

# Historical Site Assessment Santa Susana Field Laboratory Area IV

## Focus on the Hot Lab

### What is a Historical Site Assessment?

An HSA describes a site's radiological history from the start of activities to the present time.

The Historical Site Assessment...

- Identifies sites
- Reviews historical operations
- Describes current conditions
- Classifies sites for radiological impact

### How was the HSA Completed?

- Information was gathered from multiple sources, such as personal interviews, use authorizations, incident reports, site inspections, facility maps, historical photos and previous radiological surveys
- All Area IV structures past or present, government or company owned and areas of contamination, were defined as "sites"
- Site summaries were prepared for each of the 272 sites

Site Summaries, like this have been completed for all 272 Area IV sites:

### Site Identification:

Any name used for the site (also purpose and association changed over time, resulting in several different names)

### Operational Use/History:

The date site was constructed, programs the site supported, dates these programs were operating, deactivation/decontamination activities and demolition date.

### Site Description:

A physical description of the site and any holding tanks, or other below ground structures, leach field, or air filter structure (stacks, HEPA filtration) associated with the site.

### Relevant Site Information:

Type of radiological material managed at the site, use authorizations and any incidents that may have resulted in potential releases to the environment.

### Radiological Surveys:

Radiological surveys performed at the site, description of survey purpose (routine, characterization, final status, verification) date conducted, agency conducting the survey, survey scope (interior or exterior), measurements collected, acceptable limits for survey and survey results.

### Status:

Site release date and releasing agency (if applicable) and demolition date or current use.

### Site Identification



Building 4020  
Rockwell International Hot Lab  
Component Development Hot Cell (CDHC)

### Site Description



- Rectangular steel and concrete building with 16,000 ft<sup>2</sup> of floor space.
- Four shielded, atmosphere-controlled internal cells used for the remote examination of highly radioactive materials.
- The Building featured an operating gallery, service gallery, maintenance rooms a mock up room and administrative areas.
- An exhaust stack originated from the basement air filtering system to 55 feet above the top of the building.
- All drainage systems in the building were connected to a holdup tank.

### Radiological Surveys

Year of Survey	Agency	Survey ID	Survey Date
1987	Rockwell International	RI-1000	10/15/87
1988	Rockwell International	RI-1001	10/15/88
1989	Rockwell International	RI-1002	10/15/89
1990	Rockwell International	RI-1003	10/15/90
1991	Rockwell International	RI-1004	10/15/91
1992	Rockwell International	RI-1005	10/15/92
1993	Rockwell International	RI-1006	10/15/93
1994	Rockwell International	RI-1007	10/15/94
1995	Rockwell International	RI-1008	10/15/95
1996	Rockwell International	RI-1009	10/15/96
1997	Rockwell International	RI-1010	10/15/97
1998	Rockwell International	RI-1011	10/15/98
1999	Rockwell International	RI-1012	10/15/99
2000	Rockwell International	RI-1013	10/15/00
2001	Rockwell International	RI-1014	10/15/01
2002	Rockwell International	RI-1015	10/15/02
2003	Rockwell International	RI-1016	10/15/03
2004	Rockwell International	RI-1017	10/15/04
2005	Rockwell International	RI-1018	10/15/05
2006	Rockwell International	RI-1019	10/15/06
2007	Rockwell International	RI-1020	10/15/07
2008	Rockwell International	RI-1021	10/15/08
2009	Rockwell International	RI-1022	10/15/09
2010	Rockwell International	RI-1023	10/15/10
2011	Rockwell International	RI-1024	10/15/11
2012	Rockwell International	RI-1025	10/15/12
2013	Rockwell International	RI-1026	10/15/13
2014	Rockwell International	RI-1027	10/15/14
2015	Rockwell International	RI-1028	10/15/15
2016	Rockwell International	RI-1029	10/15/16
2017	Rockwell International	RI-1030	10/15/17
2018	Rockwell International	RI-1031	10/15/18
2019	Rockwell International	RI-1032	10/15/19
2020	Rockwell International	RI-1033	10/15/20
2021	Rockwell International	RI-1034	10/15/21
2022	Rockwell International	RI-1035	10/15/22



### Operational History

- Construction completed in 1959.
- Used for the disassembly and examination of irradiated nuclear fuel assemblies from various nuclear reactors such as Sodium Reactor Experiment (SRE), Systems for Nuclear Auxiliary Power (SNAP) and others.
- Used for the decladding of irradiated plutonium bearing fuels from off-site reactors from 1976 to 1986.
- DOE decided to demolish the facility in 1986.
- Initial decontamination occurs 1987 to 1991 with removal of hazardous materials and equipment.
- Further decontamination and demolition took place from 1992 to 1997.



### Relevant Site Information

- During the 30-year operational history of the Hot Lab nearly 50 incidents occurred involving radioactive materials.
- Incidents are listed in the HSA and include:
  - Contamination of personnel, equipment, structures within the facility which were subsequently decontaminated.
  - Sodium/Potassium liquid metal, uranium and cleaning alcohol fires.
  - Increase in airborne activity levels.
  - Liquid spills.
- Perhaps the most serious incident occurred in 1971:
  - A fire occurred in Decontamination Room 4 during the disposal of 100 gallons of sodium/potassium liquid metal which contained radioactivity.
  - Nearly all contamination was contained to the Hot Cell.
  - Resulting airborne activity ranged from 2 to 20 percent of the permissible concentrations for occupational use.
  - Average concentrations released to the outside through the stack was about 5 percent of the permitted concentrations.

### Status

- Building 4020 was completely demolished and the site backfilled in 1997.
- The land was released for unrestricted use in 2005.

### Results of HSA for all of Area IV

- 272 sites were identified in Area IV:
  - ↳ 177 non-impacted
  - ↳ 95 impacted
    - ↳ 70 require no further action
    - ↳ 25 require additional soil sampling

### Buildings to be Demolished with Soil Sampling Required



### Sites Requiring Soil Sampling (Buildings previously released)

