Review of
SEC Petition Evaluation Report Addendum
Los Alamos National Laboratory

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Advisory Board on Radiation and Worker Health

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Background: LANL Special Exposure Cohort

- Petition 61, 1943–1963: NIOSH finds inability to dose reconstruct radioactive lanthanum exposures for specific LANL operations. Board recommends SEC class for potentially exposed workers (10/11/06).

- Petition 51, 1943–1975: NIOSH finds inability to dose reconstruct. Board recommends SEC class for all workers ("should have been monitored") (5/23/07).

- Petition 170, 1943–1975: NIOSH finds inability to dose reconstruct. Board recommends SEC class for all workers (6/11/10).

- Petition 109, 1976–1995: NIOSH finds inability to dose reconstruct exotic alpha emitters, mixed fission products (MFPs), and mixed activation products (MAPs). Board recommends SEC class for all workers (10/31/12).

  - **Addendum to Evaluation Report (ER), 1996–2005: NIOSH finds dose reconstruction (DR) with sufficient accuracy feasible for "Service Support Workers" given enactment of 10 CFR Part 835 requirements.**

SEC-00109 ER Addendum

- Original petition submitted April 2008; ER Addendum issued May 2017

- ER Period: January 1, 1996–December 31, 2005

- Addresses post-1995 unmonitored intakes of exotic alpha emitters, MAPs, MFPs (same as Rev. 01 of ER for 1976–1995)

- Service Support Workers (e.g., CTWs, security guards, firefighters, delivery persons, rad techs)

- January 1, 1996, was promulgation date for 10 CFR Part 835 for occupational radiation protection

- NIOSH presumes compliance with rule resolved DR limitations on which preceding SEC class was defined

SC&A Review: Lines of Inquiry

1. Is use of 10 CFR Part 835 presumption of compliance a valid basis for dose reconstruction feasibility? [DOE policy review]
2. Assuming the enactment date of January 1, 1996, is reasonable, what metrics can be applied to confirm or validate 10 CFR Part 835 implementation?

- Was radiation protection program fully defined, evaluated, and independently reviewed before enactment?

- Any evidence of post-1995 nonconformances with rule with substantive implications for DR?

- Any internal dosimetry program implementation issues prevalent after enactment of rule that may hamper DR?

Presumption-of-Compliance Criterion

- **Compliance** is not equivalent to **Implementation**.
- Reviewing actual dosimetry program implementation is important for DR because non-adherence or non-participation can lead to monitoring gaps.
- Reviewing oversight or compliance findings is necessary but not sufficient for establishing soundness of dosimetry programs.
- Improvements in internal dosimetry at DOE sites were evolutionary during 1990s – no uniform timing for full and successful conformance with all requirements.

Review of 10 CFR Part 835 Implementation at LANL

- Deliberate review, verification, and approval process followed before enactment of 10 CFR Part 835 in 1996
  - But uniform acceptance criteria lacking, wide latitude on interpretation
- Noncompliance Tracking System, ORPS, oversight issues reviewed – one 1999 noncompliance (NC ID 484) stands out: broad issues with internal dosimetry program, including 835.402(c)(1) violations regarding checklists, RWP job-specific bioassays, CTW bioassay enrollments
- Original bioassay inadequacies and lack of monitoring for MAPs and MFPs not demonstrably resolved by 1996
- Neptunium – scope of operations, source term, and exposure potential remain unsettled

Considerations

- Proposed "presumption of compliance" represents significant precedent; should presumed compliance preempt a deliberative review of program implementation?

- Significant noncompliances for LANL, Mound, and SRS in late 1990s regarding respective bioassay programs illustrate effective implementation took time.

- Continuity and coherency of technical evaluation is important – how are established bioassay deficiencies and air monitoring gaps resolved from past SEC period?