Program
SNM	Special Nuclear Material
TRF	TRIGA Reactors Facility
TS	Technical Specification
WA	Work Authorization