Review of
SEC Petition Evaluation Report Addendum
Los Alamos National Laboratory

Joe Fitzgerald, SC&A

Los Alamos National Laboratory Work Group
Teleconference Meeting
August 15, 2017
Work Group Members

- Josie Beach, Chair
- Bradley P. Clawson
- James E. Lockey, MD, MS
- Wanda I. Munn
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 109, 1976–2005: 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).
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 until DOELAP accreditation milestone (2002).
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 stands out: broad issues with internal dosimetry program, including 835.402(c)(1) violations: 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 regarding respective bioassay programs illustrate effective implementation took time; DOELAP accreditation is arguably only milestone based on full bioassay program functionality.
- Continuity and coherency of technical evaluation is important – how are established bioassay deficiencies and air monitoring gaps resolved from past SEC period?