



Memorandum

To: Paul Ziemer, Ph.D., Chair, Use of Surrogate Data Work Group
Advisory Board on Radiation and Worker Health

From: Thomas P. Tomes, DCAS Health Physicist

Subject: Texas City Chemicals Review

Date: May 19, 2020

Introduction

In December 2017 The Advisory Board on Radiation and Worker Health tasked SC&A with a review of the NIOSH *Technical Basis Document for Texas City Chemicals* (TBD). SC&A issued a report of their evaluation of the TBD in May 2018 [SCA 2018]. The 2018 report did not identify any *findings* from the review of the TBD; however, SC&A identified two *observations*. NIOSH issued TBD Revision 1 on April 27, 2020, with changes to address SC&A's two observations [NIOSH 2020]. The observations and the NIOSH resolution to them are summarized below.

In addition to reviewing the TBD, the May 2018 SC&A report contained a review of previous *findings* they documented on the Texas City Chemicals Special Exposure Cohort (SEC) petition SEC-0088 Evaluation Report (ER). That review was done in 2008 and the findings have not been closed. The status of the ER findings is summarized below.

TBD Observations

NIOSH issued Revision 0 of the TBD on November 2, 2017. The TBD formalized the dose reconstruction methods described in Revision 1 of the ER. Below is a summary of SC&A's two observations and the NIOSH resolution to them.

SC&A TBD observation 1: Combined Intakes. SC&A commented that Tables 8 and 9 have the potential to be misinterpreted due to the format in which the intakes are presented in some years.

NIOSH resolution: NIOSH did not find errors in the intakes in Tables 8 and 9 but agrees with SC&A that the format of Tables 8 and 9 to provide annual average calendar day intake rates, in years in which the intake rate changes within the year, can be confusing. Therefore, the combined intake rates were removed from TBD. Tables 7, 8, and 9 were revised to only provide explicit calendar day intake rates for all specific periods of time. The change simplified the explanations needed in the TBD. TBD Revision 1 has the change.

SC&A TBD observation 2: Apparent inconsistency in ingestion calculation methods. The method used in the TCC TBD for ingestion intakes from residual contamination is inconsistent with the methods used in the Evaluation Report for Metals and Control.

Observation 2 resolution: SC&A noted that the NIOSH TCC TBD followed the ingestion intakes method in OCAS-TIB-009 and noted a different method was used in the Metals and Controls ER. NIOSH reviewed the ingestion calculation methods. The methods described in OCAS-TIB-009 were correctly applied to the TCC AWE operational period. However, those methods should not be applied to the residual contamination period; therefore, intakes from residual contamination were revised. Revision 1 of the TBD provides updated residual ingestion intake rates that assume the initial residual ingestion intake rate is equal to the ingestion intake rate during uranium recovery operations. The ingestion rate declines gradually in subsequent years according to the depletion factors in ORAUT-OTIB-0070. This TBD change results in an increase in the ingestion intake rate from residual contamination.

SEC-0088 ER Findings

In the TBD review SC&A listed the nine findings from the 2008 review of the ER. The findings were from review of ER Revision 0 [NIOSH 2008]. Those findings have not been closed. Subsequent to the 2008 SC&A ER review NIOSH received additional documents and site information, and the dates of the AWE operational and residual periods were modified. NIOSH issued TCC ER Revision 1 [NIOSH 2010] to include new site formation, to address the change in covered period, and to address ER findings from SC&A. NIOSH recommended adding a class to the SEC, to which the Board agreed.

In the May 2018 TBD review, SC&A listed the nine ER findings and recommended they all be closed. NIOSH agrees that the nine findings have been resolved and also recommends they be closed.

Board Review System (BRS)

NIOSH reviewed all the entries for Texas City Chemicals in the BRS under the Work Group on the Use of Surrogate Data. There are two documents: (1) the 2018 SC&A review of TBD Revision 0, with entries for the two observations; and (2) the 2008 SC&A review of ER Revision 0 with entries for the nine findings. A third SC&A document from 2009 was also included in the SC&A follow-up comments on the nine ER findings.

The entries in the BRS for the nine ER findings are difficult to interpret; all nine findings and responses have a January 18, 2018 date in the BRS. SC&A also has follow-up responses to each of the nine findings that are dated January 18, 2018. Upon reading SC&A comments, it was not obvious if the entries are from review of the original 2008 ER Revision 0 or from a review of ER Revision 1 [NIOSH 2010]. However, upon reading the information and supporting documents it appears all nine ER findings and SC&A follow-up responses are 2018 BRS entries of SC&A comments made on ER Revision 0 in 2008 and 2009. The 2010 NIOSH ER Revision 1 addressed the ER findings, as noted by SC&A in their recommendation to close the nine ER findings.

References

NIOSH [2008]. SEC petition evaluation report, petition SEC-00088, Rev. 0. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health. January 29. [SRDB Ref ID 75146]

NIOSH [2010]. SEC petition evaluation report, petition SEC-00088, Rev. 1. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health. October 19. [SRDB Ref ID 175297]

NIOSH [2017]. Technical basis document for Texas City Chemicals, Inc., Texas City, Texas, DCAS-TKBS-0011, Revision 00. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health. October 19. [SRDB Ref ID 168229]

NIOSH [2020]. Technical basis document for Texas City Chemicals, Inc., Texas City, Texas, DCAS-TKBS-0011, Revision 01. Cincinnati, OH: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute of Occupational Safety and Health. April 27. [SRDB Ref ID 181018]

SCA [2018]. Evaluation of technical basis document for Texas City Chemicals, Inc, Texas City, Texas. SCA-TR-2018-SP004, Revision 0. SC&A, Inc., Arlington, VA. May. [SRDB Ref ID 176650]