

Appendix E. Partial List of Violations Cited, Hazards Observed by Site Inspectors, and Accidents

Table E-1. A Partial List of Violations Cited and Hazards Observed by Site Inspectors

| Year of Citation | Ref | Site | Cited by | Violations | Comments |
|-------------------|-----|---|----------|---|---|
| 1983 | 1 | Areas I and III | DHS | Inadequate groundwater monitoring program for uppermost aquifer | |
| 1983 | 1 | TTF (Area I) | DHS | Inadequate waste storage of PCBs | |
| 1984 | 6 | | | Failure to design, construct, maintain, and/or operate the sodium burn facility to minimize the hazardous waste at the facility | Title 22, California Code of Regulations, Section 67120(a) |
| 1985 | 6 | Sodium Storage Area (T029) | DHS | Failure to submit a written report to DHS and EPA within 15 days after determination of release of radioactive materials | 40 CFR, Part 264.56(j) |
| 1988 | 6 | Area II | DHS | Failure to obtain permit for air stripping tower Delta (in operation) | Title 22, California Code of Regulations, Section 66371(a) |
| 1989 | 6 | Sodium Burn Facility | | False statement made in permit application submitted on Dec. 21, 1988, where RD stated that there was no hazardous waste contamination at the Sodium Burn Facility | Health and Safety Code, Section 25189.2 |
| 1989 | 6 | Outside Building 59 (Area IV) | DHS | Failure to obtain permit to operate groundwater treatment unit | California Code of Regulations, Section 67120(a) |
| 1989 | 5 | Building T133 | DHS | “Soil samples were not collected to determine if migration of the waste occurred” | Violation for April 1984 to February 1989 |
| 1989 | 2 | Burn pit in Area I | EPA | Failure to notify EPA of the TTF unit | Violation for January 1985 to November 1989 |
| 1989 | 2 | Alpha/Canyon (Area I) and Delta (Area II) | DHS | Failure to obtain a permit for two air stripping towers | |
| 1989 | 2 | | DHS | Failure to prepare waste analysis plans | |
| 1989 | 2 | Areas I and II | DHS | Failure to document inspections of generator tanks before June 19, 1989 | |
| 1989 | 2 | Sodium Storage Area (T029) | EPA | Failure to notify EPA within 15 days of a “release of radioactive materials” | EPA detected radioactive contaminants in soil at the Sodium Burn Pit facility during the July 12–13, 1989, inspection |
| 1991 | 3 | Burn pit in Area I | DHS | Burning flammable liquid in batches exceeding 5 pounds | |
| 1990 | 3 | | DHS | “Radioactivity was detected in a leak in the sodium Na/K pipe” | |
| 1994 | 7 | TTF | EPA | Illegal burning of triaminoguanidine nitrate at the TTF | Two scientists were killed |
| February 14, 2000 | 4 | Energy Technology and Engineering Center | DTSC | 1. Failure to conduct weekly inspections 2. Accepting wastes from an offsite source without authorization 3. Conducting stabilization (treatment) without authorization | The final settlement amount was \$12,000 |

Notes: TTF = Thermal Treatment Facility; DHS = Department of Health Services; EPA = Environmental Protection Agency; DTSC = Department of Toxic Substances Control

References: 1. Letter, Sept. 15, 1983, DHS (John A. Hinton) to Rocketdyne, CA D093365435. 2. Letter, Aug. 11, 1989, DHS (Scott Simpson) to Rocketdyne (Steve Lafflam), Re. Nov. 1989 Addendum Report RD Corp SSFL, Area IV, EPA ID #CAD000629972 and CA389009000. 3. Comments on the Draft Closure Plan for Haz. Waste Site Management Facility, Area IV, DHS Report, Dec. 6, 1991. 4. ETEC, 1987. 5. Letter, Sept. 14, 1989, DHS to Rocketdyne, “Information regarding potential releases from solid waste management units” in reference to seven separate spills that occurred at Building 133 from April 1984 to Feb. 1989. 6. DTSC, Toxic Substances Control Division (Region 3) Addendum Report for Violations of Rockwell Int., SSFL, by Vajie Motiaford. #000685. Nov. 1989. 7. Multinational Monitor, May 1996, Vol. 17 No. 5.

Table E-2. Chronological List of Radiological Incidents in Area IV of SSFL

| Date | Description of Incident | Environmental Releases | References |
|------------------|---|--|---|
| March 25, 1959 | AE-6 power doubling excursion ¹ | Improper operating procedures allowed it to reach double its maximum allowable power. Caused “rather heavy air contamination in the reactor room” and contamination of several members of the operating staff. Count rate measurements indicated short-life fission products. | Release of Fission Gas from the AE-6 Reactor, ¹ NAA-SR Memo 3757 ⁵ |
| June 4, 1959 | SRE wash cell explosion ² | Unknown; max recorded 700,000 mrem/100 square centimeters (in building). Air vented to atmosphere. | SRE Fuel Element Damage Report, NAA-SR-4488 ² |
| July 13, 1959 | SRE power excursion | Unknown; potential radioactive “leaks.” Reactor’s power increased uncontrollably; it was restarted two hours later negligently. ⁶ | Analysis of SRE Power Excursion, NAA-SR-5989 |
| July 26, 1959 | SRE fuel damage “meltdown” | Same reactor from the SRE power excursion had a partial meltdown. Absolute amount released unknown due to multiple monitor problems. 13 of 43 fuel elements melted. 10,000 Ci released to coolant. Xenon and krypton gases “captured” and emitted over time (1 year) at “safe levels.” | Distribution of Fission Product Contamination in the SRE, NAA-SR-6890; Fuel Damage Element, NAA-SR-4488 |
| March 19, 1960 | SRE steam cleaning pad contamination | Unknown. Radioactive pipe taken outdoors to be decontaminated; pipe exploded. | ATSDR Draft Preliminary Site Evaluation of the Santa Susana Field Laboratory (SSFL) ⁴ |
| 1964 | SNAP 8 (S8ER) fuel element failures ³ | Unknown; “substantial release of fission products.” ⁴ Meltdown of 80% of fuel rods. | Atomics International memo 12790 |
| 1969 | SNAP 8 (S8DR) fuel element failures ³ | Unknown. | ATSDR Draft Preliminary Site Evaluation of the Santa Susana Field Laboratory (SSFL) ⁴ |
| May 19, 1971 | Hot Lab NaK fire in the Hot Lab decontamination room | Unknown. | ATSDR Draft Preliminary Site Evaluation of the Santa Susana Field Laboratory (SSFL) ⁴ |
| November 3, 1976 | Radioactive Material Disposal Facility leachfield contamination | Unknown; “high amount of strontium-90.” Undiscovered for 14 years. (Upon discovery, radioactive soil was dug up and shipped to Beatty, Nevada.) | ATSDR Draft Preliminary Site Evaluation of the Santa Susana Field Laboratory (SSFL) ⁴ |

Notes: 1. AE-6 was a 2-kilowatt, low-power research reactor, used as a neutron source, with a solution of uranyl sulfate in a spherical tank. 2. The SRE (Sodium Reactor Experiment) was part of a program with the Atomic Energy Commission to demonstrate the feasibility of a high-temperature, sodium-cooled power reactor for civilian application. 3. SNAP 8 was a small sodium-cooled reactor for space applications. 4. Adapted from ATSDR Draft Preliminary Site Evaluation of the Santa Susana Field Laboratory (SSFL), Ventura County, California, CERCLIS No. CAD074103771, December 3, 1999. 5. Blackshaw, 1959. 6. Atomics International/Energy Commission Report (NAA-SR-5989) concluded: “It is quite clear that the reactor should have been shut down and the problems solved properly. Continuing to run it in the face of a known tetralin leak, repeated scrams, equipment failures, rising radioactive releases, and unexplained transient effects is difficult to justify. Such emphasis on continued operation can and often does have serious effects on safety and can create an atmosphere leading to serious accidents.”

Source: Adapted from ATSDR, 1999.