



A Review of ORAUT-TKBS-0003-3 for Savannah River Site – Occupational Medical Dose

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ORAUT-TKBS-0003-3 revisions

- ◆ Revisions 00 through 03 were issued along with other sections of Savannah River Site (SRS) site profile ORAUT-TKBS-0003:
 - July 15, 2003: revision 00
 - August 21, 2003: revision 01
 - October 29, 2004: revision 02
 - April 5, 2005: revision 03
- ◆ Revisions 04, 05, and 06 were issued as standalone document ORAUT-TKBS-0003-3:
 - November 30, 2009: revision 04
 - March 5, 2024: revision 05
 - September 12, 2024: revision 06 (“TBD-3”)

ORAUT-TKBS-0003-3, rev. 06, source of data

- ◆ NIOSH obtained occupational medical examination frequency and x-ray machine technical information from SRS records
- ◆ Summary of information obtained:
 - Frequency of chest x-ray screening
 - Description of x-ray and ancillary equipment
 - Technique factors for x-ray equipment types
 - Entrance air kinetic energy released per unit mass (kerma) for various projections

NIOSH's analysis of data

- ◆ NIOSH analyzed data and provided dose reconstruction (DR) recommendations concerning:
 - Organ dose equivalent (rem) for chest projections
 - Skin dose guidance for chest projections
 - Skin dose (rem) from chest projections

Additional information provided

- ◆ NIOSH summarized recommended IREP parameters in table 3-8 for assigning dose to B-lymphocytes
- ◆ NIOSH provided a separate spreadsheet summarizing derivation and resulting dose values used in tables in TBD-3

SC&A review of NIOSH's analysis of data and technical information

◆ SC&A reviewed:

- Frequency of chest x-ray screening, table 3-1
- NIOSH's referenced documents in note a of table 3-1 and concurs with information summarized in table 3-1
- Description of x-ray and ancillary equipment, table 3-2
- NIOSH's referenced documents in table 3-2 and concurs with information summarized in table 3-2
- Technique factors for x-ray equipment types, table 3-3
- NIOSH's referenced documents in table 3-3 and concurs with information summarized in table 3-3

SC&A review of NIOSH's kerma and DRs

- ◆ Reviewed site research database (SRDB) documents NIOSH referenced in creating summary information in following tables:
 - Entrance air kerma for various projections, table 3-4
 - Organ dose equivalent for chest projections, table 3-5
 - Skin dose guidance for chest projections, table 3-6
 - Skin dose from chest projections, table 3-7
- ◆ SC&A used the SRDB documents to verify contents of tables, had no findings or observations

SC&A review of NIOSH recommendations for B-lymphocyte dose

- ◆ Reviewed SRDB documents NIOSH referenced in creating summary information in table 3-8 for assigning B-lymphocyte dose
- ◆ Reviewed IREP distributions and values for parameters 1, 2, and 3 in table 3-8
- ◆ Found information in table 3-8 matches information in referenced documents

SC&A evaluation of NIOSH's commitments to modify TBD-3

- ◆ Identified resolution of issues in 66 previously completed DR case reviews
- ◆ Searched for NIOSH's commitments to change SRS TBD to resolve issues
- ◆ Evaluation did not identify any commitments by NIOSH to change SRS TBD that would impact guidance in newly issued TBD-3

Summary of SC&A review of TBD-3

- ◆ Reviewed source documents NIOSH used to derive entries in tables 3-1 through 3-8
- ◆ Performed various calculations to verify NIOSH-recommended dose values
- ◆ Did not identify any errors or issues
- ◆ Concurs with NIOSH's recommendations
- ◆ Reviewed text of TBD-3 and did not identify any errors or issues



Questions ?