

ORAUT-OTIB-0052

Parameters to Consider When Processing Claims for Construction Trade Workers

Report from the Procedures Review Subcommittee

Presented to the
Advisory Board on Radiation and Worker Health
Full Board Meeting Held in Augusta, Georgia

March 12, 2013

ORAUT-OTIB-0052 Summary

Exposures to construction trade workers (CTWs) are different from most other workers at a site by virtue of nature of employment and exposure – frequently short term but with a high dose rate

As such, exposure data from other workers may not apply to CTWs

ORAUT-OTIB-0052 Summary, Continued

This procedure provides guidance for developing a coworker model for unmonitored CTW and compares doses received by monitored CTWs to doses received by all monitored workers (AMWs)

For the DOE complex, most internal and external annual doses received by CTWs are bounded by those received by AMWs

When CTWs doses exceeded those of AMWs, OTIB-0052 provides a claimant-favorable adjustment factor based on the ratio of CTW to AMW monitored doses

ORAUT-OTIB-0052 Timeline

Aug 31, 2006 – Revision 0

July 2007 – SC&A Review of Revision 0

August 29, 2007 to October 14, 2008 –
Five WG/SC discussions

Feb 17, 2011 – Revision 1

July 2011 – SC&A Review of Revision 1

ORAUT-OTIB-0052, Revision 0

Used to calculate coworker doses

Not directly used in dose reconstructions

Recommends –

- CTW coworker external doses be 1.4 times AMW doses
- CTW coworker internal doses be equal to AMW doses, except for Hanford

Based on data from SRS, Y-12, K-25, RFP, INL, and Hanford

- (over 1 million histories, with over 215,000 CTW histories)

Findings Summary: OTIB-0052

16 Findings in total– complete histories captured in the Board Review System (BRS)

<http://app-cinc-dcas.cdc.gov:8106/documents/default.aspx?mode=ASSIGNED>

15 findings are Closed; one is in Abeyance

Resolution spanned 5 Years; July 2007 – July 2012

The following slides provide summary information on resolution of each Finding – Details in BRS and handout

OTIB-0052 Review Findings

#	Finding	Resolution
1	Does not address differences in doses received by different construction occupations.	November 14, 2011 - Closed NIOSH added a paragraph to ORAUT-OTIB-0020 explaining that for routinely exposed workers (i.e., workers who were expected to have been monitored), the 95th-percentile dose should be applied.
2	The dose databases used are lacking significant data during the early operational years.	June 2008 - Closed NIOSH concurs with SC&A in their July 30, 2007 report where on page 77 they postulate a reason for relatively low CTW exposure during early years of site operations.

OTIB-0052 Review Findings

#	Finding	Resolution
3	The dose databases do not always identify who were CTWs, and for CTWs, what were their occupations.	June 2008 – Closed SC&A agrees with the NIOSH Initial Response that the dose databases constitute the best available source of information for a large population. The Subcommittee concluded that the issue should be Closed.
4	NIOSH did not make modifications to the internal dose calculation methodology, as they indicated to the Center to Protect Workers' Rights (CPWR) that they would.	June 2008 – Closed While developing OTIB-0052 NIOSH determined that a better course of action was to use actual CTW bioassay data rather than assumed intakes based on air concentration (which was the basis for the CPWR discussions).

OTIB-0052 Review Findings

#	Finding	Resolution
5	Plutonium and/or uranium were used to compare internal CTW to AMW doses. What about other radionuclides?	July 14, 2011 – Closed In Revision 1, NIOSH placed a limitation on the use of the internal dose reconstruction portions of ORAUT-OTIB-0052. Closed based on the change made by NIOSH in Revision and SC&A's concurrence.
6	Does not address how to determine CTW doses at sites that do not have a coworker OTIB.	June 24, 2008 – Closed SC&A agrees with the NIOSH Initial Response that for sites lacking coworker studies, the dose for unmonitored CTWs is reconstructed in the same way as other unmonitored workers with a potential for exposure or intakes.

OTIB-0052 Review Findings

#	Finding	Resolution
7	Does not address how to determine neutron CTW doses.	June 24, 2008 – Closed SC&A agrees with the NIOSH Initial Response (provided in August 2007) that external doses were not intentionally differentiated according to gamma or neutron doses.
8	All SRS external doses are from the HPAREH. Need to evaluate other dose databases, e.g., Fayerweather, SRSABST.	June 24, 2008 – Closed SC&A agrees with the NIOSH Initial Response (provided in August 2007) that the HPAREH was shown to be claimant favorable relative to the other SRS databases.

OTIB-0052 Review Findings

#	Finding	Resolution
9	Evaluation is based on DOE annual exposure report. Need to address the MUD dose database for INL.	<p>July 14, 2011 – Closed</p> <p>Closed based on SC&A's concurrence that the data in the Annual Reports is equivalent to the MUD data for the overlapping time periods.</p>
10	For post-1974 ratio of penetrating doses experienced by CTWs to other workers in OTIB-0052, does not agree with NIOSH 2005 (INL EPI study), which indicates a correction factor closer to 2, and perhaps greater for some job types.	<p>July 14, 2011 – Closed</p> <p>Closed based on a clarifying statement that NIOSH added to OTIB-0052 Rev 1, Section 5.13.</p>
11	Claimant favorability of OTIB-0052 approach for INL early period internal dose (to 1965) cannot be determined.	<p>July 14, 2011 – Closed</p> <p>Closed based on the statement that NIOSH added to OTIB-0052 Rev 1, Section 5.14.</p>

OTIB-0052 Review Findings

#	Finding	Resolution
12	The REX dose database was not used. Need to evaluate results based on the REX database to those given.	In December 2011, NIOSH proposed an editorial change to replace the current wording in Section 6 of Rev. 01. NOTE: This agreed upon wording has not yet been inserted into OTIB-0052, so the status of this finding is In Abeyance, rather than Closed.
13	The CTW doses need to be compared consistently to either AMWs or Non-CTWs. Currently, different sections perform different comparisons.	April 10, 2012 – Closed NIOSH demonstrated that this had a minor effect on the results (i.e., less than the margin of uncertainty for dosimetry programs, ~30%). Subcommittee changed status to Closed

OTIB-0052 Review Findings

#	Finding	Resolution
14	<p>The handling of 'missing dose' needs to be consistent. Currently, some sections include 'missing dose' while others do not.</p>	<p>July 31, 2012 – Closed</p> <p>NIOSH demonstrated that the inclusion of missed dose had a minor effect on the CTW to AMW ratio (i.e., less than the margin of uncertainty for dosimetry programs, ~30%).</p>
15	<p>No instructions are given as to what to do if high or low cumulative exposures are suspected.</p>	<p>April 11, 2012 – Closed</p> <p>Transferred to OTIB-0020; Statement added to OTIB-0020 to alert the dose reconstructor that certain CTWs may need special consideration. (See the discussion under Finding 1.)</p>
16	<p>Some construction occupations (e.g., pipefitters) receive exposures larger than the average CTW exposure, and may receive exposures above the 95th percentile CTW exposure.</p>	<p>April 11, 2012 – Closed</p> <p>Transferred to OTIB-0020; Statement added to OTIB-0020 to alert the dose reconstructor that certain CTWs may need special consideration. (See the discussion under Finding 1.)</p>

Questions?