

ORAUT-OTIB-0010

A Standard Complex-Wide Methodology for Overestimating External Doses Measured with Film Badge Dosimeters

Report from the Procedures Review Subcommittee

Presented to the
Advisory Board on Radiation and Worker Health
Denver, Colorado

October, 2013

ORAUT-OTIB-0010 Summary

- The objectives of this document are:
 - **(1) evaluate the degree of standardization of typical DOE film dosimeters and**
 - **(2) develop a standard methodology for use by the DR to assign a dose that will result in a reasonable overestimate of the organ dose.**
- Because the intent is to overestimate the dose for a quick evaluation of the potential for compensability, the proposed methodology is useful only for claims that are judged to be likely-noncompensable.

ORAUT-OTIB-0010 Timeline

- January 12, 2004 – NIOSH Issued Revision 0
- January 17, 2005 – SC&A Review (SCA-TR-Task3)
- October 11, 2005 – NIOSH Initial Response
- July 26, 2006; June 24, 2008 – Discussed at Subcommittee Meetings; Findings Resolved
- June 5, 2006 – NIOSH Issued Revision 1, incorporated resolution of SC&A 1/17/2005 findings. This revision results in no change to the assigned dose and no PER was required.

Findings Summary: ORAUT-OTIB-0010

- 10 Findings in total – complete histories captured in the Board Review System (BRS)
 - <http://app-cinc-dcas.cdc.gov:8106/documents/default.aspx?mode=ASSIGNED>
 - Resolution spanned 18 months (1/2005 to 6/2006)
 - All 10 findings are Closed
- The following slides provide summary information on the resolution of each Finding – Details in BRS and handout.

ORAUT-OTIB-0010 Review Findings

#	Finding	Resolution
1	Guidance lacking for how to treat missed dosimetry data in which the number of zero readings is fewer than 12 cycles.	<p>Closed on June 24, 2008.</p> <p>Revision 1 provides guidance on how to handle missed (or zero) dosimetry data.</p>
2	Guidance fails to acknowledge that missed dose based on LOD (as opposed to LOD/2) represents 95 th percentile and requires no uncertainty.	<p>Closed on June 24, 2008.</p> <p>Revision 1 new Table 2-1 provides specific instructions to the DR regarding how the recorded and missed dose should be calculated and entered into IREP.</p>

ORAUT-OTIB-0010 Review Findings

#	Finding	Resolution
3	Document contains too much upfront background information and does not provide DR with guidance for maximizing external dose until page 8.	Closed on June 24, 2008. In Revision 1 relevant background and technical basis information has been moved to the end of the document and incorporated into new Attachment A.
4	Upfront background information not relevant to implementation of procedure.	

ORAUT-OTIB-0010 Review Findings

#	Finding	Resolution
5	Guidance does not address how to use the standard correction factor when recorded dosimeter dose is greater than zero but less the LOD (i.e., 40 mrem).	Closed on June 24, 2008. Revision 1 specifies the use of 40 mrem as a reasonable default LOD.
6	Guidance fails to acknowledge that the use of the standard correction factor eliminates the need for uncertainty.	Closed on June 24, 2008. Revision 1 new Table 2-1 provides very specific instructions to the DR regarding calculating uncertainty and how the dose data should be entered into IREP.

ORAUT-OTIB-0010 Review Findings

#	Finding	Resolution
7	Guidance provided in OTIB-0010 differs from instructions in Section 5.0 of ORAUT-PROC-0006. (PROC-006 does not employ standard correction factor (SCF) to dosimeter dose but does apply uncertainty; OTIB-0010 uses SCF with no uncertainty.)	Closed on June 24, 2008. PROC-0006 was completely revised June 5, 2006 and no longer contains guidance that is inconsistent with OTIB-0010.
8	OTIB does not identify its hierarchical position among competing procedures; for example, does the DR have the option to use either ORAUT-OTIB-0010 or Attachment D-2 of ORAUT-PROC-0006.	Closed on June 24, 2008. PROC-0006, Attachment D-2 has been eliminated and PROC-0006, Section 5.1.1 refers the DR to OTIB-0010, when appropriate.

ORAUT-OTIB-0010 Review Findings

#	Finding	Resolution
9	A standard correction factor of 2, which is described as encompassing a great deal of errors, does not actually appear to be excessively conservative based on NRC 1989 report.	Closed on July 26, 2006. A standard correction factor of 2 for every recorded dose is considered to be sufficiently conservative.
10	The use of a default LOD value of 40 mR should be considered a typical value as opposed to a highly conservative one.	Closed on July 26, 2006. An assumed LOD of 40 mR for gamma radiation is reasonably claimant-favorable assumption and when combined with the assumed monthly zeros it ensures missed dose is over-estimated.

Questions?