

Area IV of the Santa Susana Field Laboratory

SEC-00234

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Advisory Board on Radiation and Worker Health, 114th meeting

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Petition History

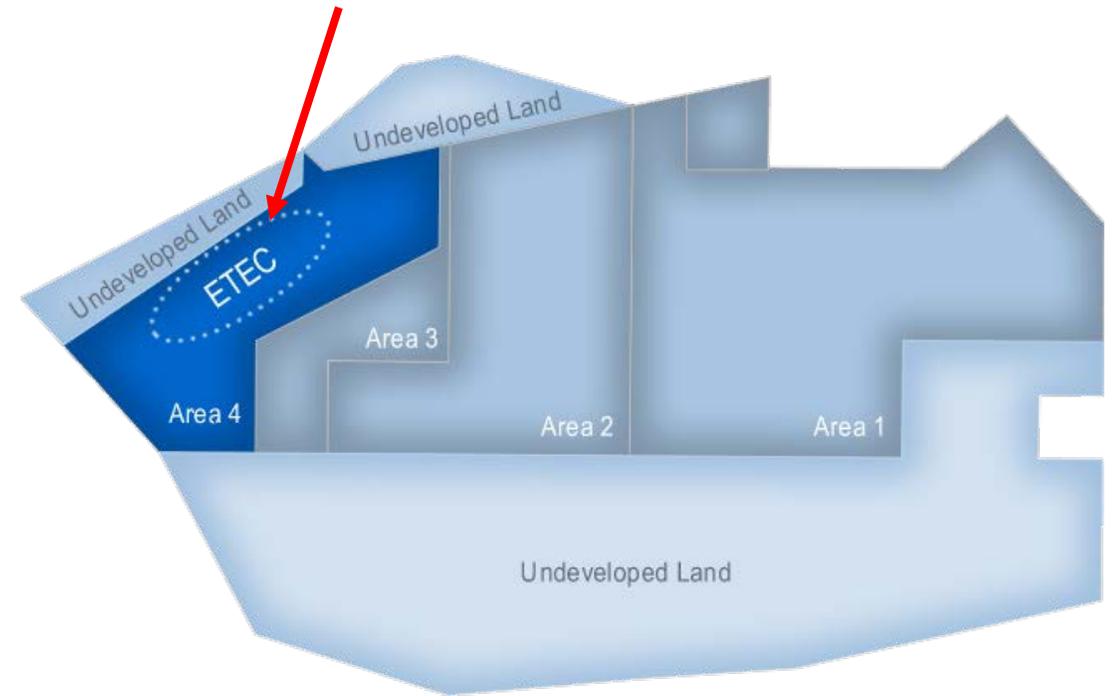
- SEC-00234 - NIOSH finding is dose reconstruction not feasible for existing claim
 - Claimant identified in July 19, 2016
 - Petition received on August 2, 2016
 - October 11, 2016 NIOSH evaluation report issued
- SEC-00093: class added to SEC for 1955-1958 based on lack of internal monitoring pre-1959
- SEC-00156: Class added to the SEC for 1959-1964 based on incomplete bioassay, air and process monitoring pre-1965

Site History

- Area IV established in 1953
 - In 1955 nuclear operations became Atomics International (AI)
 - Rocket testing operations became Rocketdyne
- AI merged with Rocketdyne in 1984 as part of Rockwell International
- Boeing-owned since 1996
- DOE operational part referred to as “ETEC”

Site History (cont.)

- 2,850 acres total
- Simi Hills, Ventura County; 30 miles northwest of Los Angeles
- 4 administrative and operational areas (Area I-IV)
- Area IV (290 acres) is the only covered area (ETEC)



Area IV SSFL - Site Operations

- Nuclear reactor programs, 1955-1980
 - Development and operation of 10 test reactors
 - Operation of criticality test facilities

- Nuclear support operations, 1956-present
 - Reactor fuel manufacturing
 - Disassembly of used reactors and fuels
 - Production of radioactive sources

Area IV SSFL - Site Operations

- Nuclear support operations - cont.
 - Reactor fuel manufacturing
 - Disassembly of used reactors and fuels
 - Production of radioactive sources
 - Research on fuel reprocessing
 - Preparation of waste for disposal
- Non-nuclear programs, 1966-1998
 - Liquid metal technologies

Rationale for Additional Class

- Continued evaluation and issues resolution of Area IV SSFL found exposure potential for Americium and Thorium
 - Am and Th not detected by available internal monitoring methods
- Internal coworker model is limited in scope
 - U, Pu, MFP
 - Does not address Th and progeny
 - Does not address ^{241}Am

Rationale for Additional Class - cont.

- Sources of Am and Th
 - Routine reactor operations, shutdowns, modifications, refueling
 - SRE, U-Th metal alloy core used from 1960-1964
 - AETR (1960-1974) used Th fuel cores
 - RMDF: used reactor fuel storage
 - Hot Lab: SRE fuel disassembly in 1974 and 1976
 - Research on fuel reprocessing in Engineering Test Building
 - Fuel decladding operations

Rationale for Additional Class - cont.

- Sources of Am and Th
 - Research involving special isotopes
 - Nuclear operations ended in 1980
 - Nuclear support operations ended in 1988

Sources of Available Information

- Site Profile and Technical Information Bulletins and Procedures
- NIOSH Site Research Data Base
- Existing claimant files
- Electronic data bases
- Interviews with former Area IV SSFL employees
- Scientific publications

Summary of Information Available for Dose Reconstruction

- Internal monitoring data
 - Gross alpha and beta
 - Uranium, plutonium, mixed fission products
 - Limited data available for Am-241 and Thorium
 - Internal monitoring limited to radiation workers handling unencapsulated material
 - Coworker models completed, but limited in scope

Summary of Information Available for Dose Reconstruction

- External monitoring data available for all years
- Assigned based on job/exposure potential
 - Beta/gamma: pocket or pencil dosimeters, film dosimeter and TLD
 - Neutron: NTA film, n:p ratio assigned
 - 4665 individuals enrolled in external dosimetry program (1955-1999)
 - NIOSH has developed external coworker model

Feasibility Conclusion

- NIOSH lacks sufficient monitoring, process or source information to estimate potential internal doses from thorium or americium from 1965 through 1988
- NIOSH believes that it has sufficient data to reconstruct external doses to all workers at the site
- NIOSH will use individual personal monitoring data or applicable coworker data for partial dose reconstructions as appropriate

Definition Finding

All employees of the Department of Energy, its predecessor agencies, and their contractors and subcontractors who worked in any area at Area IV of the Santa Susana Field Laboratory in Ventura County, California, from January 1, 1965 through December 31, 1988, for a number of work days aggregating at least 250 work days, occurring either solely under this employment or in combination with work days within the parameters established for one or more other classes of employees included in the Special Exposure Cohort.

Summary

Feasibility Findings for Area IV SSFL SEC-00234		
Source of Exposure	Dose Reconstruction Feasible	Dose Reconstruction NOT Feasible
Internal		
- Uranium, Plutonium, Mixed Fission Products	X (1965 present)	X (1958-1964)
- Americium, Thorium (and progeny)	X (1988-present)	X (1965-1988)
External		
-Beta-Gamma	X	
- Neutron	X	
- Occupational Medical X-ray	X	