



## MEMORANDUM

TO: Mound Plant Work Group  
FROM: Joseph Fitzgerald, SC&A  
DATE: November 29, 2016  
SUBJECT: NIOSH Memorandum on Clarification of Mound Database Use

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This memorandum is in response to the memorandum report of October 24, 2016, from Peter Darnell, Division of Compensation Analysis and Support (DCAS), National Institute for Occupational Safety and Health (NIOSH), to the Mound Plant Work Group (WG) (Darnell 2016; hereafter the “NIOSH response”) regarding the WG’s requested clarification of how the Mound internal dose database is used in practice. This request stemmed from the September 29, 2016, WG meeting, where the question arose as to whether NIOSH actually relied on the PORECON or PURECON databases as a primary source of information in the absence of individual records from the U.S. Department of Energy (DOE). NIOSH indicated that it would provide clarification on how these databases are actually used as “reference” sources of information, as it had stated in its April 27, 2016, addition to the issues matrix for remaining Mound site profile issues (NIOSH 2016).

In its October 2016 response to the WG (Darnell 2016), NIOSH notes that while it did not perform a validation and verification (V&V) of the PORECON and PURECON databases (for polonium and plutonium internal doses, respectively), MJW Corporation had done so for the “original” databases, which were based on primary sources, such as bioassay cards and chemistry logbooks. The existing databases are a product of the MJW effort and are intended as “reference” sources of dose reconstruction information. As defined by NIOSH in this memorandum, these sources of information are secondary to the primary information provided by DOE records from the employee files.

The NIOSH response cites the recommendation of the Mound technical basis document (TBD), ORAUT-TKBS-0016-5, *Mound Site – Occupational Internal Dosimetry* (ORAUT 2013), that the “dose reconstructor should typically use the bioassay results listed in the PORECON database as most convenient,” but that it is “important” that all claim records be reviewed to ensure the database reflects “all listed bioassay results in the primary data.” Identical language is provided for the PURECON database.

The NIOSH response concludes that (1) from a general standpoint, it “conducts dose reconstruction using the primary records contained in the claimant files”; (2) it may “also use the databases as convenient listings of the claimant information but their use is reconciled to the primary records”; and (3) if “variations” from this approach are found, NIOSH will validate, to the extent practical, all information used in dose reconstruction calculations (Darnell 2016).

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SC&A understands and agrees with NIOSH's procedural description of this hierarchy, both for Mound specifically and in general, but still finds the central question posed by the WG not clearly answered. If the primary records are the DOE bioassay results, but the TBD directs the dose reconstructor to use the PORECON and PURECON databases "as most convenient," have there been any instances in which the primary records have been lacking and reliance has been solely on these two databases? Have dose reconstructors relied on the two databases without referencing the primary record, as prescribed by the TBD and NIOSH general procedures?

As MJW performed a V&V of the two original databases in 1989, the overall implications of this concern can be considered minimal. However, it may be useful for the WG to recommend that several dose reconstruction reviews by the Advisory Board be focused on this question in the future. That should satisfactorily close out this remaining question.

## References

Darnell 2016. Memorandum from Peter Darnell, Health Physicist, Division of Compensation Analysis and Support, to Mound Working Group, Subject: Clarification of Mound Database Use. October 24, 2016.

NIOSH 2016. *NIOSH Response: Review of Remaining Site Profile Issues for Mound Laboratory*, Revision 0, National Institute for Occupational Safety and Health, Cincinnati, Ohio. April 27, 2016.

ORAUT 2013. *Technical Basis Document for the Mound Site – Occupational Internal Dosimetry*, ORAUT-TKBS-0016-5, Revision 02, Oak Ridge Associated Universities Team, Oak Ridge, Tennessee. April 18, 2013. [SRDB Ref. ID 124215]