

Site Summary – Building 4003

Site Identification:

Building 4003
Engineering Test Building
Excess Equipment Storage
Property Storage
Includes Building 4693, Substation

Operational Use/History:

- Constructed in 1958.
- From 1957 through 1964, Building 4003 was used to assemble fuel for the Sodium Reactor Experiment (SRE). In Building 4003, uranium and thorium metal slugs were loaded into metal tubes, the remaining tube space was filled with sodium, and the tubes were then sealed.¹
- In the 1960s, the exterior sewer lines and sump were removed when Building 4003 was connected to the site-wide sanitary sewer system.
- Until the termination of the Systems for Nuclear Auxiliary Power (SNAP) program in 1973, Building 4003 was used for the analysis of SNAP fuel burn-up samples and the evaluation of irradiation experiments.²
- The prime remedial action for Building 4003 began in January 1975 and ended in June 1975, during which:
 - The Hot Cave was totally dismantled and all materials and equipment were removed from the site.² Dismantling included removal of:
 - The block and steel structure;
 - The floor and footings down to the original earth;
 - Radioactive liquid waste;
 - The air exhaust systems; and
 - Electrical and water support systems.
 - Other contaminated facilities removed from Building 4003 included: fume hoods, radioactive waste sinks, drain lines, holding tanks and the facility exhaust system.³
- Following initial decontamination activities, the building was used as a non-radioactive storage building. Industrial Planning Maps refer to Building 4003 as an Excess Equipment Storage Building from 1975 to 1992.⁴
- Sewer lines, suspected of contamination, were removed in September 1982.^{3,5}
- Demolished in 1999.

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Site Description:

- Building 4003 was approximately 15,000 square feet and contained a Hot Cave, fume hoods, radioactive waste sinks, drain lines, holding tanks and a radioactive exhaust system. The building was initially connected to a leach field system until it was closed and abandoned once the site-wide sewage treatment system was installed and operational in the early 1960s.
- Serviced by Substation 4693.

Relevant Site Information:

- Radioactive material was managed at this facility in the form of uranium, thorium, transuranics, mixed fission products, and Co-60 and other activation products.
- The following are incidents that could have involved releases of radioactivity to the environment:
 - On December 22, 1959, a contractor removed a radioactive exhaust stack without notifying Health Physics (A0423).
 - On September 2, 1969, laboratory equipment and portions of the floor were found to be contaminated (though the method of contamination is not clear). All affected areas were decontaminated and there was no evidence that contamination was tracked outside of Building 4003 (A0048).
 - On November 9, 1989, an incoming shipment of radioactive laser parts arrived from Stanford University without labels or authorization. Upon examination, the shipment was found not to exceed a safe level of radioactivity (A0202).
- Serviced by Substation 4693.

Radiological Surveys:

- Following decontamination activities, Building 4003 was given a preliminary release in 1975.³
- A survey by Argonne National Laboratory (ANL) in 1981 showed some residual contamination. In October 1981, decontamination activities were performed, including removal of all sewer lines within the building since they may have been contaminated with enriched uranium.⁶
- ANL performed a post-remedial action survey of the building following decontamination.
 - The survey found several areas of the building's interior with elevated levels of radiological contamination.
 - A detailed survey of the outside perimeter of the building revealed no detectable contamination.
- Consequently, Rockwell International conducted additional decontamination. A final post-remedial-action survey was conducted by ANL during April 1982. The areas in Building 4003 that had been found contaminated in 1981 were found to be free of radioactive contamination.⁶

- Building 4003 was acceptably free of contamination and ANL recommended that the facility be released for unrestricted use; all areas previously contaminated in 1981 in Building 4003 were now free of radioactive contamination.
 - Allowable limits for the survey were as follows:
 - Surfaces:
 - Alpha: 100 dpm/100 cm² total, 20 dpm/100 cm² removable;
 - Beta: 0.1 mrad/hr at 1 cm through 7 mg/cm² absorber and 100 dpm/100 cm² removable;
 - Soil:
 - 100 pCi/g gross detectable beta;
 - 1,000 pCi/g gross detectable beta average below three meters;
 - 3,000 pCi/g gross detectable beta in isolated cracks below three meters.
- The Energy Systems Group (ESG) performed a final survey in 1983, and ANL performed a verification survey in 1984. The Department of Energy (DOE) subsequently released the facility for unrestricted use in 1985.
- A radiological survey performed in 1988 included the lot bordering the east side of Building 4003.⁷ The results of the survey indicated the area contained no measurable residual radioactivity.⁸
- The drainage lines, septic tank and leachfield were excavated in 2001 and surveyed for radioactive contamination (See Building 4143 site summary for more information).

Status:

- DOE released the facility and surrounding soil for unrestricted use in September 1985.⁷
- Building 4003 was demolished in 1999.

References:

- 1- Rocketdyne Internal Website, <http://rdweb/shea/radiationsafety/4003.html>, accessed August 2003.
- 2- Rockwell International Report, AI-ERDA-13158, "Building 003 Decontamination and Disposition Final Report," March 12, 1976.
- 3- Rockwell International Report, N704TI990063, "Radiological Survey Results – Release to Unrestricted Use, Building 003," November 9, 1982.
- 4- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
- 5- Personnel Interview, Dan Trippeda, September 15, 2003.
- 6- Argonne National Laboratory Document, DOE/EV-0005/44, "Post Remedial Action Survey Report for Building 003, Santa Susana Field Laboratories, Rockwell International, Ventura County, California," April 1982.

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- 7- DOE/OAK, Letter, Docket #6450-01 “Certification Docket for the SRE and Building 003,” from J. K. Hartman (DOE/OAK) to G.W. Meyers, September 24, 1985.
- 8- ETEC Document, GEN-ZR-0009, “Radiological Survey of the T513 Parking Lot; Old R/A Laundry Area; Plot 333; and Areas Between the SRE to RMDF, and KEWB to RMDF,” August 26, 1988.
- 9- Historical Site Photographs from Boeing Database.

Photograph – Building 4003



