

Enclosure 1

Docket No. 70-734

License: General Atomic Technologies Inc.
Research and Fuel Fabrication Facility
P. O. Box 85608, San Diego, California 92138

Subject: REVIEW OF EMERGENCY PLAN: SAFETY EVALUATION REPORT

Background

The General Atomic Technologies Incorporation (GA) of San Diego California is authorized by NRC License No. SNM-696 to possess: 985 kg of Uranium-235 enriched up to 93.5%; 9.5kg of U-235 enriched from 93.5% to 100%; 5 kg of U-233 enriched up to 100% in U-233; 3 kg of Pu in encapsulated form; 5 gm of Pu as plated calibration sources; 1 kg of Pu in unseparated form; 50 gms of Pu as solutions, precipitates, and solids; and 1000 gms of U-235 as uranium hexafluoride.

The licensee generates High-Temperature-Gas-Cooled-Reactor (HTGR) fuel assemblies, produces Training-Reactor-Isotope-General-Atomic (TRIGA) reactors and fuel, and is involved in nuclear research and development operations. The license is currently active pursuant to the timely renewal provisions of 10 CFR 70.33(b) pending completion of the safety review of the license renewal application.

On February 11, 1981, the NRC issued an Order to GA to submit within 180 days of the effective date of the Order, a Radiological Contingency Plan in accordance with NUREG 0763 (enclosure 1 to the order). This Order pertained only to those facilities and radioactive materials covered by License No. SNM-696. On September 28, 1981, NRC modified the February 11, 1981 Order to extend the plan's due date to October 13, 1981 as requested by GA. GA submitted their Radiological Contingency Plan on October 13, 1981.

On November 16, 1981, NRC sent GA a letter requesting additional information after finding a number of deficiencies in GA's October 1981 plan. GA, in a letter dated February 23, 1982, stated that they were also required by I&E to submit an emergency plan for their research reactors and suggested submitting their revised plan requested by NMSS as a consolidated emergency plan addressing both Parts 50 and 70. NRC agreed to accept an integrated plan and GA submitted their consolidated plan to NRC on November 2, 1982. After reviewing their November 2, 1982 plan, both I&E and NMSS still found some deficiencies. Because GA did not respond to NRC's questions by October 20, 1983, as requested, I&E on May 21, 1984, sent a letter to GA demanding their response. On May 25, 1984, GA finally submitted the revised emergency plan; however, their letters of agreement with offsite assistance were missing. These letters were submitted on August 22, 1984.

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NMSS has found that the May 25, 1984, site wide emergency plan as amended by additional information is acceptable. I&E has also found that GA's integrated plan meets the requirements of I&E's NUREG 0849 "Evaluation of Emergency Plans for Research and Test Reactors."

Discussion

The GA facility consists of two contiguous sites which are located approximately thirteen miles north of downtown San Diego. The main site is on top of a 360 acre coastal mesa and houses the TRIGA facilities, administrative offices, and experimental laboratories and Hot Cell. The Flintkote site (60 acres) is located on Flintkote Avenue in the Sorrento Valley and is used for HTGR fuel fabrication operations. The sites are away from residentially zoned areas with the closest single resident at one mile from the facility.

The Special Nuclear Materials used at GA's facility are covered under License No. SNM-696. The activities authorized under SNM-696 are: (1) research and development operations such as physical, metallurgical, chemical, and engineering investigations of SNM, and Hot Cell type operations on irradiated fuel elements; (2) incineration and transfer of waste and scrap containing SNM; and (3) fabrication of fuel materials for nuclear energy-related activities.

The site-wide Emergency Plan for the GA San Diego site submitted on May 25, 1984, and supplemented on August 22, 1984 is adequate to demonstrate that the licensee has accomplished the purpose and intent of radiological contingency planning, by assuring (1) that the facility is properly configured to limit releases of radioactive materials and radiation exposures in the event of an accident, (2) that a capability exists for measuring and assessing the significance of accidental releases of radioactive materials, (3) that appropriate emergency equipment and procedures are provided onsite to protect workers against radiation hazards that might be encountered following an accident, (4) that notifications are promptly made offsite to Federal, State, and local government agencies, and (5) that necessary recovery actions are taken in a timely fashion to return the plant to a safe condition following an accident.

GA's facility is designed to limit releases of radioactive material and radiation exposures from abnormal operations in that: (1) the liquid dump room (Bldg. SVA), where a criticality accident is possible, has 24 inch concrete walls, a 16 inch concrete ceiling, an air tight door, criticality alarms, and a specially dampered ventilation system; (2) the Hot Cell, where irradiated fuel is investigated, is equipped with a continuous stack gas monitor with an audio and visual alarm, and the air flow pattern is from clean air to contaminated air; (3) all operations involving potentially airborne Pu are carried out in gloved boxes or closed process equipment with dual HEPA filter systems; (4) all facilities at GA are equipped with fire alarm systems and specialized fire suppression equipment; and (5) the facility is equipped with an emergency power generator which is connected to all critical equipment as well as fire and safety alarms.

Also, some uranium hexafluoride-uranium oxide investigations are carried out at GA's facility; however, these investigations are performed indoors on a laboratory scale using small quantities of UF_6 (<500gms).

The radiological contingency planning organization, as described in the emergency plan, provides adequate preplanning for emergency response. The arrangements for offsite assistance as well as the responsibilities of various supporting organizations are established. General response plans for assessments, protective actions, as well as recovery and reentry are developed for postulated facility accidents. These postulated accidents and the equipment used to mitigate the radioactive material releases are described in the Demonstration Volume (Sec. 7) of GA's license.

Conclusions and Recommendations

The GA License No. SNM-696 should be amended to incorporate the Radiological Contingency Plan dated May 25, 1984, and the letters of agreement submitted on August 22, 1984, as a condition of the license. The proposed amendment should have no adverse effect on the public health and safety or on the quality of the environment and should improve GA's ability to protect against, respond to, and mitigate the consequences of an accident involving radioactive materials.

Enclosure 2

The licensee shall implement, maintain, and execute the response measures of his Radiological Contingency Plan submitted to the Commission on May 25, 1984, and supplemented on August 22, 1984. The licensee shall also maintain implementing procedures for his Radiological Contingency Plan as necessary to implement the Plan. This Radiological Contingency Plan and associated implementing procedures supersede the emergency planning requirements of 10 CFR 70.22(i) as they refer to onsite planning and notification procedures. The licensee shall make no change in his Radiological Contingency Plan that would decrease the response effectiveness of the Plan without prior Commission approval as evidenced by a license amendment. The licensee may make changes to his Radiological Contingency Plan without prior Commission approval if the changes do not decrease the response effectiveness of the Plan. The licensee shall maintain records of changes that are made to the Plan without prior approval for a period of two years from the date of the change and shall furnish the Chief, Uranium Fuel Licensing Branch, Division of Fuel Cycle and Material Safety, NMSS, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, and the appropriate NRC Regional Office specified in Appendix D of 10 CFR Part 20, a report containing a description of each change within six months after the change is made.