

Assessment of Certain SEC-Related Issues for the Hanford Site – Review of NIOSH White Paper

Hanford Site Work Group Update

Meeting of the Advisory Board on Radiation and Worker Health
August 26–27, 2020

Background

- Original SEC petition SEC-00057 qualified for Jan. 1, 1942–Dec. 31, 1990; series of classes added, final ones in response to 83.14 petition for all Hanford workers, July 1, 1972–Dec. 31, 1983 (SEC-00201), and another for Hanford workers who did not work for one of the site prime contractors, DOE, or Pacific Northwest Laboratory.
- Remaining group to be evaluated are employees of named prime contractors as defined in SEC-00226 class definition.
- White paper issued Jan. 7, 2020; provides status of NIOSH assessment feasibility for remaining SEC-related issues.
- Work group met on April 14, 2020; SC&A presented its review, six SEC issues closed by work group.
- SC&A provided response to remaining open SEC issues (not related to co-exposure models) on June 24, 2020; work group closed two additional issues during August 13, 2020, work group meeting.

Hanford white paper: Conclusions

OVERALL: NIOSH has found “nothing contrary to the determination made in SEC-00201 ER that dose reconstruction was feasible from 1984 onward for employees of the prime contractor organizations, as defined in the SEC-00226 class definition.”

- Radionuclides of concern (ROC): No evidence of large-scale use of ROCs or any cases of “potential chronic source of intake.”
- Lack of routine monitoring data for non-chronic sources: Does not equate to dose reconstruction infeasibility. Conversely, existence of nuclide-specific data may indicate that a radiological incident occurred. Minor incidents were not significant internal dose contributors.
- Programmatic incident reporting: “Appropriate bioassay methods were available for all ROCs and were used when needed.”
- Workplace monitoring: “Backstopped” by routine bioassay program.

SC&A's Hanford evaluation focus (1984–1990)

Review for resolution of remaining Board Review System issues:

- **Key ROC: Source term/potential exposure**
 - Th-232 (issue 3)
 - HEU (issue 4)
 - U-233 (issue 7)
 - Np-237 (issue 9)
- **Programmatic issues: Exposure sources/adequacy of monitoring**
 - Special tritium compounds – STCs (issue 10): Any operational sources?
 - Skin contamination at N Reactor (issue 20): Adequate monitoring and records?
 - Minor radiological incidents (issue 22): Sufficient follow-up and bioassays?
 - Building 324 leaks (issue 27): Adequacy and completeness of internal monitoring data?

Work group resolution

- Closed ROC issues (Th-232, HEU, U-233, Np-237) and STC issue by establishing lack of operational source term or exposure potential
- Closed N Reactor skin contamination issue by demonstrating adequate monitoring and records
- Closed monitoring related to minor incidents by review of incident reporting and bioassay records
- Closed Building 324 leaks issue by review of reported incidents

Remaining issues

- **SEC:**

- Issues 14 (Pu intake estimation) and 23 (REX database adequacy): SEC-related, regarding co-exposure models

- **Site Profile:**

- Issues 6, 12, 19, & 25: non-SEC-related, regarding co-exposure models
- Issue 8: Intake estimation for recycled uranium
- Issue 18: external exposure geometries (generic issue)

NIOSH actions

- Complete Hanford co-exposure models based on implementation guide (scheduled for Oct. 2022)
- Once SEC issues resolved, revise site profile based on any changes made
- Any changes to be evaluated in a program evaluation report