St. Louis Airport Storage Site (SLAPS) Special Exposure Cohort

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Facility Designation

- St. Louis Airport Storage Site (SLAPS)
- Department of Energy site in St. Louis, MO
- January 3, 1947–73, 1984–98 covered time period

Site History

- From 1940s Manhattan Engineer District (MED) used 21.7-acre site north of the St. Louis International Airport to store residues from the processing of uranium ore
- Mallinckrodt Chemical Works sent residues to SLAPS from 1946–1953 and continued to store residues at SLAPS until production at Mallinckrodt stopped in 1966
- Most stored materials were removed from SLAPS from 1966–1969

Site History (cont.)

- St. Louis Airport Authority
  - Removed residues, above-ground structures
  - Added clean fill over remaining buried materials
  - Most work completed in 1969, completed final survey for turnover November 3, 1971
- City took over area in 1973
- DOE started managing property in 1984 under the Formerly Utilized Sites Remedial Action Program (FUSRAP)
- 1998 DOE transferred site to Army Corps of Engineers

Background

- Evaluation Report (ER) Rev.0 April 13, 2010
  - NIOSH recommended add class for January 3, 1947–November 2, 1971; Board agreed
  - NIOSH found dose reconstruction feasible
    - Remaining covered period, November 3, 1971 – December 31, 1973
    - January 1, 1984 – December 31, 1998
    - Board action postponed for further consideration
- Presented ER May 20, 2010 in Niagara Falls, NY
- Advisory Board voted to recommend class

Dose Reconstructions

NIOSH Claims Tracking System

(December 23, 2014)

- **Submitted to NIOSH** **3**
- **Within the SEC period (1947–1971)** **2**
- **DRs completed outside SEC period** **1**
- **Containing internal dosimetry** **1**
- **External dosimetry** **2**

Potential Exposures

- Site stagnant 1971–1973 with 1–3 feet of clean fill on the surface
  - Internal exposure only from radon from the clean fill.
  - External exposure from gamma emissions through clean fill
- 1984–1998 activities mostly environmental monitoring with some site maintenance
  - Potential internal/external exposure potential only from contaminated debris, residual source material from maintenance

Personal and Area Monitoring Data

- Internal monitoring data from November 3, 1971 – December 31, 1973
  - Before November 3, 1971 all buildings and source material removed from the site with 1 to 3 ft. clean fill dirt put over area
  - No personnel monitoring and air sampling data

Personal and Area Monitoring Data

(cont.)

- Internal monitoring January 1, 1984 – December 31, 1998
  - From 1984–1998 urine samples taken from workers involved in characterization and remedial action activities
  - Urine samples analyzed for thorium-230, thorium-232 and radium-226, as well as thorium-228 during some periods
  - Air sampling included breathing-zone
  - 1991 analysis to determine isotopic ratios of SLAPS soils

Personal and Area Monitoring Data

(cont.)

- External monitoring data November 3, 1971 – December 31, 1973
  - Before November 3, 1971 all buildings and source material removed site, 1 to 3 ft. clean-fill soil used to cover area
  - No personnel external monitoring data
  - Verification survey completed November 3, 1971 verifying no area at SLAPS exceeded 1 mrad/hr

Personal and Area Monitoring Data

(cont.)

- External monitoring data January 1, 1984 – December 31, 1998
  - From 1984–1998 workers involved were monitored for external radiation
  - Workers issued TLDs for 1985, 1987, 1988, and 1990 (Not all of the results for these years obtained)
  - 1986 summary report estimated worker exposure less than 20 mrem/yr

Dose Reconstruction

1971–1973 approach

- Only internal dose from radon applied using highest radon concentration from site remedial investigation
- External dose based on highest rate from the 1971 site survey, found highest external dose rate 1 mr/hr

Dose Reconstruction (cont.)

1984–1998 approach

- Use (when available) internal, external personal monitoring data
- If no personal internal monitoring data available for individuals, determine period internal exposure
  - Based on re-suspension of contaminated soil (OTIB-0070)
  - Develop co-worker model, if applicable
- If no personal external monitoring data available for individuals, determine period external exposure based on area monitoring or develop co-worker model

Questions?