



Sandia National Laboratories - Albuquerque SEC-00188 Addendum

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Advisory Board on Radiation and Worker Health (ABRWH) Work Group Meeting
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Summary of SEC-00188 Petition History

- Petition qualified (83.13) for evaluation: October 21, 2011
- Petitioner proposed class definition:

All Security Inspectors, Security Clerks, Firemen, Non-regular Recurrent Security Inspectors, Security Officers, Security Police Officers I, Security Police Officers II, Security Police Officers III, and Central Alarm System Operators that worked in any area at SNL-A for the period from January 1, 1963 through May 21, 2011
- NIOSH proposed the following class to be added to the SEC on February 21, 2012:

All personnel that worked in any area at Sandia National Laboratories in Albuquerque, New Mexico for the period from January 1, 1949 through December 31, 1994

Basis for 1949-1994 SEC Class

- Insufficient monitoring data and information to reconstruct internal dose from January 1, 1949 through December 31, 1994:
 - Lack of internal monitoring program documentation
 - Lack of internal monitoring data
 - Lack of process information
- External doses, including medical X-rays performed onsite as a condition of employment can be reconstructed

SEC-00188 Addendum

NIOSH committed to continue to evaluate and determine monitoring program completeness, sufficiency, and appropriateness for the entire SNL-A worker population for the January 1, 1995 through May 21, 2011 time period and document the results in an addendum

Data Sources Reviewed

- 17 interviews with 15 people
- 7 site data capture efforts since last SEC designation
- Over 800 relevant documents captured and reviewed since last SEC designation (over 5,400 total documents):
 - Internal memos
 - Radiation work permits
 - Radiological surveys
 - Incident reports
 - Air monitoring data
 - Internal dosimetry records
 - Breathing Zone (BZ) monitoring
 - Derived Air Concentration (DAC)-hour tracking

Data Sources Reviewed, cont.

- Fitness of monitoring program, data collection and availability, and program compliance
- Noncompliance Tracking System (NTS), site response, and corrective actions
- Occurrence Reporting and Processing System (ORPS)
- Internal assessments and procedures

NIOSH Proposed Class Extension

All employees that worked in any area at Sandia National Laboratories in Albuquerque, New Mexico, during the period from January 1, 1995 through December 31, 1996

Basis for Proposed Class Extension

- Internal monitoring program concerns
- Air monitoring data deficiencies

Internal Monitoring Program Development

- Internal monitoring had been performed on an ad hoc basis at SNL-A for decades prior
- Formalization of the internal monitoring program didn't begin until 1993
- First Interim Internal Dosimetry Policy established December 1993
- Internal Dosimetry Program was undergoing continual development and improvements
- In 1995 -1996 work included monitoring approach changes, procedure development, and data collection, review and retention formalization

Internal Monitoring Program Concerns

- Documented program assessments, internal memos, and interviews conducted by NIOSH with SNL-A employees revealed:
 - Insufficient staffing levels to meet program developmental tasks
 - Lack of a fully functional internal monitoring database for efficient and reliable record entry, retention, and retrieval (WebDose)
 - Internal Dosimetry manager stated in an internal memo and during an interview that there were data entry errors due to hand entry and a lack of adequate personnel to enter the data into the database

Air Monitoring Data Availability

- Internal monitoring program was transitioning from bioassay to the use of personal and area air monitoring
- Available air monitoring data for the 1995-1996 period is limited to hard copy records that NIOSH retrieved during data capture
- During 1995-1996 period, procedural requirements for air sampling records review and retention appear to have been minimal
- Personal air samples and DAC-hour results were not required to be routed to Internal Dosimetry for review until June 1996

Air Monitoring Data Availability, cont.

- Evidence of Individual DAC-hour tracking and accrual records are not available for 1995-1996
 - Not procedurally required until 1997
- Personal air monitoring data is not stored in the site's electronic monitoring records database (WebDose) for these years

Conclusions for 1995-1996 Dose Reconstruction Feasibility

- Uncertainties and concerns associated with the transitional and developmental nature of SNL-A's internal monitoring program exist in 1995 & 1996
- The site was making several improvements in the internal monitoring program including an increase in the use of personal and area air monitoring
 - However, the program seemed to lack formalization in that NIOSH did not find adequate evidence that some key implementing procedures were fully in place until 1996 & 1997

Conclusions for 1995-1996 Dose Reconstruction Feasibility, cont.

- Air monitoring data are judged insufficient due to a lack of required, record retention and review procedures during January 1, 1995 through December 31, 1996 period
- There was a lack of a fully functional internal monitoring database for efficient and reliable record entry, retention, and retrieval (WebDose)
- Based on this lack of data availability and internal monitoring program concerns, NIOSH has determine that dose reconstruction for internal doses at SNL-A for the 1995-1996 period is not feasible

Claims Affected by Proposed Class Extension

- 243 total claims for workers with employment in 1995 through 1996
- 5 claims have internal dosimetry data
- 95 claims have external dosimetry data

Feasibility Findings

SEC-00188, Addendum (January 1, 1995 – December 31, 1996)

| Source of Exposure | Dose Reconstruction <i>is</i> Feasible | Dose Reconstruction <i>not</i> Feasible |
|------------------------------|--|---|
| Internal | | |
| - all radionuclides | | X |
| External | | |
| - Beta-Gamma | X | |
| - Neutron | X | |
| - Occupational Medical X-ray | X | |

Summary of SEC-00188 Proposed Class Extension

NIOSH has determined that workplace monitoring data and documentation are insufficient to reconstruct internal doses from January 1, 1995 through December 31, 1996

NIOSH Proposed Class Extension

All employees that worked in any area at Sandia National Laboratories in Albuquerque, New Mexico, during the period from January 1, 1995 through December 31, 1996

Partial Dose Reconstructions

Although NIOSH found that it is not possible to reconstruct internal radiation doses for the period from January 1, 1995 to December 31, 1996, NIOSH intends to use any internal monitoring data that may become available for an individual claim

Continued SEC-00188 Analysis (1997 – 2011)

Evaluate and determine monitoring program completeness, sufficiency, and appropriateness for the entire SNL-A worker population for the 1997 through May 21, 2011 time period

- Recently identified issues in SNL-A's monitoring records database (WebDose) prevent NIOSH from presenting feasibility conclusions for the period from January 1, 1997 through May 21, 2011, within this Addendum
- NIOSH is analyzing an updated version of WebDose that was delivered in May 2018

Continued SEC-00188 Analysis (1997 – 2011), cont.

- NIOSH's analysis is ongoing and necessary to accurately assess and present internal monitoring data availability and sufficiency for the remaining time period
- NIOSH expects to be done with the Evaluation Report addendum by the end of 2018