



## MEMORANDUM

TO: INL Work Group  
FROM: SC&A, Inc.  
DATE: June 28, 2016  
SUBJECT: Status of OTIBs Identified in Section 4.2 of Argonne National Laboratory–West (ANL-W) Special Exposure Cohort (SEC) Evaluation Report (ER)

---

**ORAUT-OTIB-0005, Revision 05:** *Internal Dosimetry Organ, External Dosimetry Organ, and IREP Model Selection by ICD-9 Code*, December 20, 2012; SRDB Ref. ID 121336

- SC&A’s Review of ORAUT-OTIB-0005: SC&A initially reviewed OTIB-0005, Revision 01 under the 1st Set of Procedure Reviews, dated January 17, 2005 (SCA-TR-Task3). Three findings were identified as a result of the review. At the July 31, 2012, Procedures Review Subcommittee Meeting (PRSC) meeting, SC&A was tasked to do a pre-review of OTIB-0005, Revision 04. Based on the pre-review, it was determined that a full review was not necessary. SC&A has not been tasked to review OTIB-0005, Revision 05.
- ORAUT-OTIB-0005, Revision 05 Summary: Adds chronic lymphocytic leukemia (CLL) as radiogenic cancer. Clarifies Section 4.9 on comparisons of upper large intestine (ULI) and lower large intestine (LLI). Update Table 3-1 to add 5th digit in ICD-9 codes for 173 (skin cancer), add clarification to Section 4.7 for same. Updates ICD-9 codes 150.1 and 150.9 (esophagus) to clarify that stomach is not appropriate for either code since location is either thoracic or unspecified. Adds discussion of ICD-9 code 199 (malignant neoplasm nos) in Section 3.2.
- Status of Findings: There are no outstanding findings from the review of OTIB-0005, Revision 01.
- SC&A’s Recommendation Regarding the Impact of Revision 05 on the SEC ER: Based on the revisions that were made to ORAUT-OTIB-0005 on December 20, 2012, as summarized above, there are no additions and modifications that would have an impact on the ANL-W SEC class determination. Therefore, SC&A does not recommend reviewing Revision 05 in association with the SEC ER.

**ORAUT-OTIB-0011, Revision 00:** *Technical Information Bulletin: Tritium Calculated and Missed Dose Estimates*, June 29, 2004; SRDB Ref. ID 19430

- SC&A’s Review of ORAUT-OTIB-0011, Revision 00: SC&A reviewed OTIB-0011, Revision 00 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). Two findings were identified as a result of the review.
- Status of Findings: The two findings were discussed and closed at the August 2008 PRSC meeting. There are no outstanding findings.

**ORAUT-OTIB-0014, Revision 00:** *Assignment of Environmental Internal Doses for Employees Not Exposed to Airborne Radionuclides in the Workplace*, June 22, 2004; SRDB Ref. ID 19432

- SC&A's Review of ORAUT-OTIB-0014, Revision 00: SC&A reviewed OTIB-0014, Revision 00 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). One finding was identified as a result of the review.
- Status of Findings: The one finding was discussed and closed at the August 2008 PRSC meeting. There are no outstanding findings.

**ORAUT-OTIB-0017, Revision 01:** *Interpretation of Dosimetry Data for Assignment of Shallow Dose*, October 11, 2005; SRDB Ref. ID 19434

- SC&A's Review of ORAUT-OTIB-0017, Revision 01: SC&A reviewed OTIB-0017, Revision 01 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). Fifteen findings were identified as a result of the review.
- Status of Findings: There is **one** outstanding finding "In Abeyance." This finding states that the logical order of Chapter 3 of the OTIB needs improvement/clarity. The National Institute for Occupational Safety and Health (NIOSH) has agreed to make the change during the next revision.

**ORAUT-OTIB-0018, Revision 01:** *Internal Dose Overestimates for Facilities with Air Sampling Programs*, August 9, 2005; SRDB Ref. ID 19436

- SC&A's Review of ORAUT-OTIB-0018, Revision 01: SC&A reviewed OTIB-0018, Revision 01 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). Seven findings were identified as a result of the review.
- Status of Findings: There are currently **four** outstanding findings:
  - One finding "In Progress" awaiting NIOSH response to questions regarding (a) does list of radionuclides include all worst case radionuclides, (b) does 10% of maximum permissible concentration (MPC) account for time dependence, and (c) what does it mean to have a "robust" air sampling program.
  - One finding "In Abeyance" awaiting a NIOSH revision to OTIB-0018, which specifies that thoracic lymph nodes (LN(TH)) and extrathoracic lymph nodes (LN(ET)) may not provide an overestimate to respiratory tract organs.
  - Two findings "Transferred"; one finding transferred to a special recycled uranium (RU) study, and one finding transferred to a review of OCAS-TIB-009.

**ORAUT-OTIB-0023, Revision 01:** *Assignment of Missed Neutron Doses Based on Dosimeter Records*, May 14, 2008; SRDB Ref. ID 43937

- SC&A's Review of ORAUT-OTIB-0023, Revision 01: SC&A initially reviewed OTIB-0023, Revision 00 under the 2nd Set of Procedures, dated August 3, 2007 (SCA-TASK3-0001). Eight findings were identified as a result of the review.
- ORAUT-OTIB-0023, Revision 01 Summary: Revision incorporated findings from the review of OTIB-0023, Revision 00 conducted under the purview of the PRSC and included the alignment of page changes to be consistent with OCAS-IG-001. Added minor editorial changes for consistency with current requirements, including the addition of an Acronym and Abbreviations list, incorporating an Introduction section to include standard OTIB language, and updating section numbers.
- Status of Findings: With the publication of Revision 01 of OTIB-0023, the PRSC was able to close the eight findings associated with the review of Revision 00. Since OTIB-0023, Revision 01 was initiated primarily due to the findings identified in the review of OTIB-0023, Revision 00, there was no need for SC&A to perform a further review of Revision 01 other than to confirm that the Revision 01 changes properly addressed our initial concerns.

**ORAUT-OTIB-0033, Revision 00:** *Application of Internal Doses Based on Claimant-Favorable Assumptions for Processing as Best Estimates*, April 20, 2005; SRDB Ref. ID 19457

- SC&A's Review of ORAUT-OTIB-0033, Revision 00: SC&A reviewed OTIB-0033, Revision 00 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). One finding was identified as a result of the review. This finding states that the OTIB requires a considerable amount of judgment to be used by the dose reconstructor in assigning workers to a given exposure category and determining how to best use coworker data and perform missed dose calculations.
- Status of Findings: NIOSH responded to the finding by including additional information regarding the use of OTIB-0033, which satisfied SC&A. However, the **one** finding remains "In Progress" awaiting comments by the PRSC (at the time, Mark Griffon wanted to review and comment).

**ORAUT-OTIB-0049, Revision 01 PC-2:** *Estimating Doses for Plutonium Strongly Retained in the Lung*, November 29, 2010; SRDB Ref. ID 90666

- SC&A's Review of ORAUT-OTIB-0049, Revision 00 under the 3rd Set of Procedure Reviews, dated October 29, 2007 (SCA-TASK3-0003). Two findings were identified as a result of the review. The first finding identified the need for clarity and references. The second finding questioned (a) the methods for applying doses from coworker studies and (b) calculating doses from urinalysis data with only a single intake or chronic intakes with time gaps between them.

During discussion of these findings, NIOSH issued Revision 01(December 18, 2007) and Revision 01 PC-1 (September 26, 2008), which were reviewed by SC&A to determine if the initial findings were resolved. Although NIOSH did adequately address the issue regarding the application of Super S adjustment factors to coworker-derived intakes, the question associated with intakes from urinalysis data was not addressed.

- **Status of Findings:** Currently, there are **two** outstanding findings: one finding regarding clarity of OTIB-0049 is “In Progress” awaiting a NIOSH response and the second finding to be “Addressed in Finding #1” will be resolved when NIOSH properly addresses Finding 1.

**ORAUT-OTIB-0054, Revision 02:** *Fission and Activation Product Assignment for Internal Dose-Related Gross Beta and Gross Gamma Analyses*, March 6, 2014; SRDB Ref. ID 130852

- **SC&A’s Review of ORAUT-OTIB-0054:** SC&A initially reviewed ORAUT-OTIB-0054, Revision 00 PC-1 in March 2008 (SCA-TR-TASK3-0006) and Revision 01 in November 2013 (SCA-TR-PR2013-0084). There were 26 findings identified as a result of the Revision 00 PC-1 review and 10 findings associated with the review of Revision 01. SC&A has not been tasked with the review of ORAUT-OTIB-0054, Revision 02.
- **ORAUT-OTIB-0054, Revision 02 Summary:** Revision 02 initiated to correct an error with the promethium-147 (Pm-147) intake fractions in Tables 7-3b and 7-3c, which had mistakenly been entered as zeros.
- **Status of Findings:** All 36 findings have been resolved and closed at various Procedures Subcommittee meetings.
- **SC&A’s Recommendation Regarding the Impact of Revision 02 on the SEC ER.** Based on the revisions that were made to ORAUT-OTIB-0054 on March 6, 2014, as cited above, it is recommended that SC&A be tasked with performing a highly focused review to ensure that the revised Pm-147 intake fractions in Tables 7-3b and 7-3c were calculated and entered correctly, since these values may have an impact on the ANL-W SEC class determination.

**ORAUT-OTIB-0060, Revision 00:** *Internal Dose Reconstruction*, February 6, 2007; SRDB Ref. ID 29984

- **SC&A’s Review of ORAUT-OTIB-0060, Revision 00:** SC&A reviewed OTIB-0060, Revision 00 under the 3rd Set of Procedure Reviews, dated October 29, 2007 (SCA-TASK3-0003). Seven findings were identified as a result of the review.
- **Status of Findings:** Six of the seven findings have been closed. Finding 2 is “In Abeyance” awaiting a revision to OTIB-0060, which would change the wording to provide more clarity and consistent terminology.

**ORAUT-OTIB-0079, Revision 00:** *Guidance on Assigning Occupational X-Ray Dose under EEOICPA for X-Rays Administered Off Site*, January 3, 2011; SRDB Ref. ID 89563

- SC&A's Review of ORAUT-OTIB-0079, Revision 00: SC&A reviewed OTIB-0079, Revision 00 in January 2013 (SCA-TR-PR2013-0079). There were no findings identified as a result of the review.

**ORAUT-OTIB-0082, Revision 00 PC-1:** *Dose Reconstruction Method for Chronic Lymphocytic Leukemia*, December 20, 2012; SRDB Ref. ID 121337

- SC&A's Review of OTIB-0082, Revision 00 PC-1: SC&A reviewed OTIB-0082, Revision 00 PC-1 in October 2014 (SCA-TR-PR2014-0091). There were no findings identified as a result of the review.

**OCAS-TIB-009, Revision 00:** *Estimation of Ingestion Intakes*, April 13, 2004; SRDB Ref. ID 22397

- SC&A's Review of OCAS-TIB-009, Revision 00: SC&A reviewed TIB-009, Revision 00 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). One finding was identified as a result of the review regarding the hand-to-mouth ingestion pathway. This finding was moved to and resolved by the PRSC under overarching or global issues.
- Status of Findings: There are no outstanding findings.

**ORAUT-PROC-0060, Revision 01:** *Occupational On-Site Ambient Dose Reconstruction for DOE Sites*, June 28, 2006; SRDB Ref. ID 29986

- SC&A's Review of ORAUT-PROC-0060: SC&A initially reviewed PROC-0060, Revision 00 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). One finding was identified as a result of this review regarding calculating maximum doses when there are no data. This finding was classified as "In Abeyance" until the procedure was revised. SC&A reviewed OTIB-0060, Revision 01 under the 3rd Set of Procedure Reviews, dated October 29, 2007 (SCA-TASK3-0003). Two findings were identified as a result of the review of Revision 02.
- Status of Findings: The current status of the **two** findings is summarized below:
  - Finding 2 states that the first finding identified during the review of PROC-0060, Revision 00 (i.e., calculating maximum doses when there are no data) was not addressed in Revision 01. Therefore, this finding remains "In Abeyance" awaiting another revision to PROC-0060.
  - Finding 3 identified a number of discrepancies regarding ambient doses listed in Attachment B. This finding is "In Abeyance" awaiting a revision to PROC-0060.

**ORAUT-PROC-0061, Revision 03:** *Occupational Medical X-Ray Dose Reconstruction for DOE Sites*, Revision 03, March 3, 2010; SRDB Ref. ID 79758

- SC&A's Review of ORAUT-PROC-0061: SC&A initially reviewed PROC-0061, Revision 00 under the 2nd Set of Procedure Reviews, dated August 3, 2007 (SCA-TASK3-0001). Six findings were identified as a result of this review. All six findings were resolved and closed at various PRSC meetings. At the November 5, 2012, PRSC meeting, SC&A was tasked to perform a pre-review of ORAUT-PROC-0061, Revision 03. Based on SC&A's pre-review, the PRSC determined that, due to the modest changes in dose, there was no need to task SC&A with a full review of PROC-0061, Revision 03.
- Status of Findings: There are no outstanding findings.

## References

OCAS-IG-001. 2007. *External Dose Reconstruction Implementation Guideline*, Office of Compensation Analysis and Support, Cincinnati, Ohio. November 21, 2007.

OCAS-TIB-009. 2004. *Estimation of Ingestion Intakes*, Office of Compensation Analysis and Support. April 13, 2004.

SCA-TR-Task3. 2005. *The Review of NIOSH/ORAUT Procedures and Methods Used for Dose Reconstruction*, SC&A, Inc., Vienna, Virginia. January 17, 2005.

SCA-TR-TASK3-0001. 2007. *Review of NIOSH/ORAUT Procedures and Methods Used for Dose Reconstruction, Supplement 1*, SC&A, Inc., Vienna, Virginia. August 3, 2007.

SCA-TR-TASK3-0003. 2007. *Review of the Third Set of Procedures (45 procedure reviews)*, SC&A, Inc., Vienna, Virginia. October 29, 2007.

SCA-TR-TASK3-0006. 2008. *Review of ORAUT-OTIB-0054, Fission and Activation Product Assignment for Internal Dose-Related Gross Beta and Gross Gamma Analyses, Revision 0 PC-1*, SC&A, Inc., Vienna, Virginia. March 17, 2008.

SCA-TR-PR2013-0079. 2013. *Draft Review of ORAUT-OTIB-0079: Guidance on Assigning Occupational X-Ray Dose Under EEOICPA for X-Rays Administered Off Site*, SC&A, Inc., Vienna, Virginia. January 25, 2013.

SCA-TR-PR2013-0084. 2013. *Review of ORAUT-OTIB-0054, Fission and Activation Product Assignment for Internal Dose-Related Gross Beta and Gross Gamma Analyses, Revision 1*, SC&A, Inc., Vienna, Virginia. November 5, 2013.

SCA-TR-PR2014-0091. 2014. *A Limited Review of ORAUT-OTIB-0082, Revision 00 PC-1, Dose Reconstruction Method for Chronic Lymphocytic Leukemia*, SC&A, Inc., Vienna, Virginia. October 6, 2014.