

ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 70-734  
License No.: SNM-696  
Report No.: 70-734/96-03  
Licensee: General Atomics  
Facility: General Atomics  
Location: Torrey Pines Mesa and Sorrento Valley Sites  
Dates: September 16-20, 1996  
Inspector: C. A. Hooker, Senior Fuel Facility Inspector  
Approved By: Frank A. Wenslawski, Chief  
Materials Branch  
  
Attachment: Supplemental Inspection Information

## EXECUTIVE SUMMARY

General Atomics  
NRC Inspection Report 70-734/96-03

The inspection included an operations review relative to the licensee's cessation of principal activities, emergency preparedness, and maintenance/surveillance testing of applicable safety systems.

### Operations Review

- Licensed activities continue to be consistent with the licensee's request (letter dated September 26, 1995) for a possession only license (POL) amendment and notification of cessation of principal activities (Section 1).
- The licensee was maintaining adequate control and security of special nuclear material (SNM) (Section 1).

### Emergency Preparedness

- The licensee's Radiological Contingency Plan (RCP) and facility emergency procedures were adequate for implementing its emergency preparedness program (Section 2.1).
- Emergency response personnel were adequately knowledgeable of emergency response procedures and equipment (Section 2.2).
- One violation was identified for failure to conduct self-contained breathing apparatuses (SCBA) refresher training within 15 months of the previous annual training (Section 2.2).
- The licensee maintained adequate support from offsite agencies for responding or assisting during an emergency event (Section 2.3).
- Drills and exercises were adequate to exercise personnel in the event of an emergency (Section 2.3).
- The licensee's emergency response facilities and equipment were maintained in a state of operational readiness (Section 2.4).

### Maintenance/Surveillance Testing

- The licensee was adequately maintaining and testing systems important to safety (Section 3).

## Report Details

### Summary of Facility Status

All production and research activities involving the use of SNM have been discontinued, consistent with the licensee's request (letter dated September 26, 1995) for a POL amendment and notification of cessation of principal activities. The licensee has been in the process of revising sections of its license (Part II of the Application) to reflect cessation of principal activities and a POL amendment. The licensee intends to complete this effort and submit the final revised sections to NRC on or before October 15, 1996. By letter dated May 1, 1996, the NRC provided an interim approval of the "GA Hot Cell Facility Decommissioning Plan," dated July 6, 1995, and supplement thereto. Current licensed activities consisted of decontamination and decommissioning (D&D) of the Hot Cell Facility (HCF) (Building 23), and identifying equipment and SNM at other facilities for either disposal or disposition in preparation for facility characterization and upcoming D&D activities.

## **1 Operations Review**

### **1.1 Licensee Activities**

#### **a. Inspection Scope (88020)**

The inspector was accompanied by cognizant licensee personnel on tours of the licensee's facilities located at Torrey Pines Mesa (main site) and the Sorrento Valley site. Ongoing activities and facility status were observed and discussed with cognizant licensee personnel. The inspector also reviewed selected licensee records to evaluate the presence of SNM.

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

All non-essential equipment exterior of the hot cells had been removed from the HCF. The equipment had either been packaged as radioactive waste or released for unrestricted use. The radioactive machine shop contained no equipment, and the office space walls had been removed. With the exception of remote handling equipment, all the equipment in the high level hot cell had been removed. General cleaning of the hot cell inside surface areas by remote methods had reduced the dose rates from mixed fission products to levels where the licensee is considering allowing personnel entries to better assess the radiological conditions. Recent surveys, by remote methods, showed that the maximum dose rate at waist level from gamma radiation was approximately 0.2 rem per hour (rem/hr) with a corresponding beta dose rate of approximately 0.6 rem/hr. The maximum gamma dose rate at about ankle level was approximately 0.35 rem/hr with a corresponding beta dose rate 1.0 rem/hr. Wipe tests indicated a nominal average for removable contamination of  $6.0 \text{ E}4$  disintegrations per minute per 100 square centimeters (dpm/100 cm<sup>2</sup>) for beta activity and 140 dpm/100 cm<sup>2</sup> for alpha activity. Although

there is no accountable SNM remaining in this facility, the licensee was maintaining the criticality monitoring system operational until an appropriate assessment can be made of any potential SNM in non-accessible portions of the drain and ventilation systems.

There were no ongoing activities in the TRIGA Fuel Fabrication Facility, Building 22. The facility remains shut down and void of processing equipment. The licensee had intended to have all of the remaining TRIGA fuel removed from the vault by the end of June 1996. However, final foreign approval of the shipping container for transporting the material to France had not yet been granted at the time of inspection.

Current activities in the modular helium reactor pilot facility and the quality control laboratory continue to involve identifying equipment and SNM for disposal and/or disposition to the Department of Energy (DOE).

At the Nuclear Waste Processing Facility (Building 10), activities involved neutralizing and solidifying a large quantity of thorium nitrate being stored in the main site SNM storage vault. After solidification, this state licensed material will be shipped to a DOE facility at the Nevada Test Site.

There were no ongoing activities in the main site SNM vault. The storage of SNM materials was in accordance with the licensee's criticality safety analyses and regulatory requirements. SNM storage containers were adequately labeled with the uranium content and enrichment. The facility was orderly and well maintained.

During facility tours, the inspector noted that the applicable safety systems (criticality monitoring systems, ventilation systems, and fire suppression systems) appeared operable. Monthly tests and annual calibrations of the criticality monitoring systems are described in Section 3 below. SNM storage containers were adequately labeled with the uranium content and enrichment. Inventory records were up-to-date. Housekeeping was good in all areas toured.

c. Conclusion

The inspector concluded that the licensee's activities continue to be consistent with the statements made in its letter of September 26, 1995. The storage of SNM materials was in accordance with the licensee's criticality safety analyses and regulatory requirements. The licensee was maintaining adequate control and security of SNM. No safety concerns were identified.

1.2 Miscellaneous Activities

The inspector also attended a meeting and toured selected licensee facilities with representatives from the State of California, the Oak Ridge Institute for Science and Education (ORISE), the NRC licensing project manager, and licensee representatives

to obtain an overview of facilities that will be included in the licensee's overall D&D program. In addition to assessing upcoming D&D activities, ORISE was onsite, under direction of the NRC licensing project manager, to perform confirmatory surveys of a group (Group-8B) of laboratories in Building 2 for release for unrestricted use. This activity will be summarized in other correspondence.

## **2 Emergency Preparedness**

### **2.1 RCP and Implementing Procedures**

#### **a. Inspection Scope (88050)**

The inspector reviewed and discussed revisions to the licensee's RCP (Emergency Plan) and applicable facility emergency procedures, and organization and staffing with licensee personnel to determine if the licensee emergency program was current with site conditions and being maintained in a state of operational readiness. The inspector also toured licensee facilities as described in Section 1 above.

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

The licensee has made substantive changes regarding facilities, equipment, and procedures at the site during the past year. These changes were reflected in a complete revision of the licensee's RCP (dated August 1995) submitted to the NRC under the provisions of 10 CFR 70.32(i).

In addition to the RCP, each facility at the site maintains individual specific emergency procedures for implementing the requirements of the RCP and responding to emergencies respective to the facility. These procedures are prepared by Emergency Response and Recovery Directors (ERRDs). The ERRD is a senior person designated by the facility/project management and is responsible for directing the overall emergency response actions at their respective facility. ERRDs also designate personnel who are classified as emergency responders for each respective facility and the required training for emergency response personnel. The ERRDs, alternates, and emergency responders are listed in each facility emergency procedure. The RCP requires that each of these facility emergency procedures be reviewed and revised annually.

The inspector noted that although none of the facility emergency procedures were overdue for an annual update, several of these procedures were noted as needing updating due to recent personnel layoffs at the site. The needed changes pertain to persons listed as having specific response functions or who are no longer employed at the facilities for which they have specific responsibilities. Some of the procedures were in the process of being revised to current status at the time of the inspection. The licensee informed the inspector that the remaining facility procedures will be reviewed and updated as appropriate.

The inspector noted no discrepancies in the licensee's emergency response organizational chart and the emergency response organization names and telephone numbers (submitted to NRC in May 1996) provided in the RCP. Also, the RCP and facility emergency procedures provided adequate guidance on classification and mitigation of the consequences of emergencies, assessment for any potential releases of radioactive materials, personnel accountability, and internal and off-site notification of emergencies.

c. Conclusions:

The inspector concluded that the licensee's RCP and facility emergency procedures were adequate for implementing its emergency preparedness program. Consistent with the current status of the site, staff levels appeared sufficient for implementing the program.

2.2 Emergency Preparedness Training

a. Inspection Scope (88050)

The inspector interviewed selected emergency response personnel to evaluate their awareness of emergency procedures and reviewed records of emergency response training to verify that the training requirements specified in the licensee's RCP and facility implementing procedures were being effectively implemented.

b. Observations and Findings

The inspector determined that ERRDs, alternate ERRDs, and security personnel had received training consistent with the RCP and licensee emergency procedures. The inspector also noted that personnel designated as emergency response responders had received all of their required training, except that specified for SCBAs. The licensee's data base for required emergency response training for all emergency response personnel, including personnel associated with state licensed activities, indicated that no individual onsite was listed as being currently qualified for using SCBAs.

The inspector noted that the last training provided to emergency response personnel on SCBA procedures and use was conducted on March 23, 1995. Based on the review of individual facility emergency procedures and the licensee's data base that is governed by Work Authorization No. 3081 which specifies the training requirements for implementing the RCP, the inspector noted that five individuals designated as SCBA users related to SNM licensed activities had not received the specified training for using such devices. Four individuals had not received the required annual refresher training and one individual placed on the required SCBA training list in May 1996 had not received any SCBA training since placement on the list.



SCBA training was previously provided by the emergency services component which was deleted from the licensee's organization in 1995 as a result of down-sizing and layoff of personnel. The supervisor of this component was rehired (by contract) to perform certain onsite functions which included inspection and maintenance of emergency response equipment, and assisted with certain portions of emergency response personnel training. As part of continued down-sizing and organizational changes, this individual was recently terminated from employment. At the time of the inspection, the licensee had not determined the specifics of fulfilling the SCBA training requirements.

Safety Condition S-23 of SNM License 696 requires the licensee to maintain and execute the response measures described in the Emergency Plan (RCP) dated August 1995 and revisions thereto.

Section 4.1.4, "Primary Support Group Emergency Response Organization," of the licensee's RCP states, in part, "Members of Emergency Response Teams are trained in those subjects deemed appropriate for their facility (such as basic first aid, ...., and the use of self-contained breathing apparatus)."

Section 10.2. "Training" of the licensee's RCP requires annual training of emergency response team members, and that the annual retraining is not to exceed 15 months from the previous training.

Although no emergency event occurred that required the use of SCBA, the failure to conduct the required SCBA training within 15 months of the previous annual training was identified as a violation of Safety Condition S-23 (70-734/9603-01).

From discussions with selected licensee personnel during facility tours, the inspector noted that these individuals were cognizant of the location of emergency equipment and emergency procedures.

c. Conclusion

Emergency response personnel were adequately knowledgeable of emergency response procedures and equipment. Although the licensee had conducted abundant training, one violation was identified for failure to conduct SCBA refresher training within 15 months of the previous annual training.

2.3 Offsite Support Agencies, Drills and Exercises

a. Inspection Scope (88050)

The inspector evaluated the licensee's involvement with offsite support agencies as described in the RCP.

b. Observations and Findings

The licensee's RCP plan contains no requirement for agreement letters with offsite agencies for response or assistance during emergency events. Offsite agencies mentioned in the RCP are principally governmental, and have indicated to the licensee that they have a statutory responsibility to respond in the event of an emergency at the site. The Scripps Memorial Hospital functions as the supporting hospital on the same basis.

Offsite response agencies are invited on an annual basis to participate in orientation training and emergency exercises sponsored by the licensee. Approximately 26 members of the San Diego Fire Department visited the site for a familiarization/overview of the licensee's facilities in September 1995. The Scripps Memorial Hospital and a local paramedics service group last exercised with the site during a radiation disaster drill on April 23, 1996. This exercise was observed by the inspector and described in NRC Inspection Report 70-734/96-02, dated May 13, 1996. The DOE and the County Department of Health Services participated with the site in an emergency exercise in 1993.

The inspector noted that semiannual criticality evacuation drills were held at each applicable facility and nearby tenants, as outlined in the RCP. A critique was performed for each drill to evaluate the effectiveness of the evacuations. Deficiencies were adequately addressed.

c. Conclusions

The inspector concluded that the licensee maintained adequate support from offsite agencies for responding or assisting during an emergency event. Drills and exercises were adequate to exercise personnel in the event of an emergency and consistent with commitments in the RCP.

2.4 Emergency Equipment and Facilities

a. Inspection Scope (88050)

The inspector toured the licensee's facilities to examine selected emergency kits and equipment, as specified in the RCP and licensee procedures. The inspector also evaluated the licensee's posting of evacuation routes and examined emergency exits from fenced facilities.

b. Observations and Findings

Emergency kits containing equipment to cope with emergencies were examined and found to be as specified in the RCP and licensee procedures. The licensee conducted monthly inspections of emergency response equipment maintained in the health physics response van, SCBAs maintained at specific facilities, and portable



fire extinguishers. Survey meters were calibrated and operational and SCBA air tanks were full. Acid showers and acid eyewash fountains were conveniently located where applicable.

Evacuation routes were vividly marked and emergency exit gates from fenced facilities were operational. The licensee no longer maintains any onsite medical facilities, but the site is located only one and one-half miles from the Scripps Memorial Hospital, which provides medical support to the site. The licensee does maintain first aid kits that were observed to be conveniently located in selected facilities.

c. Conclusions

The licensee's emergency response facilities and equipment were maintained in a state of operational readiness. Personnel evacuation routes were clearly defined throughout the licensee's facilities.

**3 Maintenance and Surveillance Testing**

a. Inspection Scope (88025 and 88050)

The inspector toured the licensee's facilities to observe the status of safety systems. The inspector also reviewed records for the past year of monthly fire suppression system flow and alarm tests, monthly response tests and annual calibration of the criticality monitoring systems, and weekly testing of the Building 1 emergency generator (specified in the licensee's RCP).

b. Observations and Findings

The inspector noted that appropriate tests and inspections of the fire suppression systems had been conducted monthly and were current. The inspector also noted that due to the licensee's continued down-sizing and organizational changes, the individual (emergency services component) performing these tests was recently terminated from employment. The responsibility of maintaining the fire protection systems was currently under the management of the human resources department. The continued maintenance of the fire protection systems was discussed with cognizant management personnel during the inspection and at the exit interview. At the time of inspection, the licensee had not made any conclusive plans as to the continued maintenance of the fire suppression systems and portable fire extinguishers.

The inspector noted that the Building 1 emergency generator that supplies emergency power to Security Station 1 (primary emergency support center) was tested weekly for auto start and load transfer. During the inspection, the licensee manually started the generator to demonstrate its operability. No concerns were identified by the inspector.

Regarding the criticality monitoring systems for each facility, the monthly tests included verification of each detector's response, the effectiveness of the audible alarm system, and verification that the Security Station 1 alarm indicating panel was operational. Each detection unit was calibrated annually in accordance with established procedures.

c. Conclusions

The licensee was adequately maintaining and testing systems important to safety. Although the inspections and tests of the fire protection systems were current, the departure of the individual previously maintaining the fire protection systems creates a void that will have to be addressed by the licensee.

**3 Exit Meeting Summary**

The inspector presented the inspection results to members of the licensee management at the conclusion of the inspection on September 20, 1996. The licensee acknowledged the findings presented.

Although proprietary information was reviewed during this inspection, such information is not knowingly described in this report.

## ATTACHMENT 1

### PARTIAL LIST OF PERSONS CONTACTED

#### Licensee

L. K. Alfonso, Corporate Industrial Hygiene and Environmental Science  
K. E. Asmussen, Director, Licensing, Safety and Nuclear Compliance  
V. J. Barbat, Manager, Engineering and Maintenance, Hot Cell Decommissioning  
F. C. Dahms, Manager, Fuel Fabrication Equipment  
G. C. Bramlett, Manager, Hot Cell Project  
D. A. Ives, Director, Human Resources, Employee Safety and Health  
H. A. Kleinsorge, Security Administrator  
B. Laney, Licensing Engineer  
L. R. Quintana, Manager, Health Physics  
R. Rao, Manager, Human Resources Safety  
J. M. Sills, Manager, Health Physics, Hot Cell Facility Decommissioning  
C. Taylor, Facilities Engineering  
C. L. Wisham, Manager, Nuclear Materials Accountability  
J. Yi, Manager, Nuclear Safety

#### NRC

C. E. Gaskin, Project Manager, Licensing Branch, Division of Fuel Cycle Safety, NMSS

#### State of California

S. Hsu, Senior Health Physicist, Department of Health and Safety, Radiological Health Branch (DHS/RHB)  
R. Lupo, Health Physicist, Department of Health and Safety  
M. Montes, Health Physicist, DHS/RHB  
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#### ORISE

E. Abelquist, ORISE Assistant Project Director

### INSPECTION PROCEDURES USED

IP 88020: Operations Review  
IP 88025: Maintenance/Surveillance Testing  
IP 88050: Emergency Preparedness

### ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened

70-734/9603-01      Violation: Failure to conduct annual refresher training on the procedures and use of SCBAs.

LIST OF ACRONYMS USED

cm	centimeters
dpm	disintegrations per minute
ERRDs	Emergency Response and Recovery Directors
D&D	decontamination and decommissioning
DOE	Department of Energy
HCF	Hot Cell Facility
ORISE	Oak Ridge Institute for Science and Education
POL	possession-only license
RCP	Radiological Contingency Plan
rem/hr	rem per hour
SCBAs	self-contained breathing apparatuses
SNM	special nuclear material