

Review of Pantex Plant Remaining Site Profile Issues

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Advisory Board on Radiation and Worker Health

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Work Group Members

- Bradley P. Clawson, Chair
- Josie Beach
- John W. Poston, Sr.
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Background

- November 20, 2007: Petition qualified.
- August 8, 2008: NIOSH evaluation report issued.
- October 20, 2011: ABRWH recommends SEC for 1958–1983 – “NIOSH lacked adequate information necessary to complete individual [dose reconstructions] with sufficient accuracy for internal radiological exposures due to uranium...”
- August 28, 2013: ABRWH recommends SEC for 1983–1991 – NIOSH lacked sufficient information to estimate “internal doses from potential exposure to uranium and thorium related to the disassembly of weapons systems during the time period from 1984 through 1990, and to thorium in 1991.”
- Board concurs with NIOSH that dose reconstruction feasible for 1951–1957.

Administrative Review: 1951–1957

- NIOSH concluded and Board agreed that dose reconstruction feasible for early years (1951–1957) based on negligible depleted uranium (DU) contamination from weapons components.
- Petitioner appealed determination to HHS Secretary; administrative review panel appointed.
- Panel concluded that petitioner's appeal had merit based on potential DU contamination, presence of radionuclides beyond DU, and onsite activities that could present exposure potential to workers.
- SEC designation made by HHS Secretary for Jan. 1, 1951–Dec. 31, 1957; noticed in *Federal Register* on Jan. 19, 2017.

Site Profile Issues: Final Status

1. Adequacy of Internal Dose Records – Closed at June 2013 WG
2. Internal Dose Models for Uranium – Closed at June 2013 WG
3. Dose Estimate Approach for Plutonium – Closed
4. Dose Estimate Approach for Thorium – Closed at June 2013 WG
5. Internal Dose Approach for Metal Tritides – Closed
6. Interpretation of External Dosimetry Data* – Closed at August 4, 2016, WG
7. Neutron-to-Photon Ratio Not Bounding – Closed (pending verification) at August 4, 2016, WG
8. Completeness of Exposure Sources* – Closed at August 4, 2016, WG
9. Incidents Cited Limited, Incomplete* – Closed at Sept. 4, 2014, WG

* Encompassed by SC&A white paper/NIOSH response.

Site Profile Issues: Final Status (cont.)

10. Inadequate Consideration Given to Firing Sites – Closed at June 2013 WG
11. Validation Whether Most Exposed Workers Badged – Closed
12. Accuracy of Plant Exposure Data (petitioner issue) – Closed
13. Too Few Workers Monitored for Valid Dose Reconstruction (petitioner issue)* – Closed at Sept 4, 2014, WG
14. Records Incomplete for Subcontractors, Temps, Short-term Employees (petitioner issue) – Closed
15. Exposure from Tritium Leaks (petitioner issue)* – Closed at August 4, 2016, WG
16. Badge Placement (petitioner issue) – Closed at Sept 4, 2014, WG
17. Efficacy of Health Physics and Industrial Hygiene Programs (petitioner issue) – Merged with Other Matrix Issues – Closed at June 2013 WG

* Encompassed by SC&A white paper/NIOSH response.

Final TBD Issue Resolution

(SC&A evaluation, Feb 2016)

ORAUT-TKBS-0013-6, Rev. 02, External Dose TBD, issued 11/24/2015

- Rev. 02 included revisions for:
 - Issue 8: Additional information added accounting for “work-for-others” – Closed by WG at 8/4/2016 meeting.
 - Issue 6: Clarification needed for “zeros” in database – Closed by WG at 8/4/2016 meeting.
 - Issue 7: Basis for NTA film correction factors needs more substantiation – Open.

ORAUT-TKBS-0013-5, Rev. 04, Internal Dose TBD, issued 6/1/2015

- Issue 15: Tritium exposure: Limits used vs. actual minimum detectable activities (MDAs); NIOSH agreed to revise tables and text in Internal Dose TBD to reflect actual Pantex MDA values, simplified dose assignment – Closed by WG at 8/4/2016 meeting.

Last WG Meeting: Pended Closure

- Issue 7: WG closure pending SC&A review of correction factors, including 4/18/2011 white paper (Ruhter et al.)* describing technical basis for NTA film neutron dose correction factors.
 - SC&A provided evaluation of TBD (Rev. 02) and ORAUT-OTIB-0086 NTA film correction factor issues (10/19/2016): SC&A found NTA film correction factor of 2.9 reasonable.
- With pended closure verified by SC&A, all TBD issues for Pantex resolved.

* Ruhter, Paul E., Billy P. Smith, and Leo G. Faust, M. H. Chew & Associates, Inc., *Pantex NTA Film Issues and Dose Assignments to Monitored and Unmonitored Workers*. April 18, 2011.