Lawrence Berkeley National Laboratory (LBNL)

SC&A Review of the
NIOSH Site Profile Review

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BACKGROUND

- Site profile of LBNL issued by NIOSH on April 2, 2007 (revised version issued on May 10, 2010).
- SC&A tasked by Advisory Board to review site profile; conducted Jan-Oct 2009, and included onsite data capture and site expert interviews.
- SC&A draft report issued on January 22, 2010; contained 13 primary findings and 8 secondary findings.
- NIOSH issued SEC evaluation report for SEC-00160 on Jan 20, 2010; SEC subsequently approved for period 1942-1961.
- Advisory Board working group for LBNL met on Feb. 3, 2012 to begin review of SC&A site profile findings and NIOSH response.

FINDINGS

1. Inadequate documentation of historical operations and rad sources
2. Insufficient information to support internal dose reconstruction (e.g., MDA's)
3. Special forms of tritium and plutonium not addressed
4. External and internal dose records – legacy, completeness, accuracy not addressed adequately
5. Insufficient justification for selection of IREP energy range fractions for photon exposures (Table 6-2)
6. Insufficiency of neutron dosimetry treatment
7. Failure to justify the shallow dose: Deep dose assumption

FINDINGS (cont'd)

8. Uncertainty in beta-gamma dosimeter response to radiation types and energies
9. Medical x-ray exposures are uncertain.
10. Uncertainty of calculating internal doses prior to 1961.
11. Inadequacy of bioassay analyses presentation.
12. Failure to provide sufficient guidance for unmonitored workers.
13. Inadequate coverage of occupational environmental dose.

SC&A actions

- LBNL work group identified actions for both NIOSH and SC&A
- SC&A will be reviewing revised NIOSH site profile and other added technical documents, addressing:
  - Further review of LBNL dosimetry records regarding miminum detectable thresholds (MDA's) for specific radionuclides prior to 1961
  - How non-uniform exposures addressed
  - How shallow dose addressed
  - How tritides and high-fired Pu addressed
  - Further review of dose reconstruction approach for neutron exposures