
Work Group on Uranium Refining AWEs
Presented at ABRWH Meeting
August 9–10, 2016
Idaho Falls, ID
Operations at WEC

• August 1942–December 1949: WEC produced limited quantities of U metal via photochemical reaction of U nitrate or oxide with KF, also produced 200 lb of Th metal.

• February 1958–May 1958: WEC performed test rolling of U tubes for Fernald.

• June 1959: WEC performed additional test rolling of U tubes (NIOSH 2015).
SEC Status

• AWE workers added to SEC for 1st operating period (8/1942–12/1949) based on Petition SEC-00157 (NIOSH 2010).

• No approach for reconstructing doses during residual period (1950–2006) presented by NIOSH in ER of SEC-00157.

• New petition (SEC-00217) qualified by NIOSH on 1/8/2015 requesting that all employees who worked at WEC from Jan. 1950 to March 2011 be added to SEC.
SEC Status (cont.)

• Based on further review, NIOSH defined two additional operating periods and three residual periods (1/1/1950–1/31/1958; 6/1/1958–5/31/1959; and 7/1/1959–4/30/2000).

• NIOSH determined that doses could not be reconstructed for additional operating periods, so additional workers were added to the SEC.

• NIOSH determined that doses could be constructed for three residual periods (NIOSH 2015).
SC&A Evaluation of SEC-00217

• ABRWH tasked SC&A to review the ER for SEC-00217, focusing on residual periods only.
• Based on its review, SC&A developed two observations and two findings (SC&A 2015).
SC&A Evaluation of SEC-00217 (cont.)

• **Observation 1. Mode 2 ingestion exposures based on OCAS-TIB-009 [NIOSH 2004]** should be adjusted for the duration of the work-day (i.e., 8, 8.8, or 9.6 hr) based on the dates on which the exposures occurred.

• NIOSH response (5/24/16): Occupancy times will be adjusted (NIOSH 2016).
Observation 2. The deposition time used in the Model DR (Spreadsheet 2015) is not consistent with that proposed on p. 37 of NIOSH 2015.

NIOSH Response (5/24/16): NIOSH will update the calculations for the third residual period.
Finding 1. The procedure for calculating air concentrations during the 1st residual period is not consistent with the guidance provided in ORAUT-OTIB-0070.

NIOSH Response (5/24/16): NIOSH felt that this was a site profile issue, not an issue related to the SEC. The Work Group was in agreement on that approach.
Findings:

1. The guidance provided in OTIB-0070 (Section 3.6) for calculating doses during the residual period refers to OCAS-TIB-009 (NIOSH 2004). This guidance should be revised, since the OCAS-TIB-009 approach cannot be used to calculate ingestion intakes from transfer of surface contamination to the hands and then to the mouth. Use of the procedure in TIB-009 understates this source of ingestion. The calculations in the SEC-00217 ER for the 1st residual period should be modified accordingly.

2. This finding applies to all residual periods.

NIOSH response (5/24/16): NIOSH agreed to modify ingestion intakes accordingly. Like Finding 1, this was also deemed to be a site profile issue.
Summary

• The two SC&A observations were resolved.
• Both findings were determined to be site profile issues.
• There was general agreement on the approach to addressing Finding 2, but Finding 1 will require additional review by NIOSH as to the preferred approach for addressing air concentrations during the residual periods at WEC.
References


