
Executive Summary

This Historical Site Assessment (HSA) is developed to summarize the operational history of Area IV for both the Department of Energy (DOE) and The Boeing Company (Boeing) from a radiological perspective. This activity is undertaken to identify areas of radiological operations, compile prior radiological cleanups and releases and to identify further actions needed to ensure that the radiological cleanup of Area IV is completed.

Nuclear-related operations were conducted at Santa Susana Field Laboratory (SSFL) Area IV from 1953 until 1988, with non-nuclear operations continuing through 1998. DOE has focused on completing radiological cleanup since 1989. Over the period of Area IV operations, buildings and land in the radiological areas have been decommissioned, and if necessary, remediated, surveyed, verified and released for reuse by the appropriate regulatory agency (i.e., Energy Research and Development Administration (ERDA), DOE, Nuclear Regulatory Commission (NRC) and the California Department of Health Services (DHS)). Buildings and soil have been decommissioned and released using appropriate regulatory standards as authorized by Congress and the State of California.

Based on this history, portions of Area IV have been identified as *radiologically impacted*¹ or *radiologically non-impacted*,² consistent with applicable California³ and Federal⁴ regulations, and based on guidance from the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM).

DOE and Boeing evaluated 272 numbered structures (collectively referred to as “sites”)⁵ and any other areas of radiological contamination that existed in Area IV since its establishment in 1953. This was to ensure all areas where any types of operations were performed in Area IV were evaluated for radiological impact.

To evaluate each site, a site summary was prepared using operational records, incident reports, site maps, decommissioning reports and personnel interviews. The site summaries include information about historical and current use and any information about the management and use of regulated radiological materials at the site. Volume II of the Area IV HSA contains all the site summaries that were developed.

Based on the information presented in the site summaries, all sites were classified either as radiologically impacted or non-impacted. Sites that had any indication of management or use of regulated radiological material were classified as impacted. All impacted sites were

¹ “Radiologically impacted” sites are those with a reasonable possibility of containing residual radioactivity in excess of natural background or fallout levels.

² “Radiologically non-impacted” sites as those where there is no reasonable possibility (extremely low probability) of residual contamination.

³ State of California Regulations (Title 17, Sections 30253 and 30256(k)(3))

⁴ Code of Federal Regulations (10CFR20.1501) and DOE Order 5400.5

⁵ Boeing and its predecessors assigned a unique number to each engineered item (e.g., building, electrical substation, guard shack, parking lot, lean-to, etc.) within Area IV. By defining a site as a numbered structure and its associated areas, the Area IV HSA is a temporally comprehensive evaluation of Area IV from its initial development to the present.

further evaluated to determine if the site had been released for unrestricted use by the appropriate regulatory agency. Sites that had been released went through a decision process to determine if additional soil surveys were necessary.

Impacted sites which have not been released were classified consistent with MARSSIM guidelines based on the degree of radiological impact. The three classifications of radiological impact were defined as:

- Class I sites potentially have or had radioactive contamination above the Derived Concentration Guideline Levels (DCGLs), i.e., release criterion.
- Class II sites potentially have or had radioactive contamination below DCGLs, but above 20% of the DCGLs.
- Class III sites potentially have or had radioactive contamination above background but below 20% of DCGLs.

As Area IV continues to undergo cleanup and remediation, the DOE is using the Area IV HSA to ensure all the sites in Area IV have been reviewed for potential radiological impacts and all impacted areas have been either:

- Surveyed and released and require no further action, or
- Identified as impacted and have not been released.
 - These sites require further action, per their MARSSIM classification.

Evaluations performed for the 272 sites in Area IV determined a total of 95 sites were distinguished as impacted or potentially impacted by radiological materials. Of the 95 impacted or potentially impacted sites, 68 have been previously released by the appropriate agency and require no further action, 27 sites require additional actions.

The review of historical activities involving radioactive materials within Santa Susana Field Laboratory Area IV is documented in this HSA to assist in determining what actions are necessary to allow for the future unrestricted use of the site. This document represents an important step toward ensuring the radiological cleanup of Area IV is completed using the accepted regulatory processes.