



General Atomics Hot Cell Facility, California, Site

An MED/AEC legacy site

This fact sheet provides information about the **General Atomics Hot Cell Facility (GA HCF) site**. The GA HCF was a privately-owned research laboratory near San Diego, California. Regulated by the **U.S. Nuclear Regulatory Commission (NRC)** under a Special Nuclear Materials License and a byproduct materials license with the state of California, General Atomics operated the hot cell facility for the **U.S. Department of Energy (DOE)** reactor research and commercial interests. A cost-sharing agreement between DOE and General Atomics led to an arrangement for the decontamination and remediation of the GA HCF based on facility usage by the federal government. DOE developed the remedy design and implementation. General Atomics completed physical remediation as the prime contractor, with NRC and the state of California releasing the site for unrestricted use. The DOE Office of Legacy Management is responsible for long-term stewardship.

Licensed operations at the facility included receipt, handling, and shipment of radioactive materials; remote handling, examination, and storage of previously irradiated nuclear fuel materials; pilot-scale tritium extraction operations; and development, fabrication, and inspection of uranium oxide–beryllium oxide fuel materials. General Atomics performed most of the work for the federal government.

GA HCF was located in a 60-acre complex 13 miles northwest of downtown San Diego, 1 mile inland from the Pacific Ocean, and approximately 300 feet above sea level. The General Atomics site is in the center of Torrey Mesa Science Center, a 304-acre industrial park. No groundwater wells are at or near the facility. Regional hydrogeologic data indicate that the uppermost aquifer is about 300 feet below ground surface at the site.

Because of a significant decline in the projected use of the facility, a decline in nuclear fission research, and increasing industrial development surrounding the General Atomics site in the early 1990s, General Atomics management decided to decontaminate and decommission GA HCF and remediate the associated yard area. General Atomics requested assistance from the U.S. Department of Energy.

Discussions between DOE and General Atomics led to an agreed cost-sharing and no-fee arrangement for the decontamination and site remediation prorated on the basis of facility usage by the federal government. After an examination of records, the cost shares were calculated to be 76 percent federal work and 24 percent commercial work. Work began in 1993 to inventory the material and equipment in the facility for disposal, develop a disposition path for legacy waste from previous contractors, determine the magnitude and extent of contamination, and prepare a decontamination and decommissioning plan and supporting documents.

Site Information and History

The former GA HCF was constructed in 1959 and operated until 1991. The site encompassed approximately 7,400 square feet of laboratory and remote operations cells.

*A **hot cell** is a heavily shielded enclosure for handling and processing (by remote means or automatically) or storing highly radioactive materials. The General Atomics facility had three hot cells. The walls of these cells were constructed of high-density magnetite concrete (225 pounds per cubic foot; ordinary concrete has a density of about 150 pounds per cubic foot).*

***Remote operation** refers to mechanical handling of irradiated nuclear materials by means, such as a robotic arm, to eliminate human contact with the materials.*

The main source of radioactive contaminants at the facility were nuclear materials and fission/activation products in previously irradiated fuel materials. The facility also had lesser amounts of nonradioactive hazardous waste consisting of asbestos and lead. The total activity of all radionuclides in the irradiated fuel materials, decayed to a reference date of September 30, 2003, was about 2,660 curies.

Waste generated from the hot cell facility dismantlement and subsequent clean-up activities consisted of radiological contaminated soil, asphalt, concrete rubble, construction material debris, and facility equipment.

Selected materials and equipment were removed from the facility in 1995 and salvaged for reuse or packaged for disposal. Contaminated systems were shipped to a low-level radioactive waste disposal facility. Decontamination of the hot cells used a variety of techniques; the predominant one was abrasive cleaning of the concrete surfaces. Interiors of the hot cells were cleaned using remotely operated cleaning methods followed by abrasive cleaning. When all loose contamination had been removed and the cells cleaned, the building was surveyed for radioactivity and dismantled. Material with no radioactive contamination was disposed of as “clean” waste, and material with contamination that could not be removed was shipped offsite for burial as contaminated low-level radioactive waste. Buried items, including wells, hot drain lines, and high-efficiency air particulate ducting, were excavated and shipped offsite for disposal. Remediation of the yard area was followed by radiological surveys and additional remediation until release criteria were met in all areas. The GA HCF site was released for unrestricted use by the NRC in July 2000 and by the State of California Department of Health Services in August 2000.

DOE-owned legacy irradiated fuel materials from the site were shipped to the Idaho National Engineering and Environmental Laboratory at Idaho Falls, Idaho, for interim storage. Of the radioactive waste shipped offsite for permanent disposal, 94,438 cubic feet went to the Hanford, Washington, facility; 60,524 cubic feet went to Envirocare, LLC (currently Energy Solutions), near Salt Lake City, Utah; 57,659 cubic feet went to the Nevada Test Site; and 486 cubic feet was shipped to various smaller facilities. Remediation activities associated with the cleanup of the GA HCF site were completed on September 28, 2003. There are no requirements for long term surveillance and maintenance.

Regulatory Setting

The GA HCF site was regulated under General Atomics’ Special Nuclear Materials license with NRC and byproduct materials license with the State of California Department of Health Services, Radiological Health Branch. Release criteria for soil, building materials, concrete, and asphalt were based on criteria in General Atomics’ Special Nuclear Materials license with NRC and state licenses. The final release guideline values were calculated specifically for

the site and represented incremental concentrations above background values. NRC’s Manual for Conducting Radiological Surveys in Support of License Termination (NUREG/CR-5849) provides guidelines for calculating isotopic concentrations in soil that corresponded to maximum permissible gamma exposure rates and dose rates.

Legacy Management Activities

The DOE Office of Legacy Management responsibilities consist of managing the records related to facility remediation and, as necessary, responding to stakeholder inquiries.



CONTACT INFORMATION

**IN CASE OF AN EMERGENCY AT THE SITE,
CONTACT 911**

**LM TOLL-FREE EMERGENCY HOTLINE:
(877) 695-5322**

Site-specific documents related to the **General Atomics Hot Cell Facility, California, Site** are available on the LM website at www.energy.gov/lm/general-atomics-hot-cell-facility-california-site

For more information about LM activities at the **General Atomics Hot Cell Facility, California, Site**, contact:

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