



National Institute for Occupational Safety and Health  
Division of Compensation Analysis and Support

**DEPARTMENT OF HEALTH & HUMAN SERVICES**

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**Memorandum**

**To:** Pinellas Plant Working Group

**From:** Peter Darnell, DCAS Health Physicist  
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**Subject:** Revision to Pinellas Plant Site Profile

**Date:** April 20, 2016

NIOSH revised the majority of the Pinellas Site Profile (also known as the technical basis document TBD) in 2011 and completed the internal dose section in 2012.<sup>1</sup> Since then, there have been data capture efforts in support of dosimetry during the decontamination and decommissioning (D&D) era and development of a model for exposure to insoluble tritium. These efforts concluded March 10, 2016, with the resolution of the TBD matrix issues and agreement on the tritium exposure models. This memo, in conjunction with the Issues Matrix provided during the March 23-24, 2016, meeting of the Advisory Board on Radiation Worker Health (ABRWH), describes NIOSH's plan to incorporate information into a revision of the Pinellas TBD.

NIOSH proposes to revise Section 5.7.1.1 and 5.7.1.2 of ORAUT-TKBS-0029-5 as follows. The revision will be in the form of full TBD revision.

The most common forms of soluble tritium encountered at the Pinellas Plant were tritium gas (HT) and tritiated water (HTO). Potential exposure to OBT compounds also existed. The Section 5.7.1.1 revision will create an approach for assessing potential exposures to all types of organically bound tritium (OBT) compounds (this section currently refers to the approach described in ORAUT-OTIB-0011 for potential exposures to the more soluble OBT compounds).

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<sup>1</sup> Site Research Database (SRDB) Reference Identification Number (Ref ID) 107706

The approach for assessing exposures to HT and HTO remains unchanged and assumes that 100% of the tritium intake was attributable to HTO. Calculation of HTO doses uses the worker's urine bioassay data according to ORAUT-OTIB-011. To determine the appropriate dose assignment, the dose reconstructor will calculate doses using 100% HTO and 100% OBT with the worker's urine bioassay data. The dose reconstructor will assign the most claimant favorable dose.

Revision of Section 5.7.1.2 involves the NIOSH approach for assessing potential unmonitored exposures to insoluble tritium. This revised section will no longer contain reference to OBT because of the changes to Section 5.7.1.1. Section 5.7.1.2 will include the following:

- Resuspension factor: 5E-5 per meter;
- Highest contamination survey (contamination levels between 1957 and 1973 are the basis for the airborne contamination source term): 4.4E+06 dpm/100 cm<sup>2</sup>);
- 50-hour work week;
- Insoluble tritium was only present in areas where soluble tritium was handled and where the workers were monitored for soluble tritium exposures, thus, this approach only applies to workers with tritium bioassay; and,
- Doses calculated for both type M and S insoluble tritium compounds with the most claimant favorable dose assigned.

NIOSH currently plans to publish the TBD in August 2016.

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