



MEMORANDUM

TO: URAWE Work Group
FROM: SC&A, Inc.
DATE: December 23, 2016
SUBJECT: SC&A Review of NIOSH Response Paper, *NIOSH Response to Sanford Cohen & Associates Review of Hooker Electrochemical Company TBD (DCAS-TKBS-0009 rev. 3)*

Introduction

On September 13, 2016, the National Institute for Occupational Safety and Health (NIOSH) issued Revision 03 to DCAS-TKBS-0009, *Technical Basis Document for the Hooker Electrochemical Company* (NIOSH 2016a, the Hooker site profile). The Work Group tasked SC&A to review Revision 03 with a view of determining whether all open findings from previous reviews had been addressed. As discussed in SC&A's review of Revision 03, SC&A recommended that Findings 5 and 6 be closed (SC&A 2016). With regard to Finding 4, NIOSH added an approach to addressing ingestion exposures during the residual period that had not been previously included (SC&A 2016). On November 21, 2016, SC&A requested further clarification of the specific approach taken to develop the ingestion exposures, because there was apparent agreement, based on prior discussions with NIOSH, that the approach presented in OCAS-TIB-009, *Estimation of Ingestion Intakes*, Revision 00 (OCAS 2004; hereafter "TIB-009") was not appropriate.

NIOSH replied to SC&A's November 2016 review on December 6, 2016, in a response paper (NIOSH 2016b) titled *NIOSH Response to Sanford Cohen & Associates Review of Hooker Electrochemical Company TBD (DCAS-TKBS-0009 rev. 3)*. This memorandum is SC&A's critique of the NIOSH response paper.

Discussion

SC&A recognizes that ingestion doses during the residual period at Hooker will be small and are unlikely to reach levels that would trigger worker compensation. However, we are concerned that the bases for calculating these doses may not be well understood and may not be consistent with the physical situation that was modeled.

NIOSH states on page 2 of its December 6, 2016, response that:

It was also discussed, however, that while the airborne concentrations decrease rapidly after the cessation of operations, there is no reason to believe the same is true of the surface contamination levels. Therefore, there is no reason to believe the ingestion rate is reduced rapidly. It is therefore possible to use TIB-9 with the operational airborne

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concentrations to determine the ingestion rate at the end of the operational period. Because there is no reason to believe the ingestion rate decreased quickly, it is also appropriate to use this rate at the start of the residual period.

To paraphrase the NIOSH statement, airborne concentrations decrease rapidly after the cessation of operations but surface concentrations do not. Therefore, use of TIB-009 to calculate ingestion doses for the residual period based on airborne concentrations at the end of operations is an appropriate bounding approach.

We remind the reader that TIB-009 estimates two equal contributions to ingestion doses:

- Airborne particulates that fall onto the surface of a coffee cup
- Surface contamination (from airborne particulates) that is transferred from hand to mouth

Half the contamination during the residual period (ingestion via deposition into a coffee cup) will rapidly disappear during the residual period. Thus, while use of TIB-009 as proposed by NIOSH is bounding, it is inconsistent with the physical model involving rapid decrease in airborne transfer of particulates to a coffee cup during the residual period. As a cautionary note, it has generally been agreed that overly conservative bounding calculations can be used to screen out exposures that will not result in compensable exposures, but they are inappropriate for awarding compensation.

On the basis of this cautionary note on screening of compensable exposures, SC&A would recommend that Finding 4 be closed.

References

NIOSH 2016a. *Technical Basis Document for the Hooker Electrochemical Company*, DCAS-TKBS-0009, Revision 03, Division of Compensation Analysis and Support, National Institute for Occupational Safety and Health, Cincinnati, Ohio. September 13, 2016.

NIOSH 2016b. *NIOSH Response to Sanford Cohen & Associates Review of Hooker Electrochemical Company TBD (DCAS-TKBS-0009 rev. 3)*, Division of Compensation Analysis and Support, National Institute for Occupational Safety and Health, Cincinnati, Ohio. December 6, 2016.

OCAS 2004. *Estimation of Ingestion Intakes*, OCAS-TIB-009, Revision 00, Office of Compensation Analysis and Support, National Institute for Occupational Safety and Health, Cincinnati, Ohio. April 13, 2004.

SC&A 2016. *SC&A Review of DCAS-TKBS-0009, Revision 03, for Hooker Electrochemical Company*, SCA-TR2016-SP008, Revision 0, SC&A, Inc., Vienna, Virginia. November 21, 2016.