GENERAL ATOMICS

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VIA OVERNIGHT DELIVERY SERVICE

Document Control Desk
ATTN: Mr. Alexander Adams, Jr., Senior Project Manager
Non-Power Reactors & Decommissioning Projects Directorate
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Docket No. 50-89, Facility License R-38, and Docket No. 50-163, Facility License R-67; Submittal of General Atomics' TRIGA® Mark I and Mark F Annual Reports for Calendar Year 2004 (3 Copies each)

Dear Mr. Adams:

Enclosed are the annual reports required by the applicable Technical Specifications of General Atomics' (GA's) Mark I (License R-38) and Mark F (License R-67) TRIGA® research reactors. These reports cover operations for the calendar year 2004. The sections of these reports are numbered consistent with the items of information referred to in Section 7.6d of the Technical Specifications for the Mark I TRIGA® reactor and in 8.6d of the Technical Specifications for the Mark F TRIGA® reactor.

Should you desire additional information concerning the above, please contact me at (858) 455-2823, or Mr. John Greenwood at (858) 455-4526.

Very truly yours,

Keith E. Asmussen

Dr. Keith E. Asmussen, Director
Licensing, Safety and Nuclear Compliance

Enclosures: "TRIGA® Mark I Reactor / Annual Report / Calendar Year 2004," dated March 2005 (3 Copies), and
"TRIGA® Mark F Reactor / Annual Report / Calendar Year 2004," dated March 2005 (3 Copies)

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3550 GENERAL ATOMICS COURT, SAN DIEGO, CA 92121-1122 PO BOX 85608, SAN DIEGO, CA 92186-5608 (858) 455-3000

TRIGA® Mark I Reactor

ANNUAL REPORT

CALENDAR YEAR 2004

prepared to satisfy the requirements of
U.S. Nuclear Regulatory Commission
Facility License R-38
Docket No. 50-89

MARCH 2005

TRIGA REACTORS FACILITY
TRIGA Mark I Reactor
ANNUAL REPORT
Calendar Year 2004

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Introduction

This report documents operation of the General Atomics (GA) TRIGA® Mark I Non-Power Reactor for the period January 1, 2004 through December 31, 2004. The TRIGA Mark I Reactor, possessed by GA at its San Diego, California facilities, was not operated for the duration of the reporting period. The Reactor is possessed by GA under License No. R-38 (Amendment No. 36) granted by the U.S. Nuclear Regulatory Commission (Docket No. 50-89).

This report is being prepared and submitted to satisfy the requirements of Section 7.6(d) of the R-38 Technical Specifications, as amended. This report is presented in six parts, consistent with the information required by the applicable Technical Specifications.

1. Summary of Facility Activities

1.1 Decommissioning Activities

During Calendar Year (CY) 2004, the TRIGA Mark I has been in Decommissioning status. The following represents a summary of activities during this reporting period:

1.2 Facility Status

- All TRIGA Mark I fuel remains situated in the Fuel Storage Canal portion of the Mark F Reactor pool, in Rm. 21/107.
- Decommissioning of the contaminated soil around the pit of the Mark I reactor has been deferred until shipment of the fuel from the Mark F reactor pit for safety reasons.
- The Senior Reactor Operators (SROs) have all maintained their licensing requirements to keep their licenses current. The biennial written exam was taken by the three (3) operators on May 26, 2004.
- The Criticality and Radiation Safeguards Committee (CRSC) completed its annual inspection on November 10, 2004. No problems were noted.

1.3 Decommissioning Schedule

All major task items in the Decommissioning Plan schedule have been completed except for shipment of the fuel from the Mark F storage canal and the decommissioning of the soil around the pit.

1.4 Radioactive Material Shipments

There were no shipments of radioactive material during the CY 2004 reporting period.

2. Maintenance Operations

All maintenance activities, performed during the reporting period, generally fall into three categories: (i) routine preventive maintenance, (ii) routine calibration activities, and (iii) activities associated with replacement of older components and systems due to age. All maintenance activities are recorded in the TRIGA Reactors Decommissioning Logbook. Facility Maintenance Checklists are completed on a regular schedule, at weekly, quarterly, and annual frequencies. All maintenance

operations performed on the TRIGA Mark I were minor in nature. There were no major maintenance operations performed during the reporting period.

3. 10CFR50.59 Facility Modifications and Special Experiments

There were no applications for Facility Modifications, under the provisions of 10CFR50.59, submitted for the R-38 facility during the CY2004 reporting period. There were no Special Experiments submitted for the R-38 facility during CY2004.

4. Radioactive Effluents Released to the Environs

During CY2004, 0.00 millicuries of Argon-41 were discharged from the TRIGA Mark I Reactor facility stack to the atmosphere.

5. Environmental Surveys

During CY2004, the Environmental Monitoring Program (EMP) for the TRIGA Reactors Facility remained essentially unchanged from the prior year. The applicable EMP includes the following monitoring equipment and actions:

- Five (5) emergency air samplers, situated on the Facility roof and around the TRIGA Reactor Facility perimeter.
- Ten (10) environmental air samplers, situated adjacent to, and near the GA site perimeter, in accordance with the GA Material License (SNM-696).
- Daily liquid effluent monitoring from the GA Main Sewerage Outfall Pump House, for gross alpha and beta radioactivity concentrations.
- Annual soil and water sampling at ten (10) stations on the GA site, including stations around the perimeter of the TRIGA Reactor Facility.
- External radiation monitoring of the TRIGA Reactor Facility using five (5) passive area dosimeters, as well as radiation meter surveys conducted periodically.
- Since there were no decommissioning activities or fuel stored in the Mark I Facility, the use of the Continuous Air Monitor (CAM) was discontinued. It will be placed in use any time in the future when there are decommissioning activities.

6. Summary of Radiation Exposures and Radiological Surveys

The following data summarizes measured personnel occupational radiation exposures and radiological surveys of the TRIGA Reactor Facility during CY2004. Personnel who are listed on the TRIGA Reactor Facility Work Authorization (WA #3273) and specific Radiation Work Permits (RWPs) were monitored for radiation exposure; these individuals included 27 General Atomics employees and 19 sub-contractor employees.

6.1 General Atomics Staff Whole Body Exposures[1]

Number of individuals monitored:	27
High Exposure:	0.011 Rem
Low Exposure:	0.000 Rem
Average Exposure:	<0.001 Rem

6.2 Non General Atomics Staff Whole Body Exposures[2]

Number of individuals monitored:	19
High Exposure:	0.012 Rem
Low Exposure:	0.000 Rem
Average Exposure:	<0.001 Rem

6.3 Routine Wipe Surveys of Mark I Reactor Facility

High Wipe:	25.1 dpm/100 cm^2
Low Wipe:	<1. dpm/100 cm^2
Average Wipe:	<1. dpm/100 cm^2

6.4 Routine Radiation Measurements of Mark I Reactor Facility

High Measurement:	1.6 mR/hr Contact
Low Measurement:	<0.2 mR/hr General Area
Average Level:	0.2 mR/hr General Area

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1 Includes reactor facility staff and facility support staff authorized to work at the TRIGA Reactor Facility. These personnel may also work routinely at other GA radiation facilities; therefore, this dose represents *cumulative* exposure at all GA facilities.

2 Includes non-GA sub-contractor personnel who were granted periodic access to the TRIGA Reactor Facility for the performance of work. These personnel may also work routinely at other GA radiation facilities; therefore, this dose represents *cumulative* exposure at all GA facilities