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VIA OVERNIGHT DELIVERY SERVICE

Document Control Desk
ATTN: Mr. James C. Shephard, Project Manager
Directorate of Decommissioning and Uranium Recovery Licensing
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
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Rockville, Maryland 20852-2738

**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 2008 (3 Copies each)**

Dear Mr. Shephard:

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 2008. 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,

A handwritten signature in black ink that reads "Keith E. Asmussen" with a horizontal line extending to the right.

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

Enclosures: "TRIGA[®] Mark I Reactor / Annual Report / Calendar Year 2008," dated April, 2009 (3 Copies), and
"TRIGA[®] Mark F Reactor / Annual Report / Calendar Year 2008," dated April, 2009 (3 Copies)

cc: Mr. Alexander Adams, Jr.



TRIGA[®] Mark I Reactor

ANNUAL REPORT

CALENDAR YEAR 2008

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

APRIL 2009

**GENERAL ATOMICS TRIGA REACTOR FACILITY
TRIGA Mark I Reactor
ANNUAL REPORT
Calendar Year 2008**

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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, 2008 through December 31, 2008. 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 TRIGA Mark I 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.

[®] TRIGA is a registered trademark of General Atomics

1. Summary of Facility Activities

1.1 Decommissioning Activities

During Calendar Year (CY) 2008, the TRIGA Mark I Reactor has been in Decommissioning status. There were no decommissioning activities performed during this period.

1.2 Facility Status

1.2.1 All TRIGA Mark I Reactor fuel remains in the Fuel Storage Canal portion of the TRIGA Mark F Reactor pool in Rm. 21/107.

1.2.2 From June 17 through June 19, USNRC Representative Craig Bassett of the Office of Nuclear Reactor Regulation performed a security inspection of the TRIGA Reactor Facility (TRF). Inspection Report Nos. 50-163/08-201 and 50-089/2008-201 were issued and found no violations or deviations from the GA TRF Decommissioning Plan, Physical Protection Plan, Material Control and Accountability, and Implementation of Security Compensatory Measures.

1.2.3 The GA Senior Reactor Operators (SROs) have all completed the requirements necessary to maintain their licenses current. The required biennial Operator written examinations were completed by the three (3) Operators on July 3, 2008. All Operators passed the examination.

1.2.4 On July 14, 2008, USNRC Region IV personnel visited GA. The primary purpose of the visit was to acquaint J. Whitten (new Region IV Branch Chief) with the GA facilities. No problems were noted during this visit.

1.2.5 On September 4, 2008, an unannounced inspection of the TRIGA Reactor Facility (part of a site-wide inspection) was performed by a representative of the San Diego County Department of Environmental Health. No problems were noted.

1.2.6 On November 4, 2008, GA received an Order from the USNRC regarding the future management of stored GA TRIGA fuel.

1.2.7 In December 2008, GA was made aware of the USDOE's planned intent to assist GA with the future management of stored GA TRIGA fuel.

1.2.8 On December 10, 2008, the GA Criticality and Radiation Safety Committee (CRSC) performed its annual inspection of the TRIGA

Reactor Facility. A CRSC Inspection Report was issued on March 10, 2009. No problems were noted.

1.3 Decommissioning Schedule

All of the major decommissioning tasks identified in the GA TRF Decommissioning Plan, which can be performed prior to the removal of the stored TRIGA Fuel from the facility, have been completed. Additional decommissioning actions cannot proceed until the stored TRIGA fuel is shipped from the TRIGA Mark F Reactor Fuel Storage Canal to an off-site recipient.

1.4 Radioactive Material Shipments

No radioactive material was shipped from the TRIGA Reactor Facility during this 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 Reactor Facility 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 Reactor Facility were minor in nature. There were no major maintenance operations performed during the reporting period.

3. 10CFR50.59 Facility Modifications and Special Experiments

No applications for Facility Modification under the provisions of 10CFR50.59 were submitted for the R-38 Facility during the CY2008 reporting period. There were no Special Experiments submitted for the R-38 Facility during CY2008.

4. Radioactive Effluents Released to the Environs

During CY2008, 0.00 millicuries of Argon-41 were discharged from the TRIGA Mark I Reactor Facility ventilation stack to the atmosphere.

5. Environmental Surveys

During CY2008, 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:

- o Five (5) emergency air samplers, situated on the Facility roof and around the TRIGA Reactor Facility perimeter.
- o Six (6) environmental air samplers, situated adjacent to, and near the GA site perimeter, in accordance with the GA Material License (SNM-696).
- o Daily liquid effluent monitoring from the GA Main Sewerage Outfall Pump House, for gross alpha and beta radioactivity concentrations.
- o External radiation monitoring of the TRIGA Reactor Facility using five (5) passive area dosimeters, as well as radiation meter surveys conducted periodically.
- o Since there were no decommissioning activities or fuel stored in the Mark I Facility, the Mark I Continuous Air Monitor (CAM) was not operated during CY2008. The Mark I CAM will be returned to service in the future, once active decommissioning activities are resumed.

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 CY2008. Personnel who are listed on the TRIGA Reactor Facility Work Authorization (WA #3349) and specific Radiological Work Permits (RWPs) were monitored for radiation exposure; these individuals included 20 General Atomics Staff and 11 Non-General Atomics Staff employees.

6.1 General Atomics Staff Whole Body Exposures¹

Number of individuals monitored:	20
High Exposure:	0.000 Rem
Low Exposure:	0.000 Rem
Average Exposure:	0.000 Rem

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.

6.2 Non-General Atomics Staff Whole Body Exposures²

Number of individuals monitored:	11
High Exposure:	0.000 Rem
Low Exposure:	0.000 Rem
Average Exposure:	0.000 Rem

6.3 Routine Wipe Surveys of Mark I Reactor Facility

High Wipe:	45.2	dpm/100 cm ²
Low Wipe:	< 1.00	dpm/100 cm ²
Average Wipe:	< 1.60	dpm/100 cm ²

6.4 Routine Radiation Measurements of Mark I Reactor Facility

High Measurement:	0.5	mRem/hr
Low Measurement:	< 0.2	mRem/hr
Average Level:	< 0.2	mRem/hr

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



TRIGA[®] Mark F Reactor

ANNUAL REPORT

CALENDAR YEAR 2008

prepared to satisfy the requirements of
U.S. Nuclear Regulatory Commission
Facility License R-67
Docket No. 50-163

APRIL 2009

**GENERAL ATOMICS TRIGA REACTOR FACILITY
TRIGA Mark F Reactor
ANNUAL REPORT
Calendar Year 2008**

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Introduction

This report documents operation of the General Atomics (GA) TRIGA[®] Mark F Non-Power Reactor for the period January 1, 2008 through December 31, 2008. The TRIGA Mark F Reactor, possessed by GA at its San Diego, California facilities, was not operated for the duration of the reporting period. The TRIGA Mark F Reactor is possessed by GA under License No. R-67 (Amendment No. 45) granted by the U.S. Nuclear Regulatory Commission (Docket No. 50-163).

This report is being prepared and submitted to satisfy the requirements of Section 8.6(d) of the R-67 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) 2008, the TRIGA Mark F Reactor has been in Decommissioning status. There were no decommissioning activities performed during this period.

1.2 Facility Status

1.2.1 All TRIGA Mark F Reactor fuel remains in the Fuel Storage Canal portion of the TRIGA Mark F Reactor pool in Rm. 21/107.

1.2.2 From June 17 through June 19, USNRC Representative Craig Bassett of the Office of Nuclear Reactor Regulation performed a security inspection of the TRIGA Reactor Facility (TRF). Inspection Report Nos. 50-163/08-201 and 50-089/2008-201 were issued and found no violations or deviations from the GA TRF Decommissioning Plan, Physical Protection Plan, Material Control and Accountability, and Implementation of Security Compensatory Measures.

1.2.3 The GA Senior Reactor Operators (SROs) have all completed the requirements necessary to maintain their licenses current. The required biennial Operator written examinations were completed by the three (3) Operators on July 3, 2008. All Operators passed the examination.

1.2.4 On July 14, 2008, USNRC Region IV personnel visited GA. The primary purpose of the visit was to acquaint J. Whitten (new Region IV Branch Chief) with the GA facilities. No problems were noted during this visit.

1.2.5 On September 4, 2008, an unannounced inspection of the TRIGA Reactor Facility (part of a site-wide inspection) was performed by a representative of the San Diego County Department of Environmental Health. No problems were noted.

1.2.6 On November 4, 2008, GA received an Order from the USNRC regarding future management of stored GA TRIGA fuel.

1.2.7 In December 2008, GA was made aware of the USDOE's planned intent to assist GA with the future management of stored GA TRIGA fuel.

1.2.8 On December 10, 2008, the GA Criticality and Radiation Safety Committee (CRSC) performed its annual inspection of the TRIGA Reactor Facility. A CRSC Inspection Report was issued on March 10, 2009. No problems were noted.

1.3 Decommissioning Schedule

All of the major decommissioning tasks identified in the GA TRF Decommissioning Plan, which can be performed prior to the removal of the stored TRIGA Fuel from the facility, have been completed. Additional decommissioning actions cannot proceed until the stored TRIGA fuel is shipped from the TRIGA Mark F Reactor Fuel Storage Canal to an off-site recipient.

1.4 Radioactive Material Shipments

No radioactive material was shipped from the TRIGA Reactor Facility during this 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 Reactor Facility 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 F Reactor Facility were minor in nature. There were no major maintenance operations performed during the reporting period.

3. 10CFR50.59 Facility Modifications and Special Experiments

No applications for Facility Modification under the provisions of 10CFR50.59 were submitted for the R-67 Facility during the CY2008 reporting period. There were no Special Experiments submitted for the R-67 facility during CY2008.

4. Radioactive Effluents Released to the Environs

During CY2008, 0.00 millicuries of Argon-41 were discharged from the TRIGA Mark F Reactor Facility ventilation stack to the atmosphere.

5. Environmental Surveys

During CY2008, 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:

- o Five (5) emergency air samplers, situated on the Facility roof and around the TRIGA Reactor Facility perimeter.
- o Six (6) environmental air samplers, situated adjacent to, and near the GA site perimeter, in accordance with the GA Material License (SNM-696).

- o Daily liquid effluent monitoring from the GA Main Sewerage Outfall Pump House, for gross alpha and beta radioactivity concentrations.
- o External radiation monitoring of the TRIGA Reactor Facility using five (5) passive area dosimeters, as well as radiation meter surveys conducted periodically.
- o A Continuous Air Monitor (CAM), situated in the Mark F Reactor Room (21/107), continuously samples room air for airborne radioactivity. CAM air filters are collected each week and analyzed for radioactivity.

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 CY 2008. Personnel who are listed on the TRIGA Reactor Facility Work Authorization (WA #3349) and specific Radiological Work Permits (RWPs) were monitored for radiation exposure; these individuals included 20 General Atomics Staff and 11 Non-General Atomics Staff employees.

6.1 General Atomics Staff Whole Body Exposures¹

Number of individuals monitored:	20
High Exposure:	0.000 Rem
Low Exposure:	0.000 Rem
Average Exposure:	0.000 Rem

6.2 Non-General Atomics Staff Whole Body Exposures²

Number of individuals monitored:	11
High Exposure:	0.000 Rem
Low Exposure:	0.000 Rem
Average Exposure:	0.000 Rem

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 personnel who were granted periodic access to the 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.

6.3 Routine Wipe Surveys of Mark F Reactor Facility

High Wipe:	47.7	dpm/100 cm ²
Low Wipe:	< 1.00	dpm/100 cm ²
Average Wipe:	1.70	dpm/100 cm ²

6.4 Routine Radiation Measurements of Mark F Reactor Facility

High Measurement:	42.	mRem/hr
Low Measurement:	< 0.2	mRem/hr
Average Level:	1.3	mRem/hr