MEMO

TO: Dose Reconstruction Review Methods Work Group,
the Subcommittee on Dose Reconstruction, and the ABRWH

FROM: Kathleen Behling, SC&A

DATE: July 15, 2015

SUBJECT: Approach to Expediting DRSC Findings Backlog

At the first Dose Reconstruction Review Methods (DRRM) Work Group meeting on June 22, 2015, an agenda item included a discussion of possible approaches to resolving findings from the dose reconstruction (DR) case audits identified in Sets 14 through 21. SC&A, therefore, took the opportunity to briefly present a potential method for expediting the findings backlog. As a result of this discussion, Dr. Melius, the Chairperson, asked SC&A to provide the Work Group and the Dose Reconstruction Subcommittee (DRSC or Subcommittee) with a memo detailing our new approach. This memo satisfies that request.

In an effort to increase the efficiency and timeliness of the issues resolution process, the DRSC previously adopted the approach of categorizing findings for a specific group of sets by site. SC&A is recommending a further grouping of site-specific findings and observations into two groups. The first group, Type 1, includes those that appear as though they could be resolved with minimal to no discussion. Type 1 issues have been resolved to SC&A's satisfaction, but have not been formally discussed with the DRSC. These findings and observations include issues such as QA/QC problems, technical clarifications, and previously resolved issues. The second group, Type 2, includes the remaining findings and observations. Type 2 findings and observations will likely need additional attention and should be brought up for more detailed discussions in the DRSC forum.

SC&A proposes creating a table prior to each meeting that summarizes our recommendations for Type 1 findings/observations. SC&A believes that providing the Subcommittee members with an additional grouping of findings/observations and sufficient time to review our suggestions should accelerate the finding closeout process during DRSC meetings. This summary table would be submitted to the DRSC members and NIOSH staff at least 1 week prior to the meeting (or the timeframe determined by the DRSC), in order to give Subcommittee members an opportunity to carefully review our recommendations prior to the meeting. This table would contain the site, finding rank, POC, a description of the finding, and a summary of the resolutions for all Type 1 findings and observations. The summary table will highlight for the DRSC members the findings/observations that NIOSH and SC&A are in agreement on and that SC&A recommends closing. DRSC members can then review these recommendations and determine if they agree that the finding can be closed or believe additional discussion is warranted despite SC&A's recommendation. At the discretion of the DRSC, many of the findings/observations that SC&A identified within Type 1 can then be closed quickly without the need for lengthy discussions. This will allow the DRSC's time and resources to be better

directed toward issues that are more pressing, such as those that have broad DR implications. Additionally, with this information, NIOSH will be aware of the findings/observations that SC&A believes require additional discussion and can be better prepared to discuss the issues in question at the meeting. In order to effectively implement this process, however, SC&A will need NIOSH's cooperation in responding to findings in a timely manner.

To provide an example of this grouping system, SC&A has evaluated and sorted the 14th–18th set findings/observations associated with four sites [i.e., Oak Ridge Sites (X-10, Y-12, and K-25), Paducah, Portsmouth, and SRS]. SC&A's recommendations for the grouping of findings and observations from these sites are contained in a summary table in Attachment 1. The grouping of these findings as they relate to the subset of cases of this evaluation is summarized in Table 1. Based on this evaluation, SC&A estimates that 79% of the total number of findings in this subset and 94% of the total number of observations in this subset could be closed with minimal discussion.

Table 1. Summary of Finding Grouping for 5 Sites in the 14-18th Sets

Site	Findings				Observations			
	Total	**Open**	**Type 1: Minimal Discussion**	**Type 2: More Detailed Discussion**	**Total**	**Open**	**Type 1: Minimal Discussion**	**Type 2: More Detailed Discussion**
Oak Ridge Sites	30	2	1	1	7	1	1	–
Paducah GDP	3	3	2	1	2	2	2	–
Portsmouth GDP	2	2	2	–	1	1	1	–
SRS	31	31	25	6	12	12	11	1
Total	**66**	**38**	**30**	**8**	**22**	**16**	**15**	**1**

Attachment 1. Type 1 Recommendations

Finding/Observation No.	Rank	POC%	Finding/Observation Description	Finding/Observation Resolution
Oak Ridge 391.1-C.1.1	L	46.63	Inconsistency in Unmonitored Dose	NIOSH agrees an error was made, but fixing it does not have an impact on the DR; additionally, NIOSH provided information to fill in data gaps to SC&A's satisfaction.
Oak Ridge 394.1-C.2.3	M	44.09	Incorrect Dose Values Used and no PFG Exam for X-10	NIOSH correctly followed guidance of ORAUT-OTIB-0006. Additionally, NIOSH committed to revise PROC-0061 to be consistent with OTIB-006.
Oak Ridge 438 Observation 1	NA	43.71	SC&A is concerned with radionuclides other than the predominate ones (such as Pu-239 and uranium), which may be applicable to this case when resolved.	NIOSH committed to review the claim under PER if site profile changes result in potential increases in dose.
Paducah 355.1-C.2.1	L	30.42	NIOSH did Not Include the Recorded Dose for 1980	NIOSH agrees an error was made, but fixing it does not have an impact on the DR.
Paducah 395.1-G.3	L	34.03	Uranium Chronic Intake Significantly Underestimated by CADW	NIOSH agrees an error was made, but fixing it does not have an impact on the DR.
Paducah 396 Observation 1	NA	50.16	Claimant-favorable use of surrogate organ	NIOSH appropriately implemented the procedure in place at the time of the DR.
Paducah 397 Observation 1	NA	50.51	NIOSH did not start using the new procedure revision when it was released mid-DR	SC&A referenced an interim document that had not undergone review and thus could not be used in a DR. NIOSH appropriately implemented the procedure in place at the time of the DR.
Portsmouth 351.1-C.2.2	UR	44.24	Incorrect Photon Missed Dose Correction Factor	SC&A did not understand the methods used by NIOSH. NIOSH provided additional information that clarified the issue; will include clarifications in the next revision of the site TBD.
Portsmouth 352 Observation 1	NA	50.06	Inappropriate Procedure used for Calculation of Missed Dose.	NIOSH agreed that DCF should not be applied to missed dose and committed to revise the site TBD.
Portsmouth 352.1-E.1.1	L	50.06	Lack of Neutron Dose Assignment	NIOSH agreed that neutron doses could be included, but including them does not have an impact on the claim determination, because the case was already compensable.
SRS 400.2-G.3	L	47.37	Missed 1959 Tritium Dose Assigned Twice	NIOSH agrees a cut-and-paste error occurred. The workbook has since been updated to prevent this type of error from occurring again.

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SRS 356 Observation 1	NA	44.35	OCAS-IG-001 (2007) contains two separate tables labeled "Table 4-1a," one on page 38 and one on page 39; this is confusing and needs to be corrected. Additionally, there are no lists of tables in the Table of Contents.	NIOSH agrees that there is an error and committed to revise OCAS-IG-001.
SRS 356.1-C.1.1	L	44.35	Inappropriate Method Used for Determining Recorded Dose	SC&A did not understand the methods used by NIOSH. NIOSH provided additional information that clarified the issue.
SRS 356.2-C.1.2	L	44.35	Inappropriate Method Used for Determining Number of Zeros	SC&A did not understand the methods used by NIOSH. NIOSH provided additional information that clarified the issue.
SRS 356.3-C.1.1	L	44.35	Inappropriate Method Used for Assigning Dose for 1981 and 1982	SC&A and NIOSH agreed that the approach required a certain degree of subjective judgment and more than one strategy was reasonable.
SRS 356.6-G.4	L	44.35	Inconsistent Assignment of Unmonitored/Environmental Tritium Dose	This case is eligible for inclusion in the SRS SEC; additional dose would not impact the outcome of this case.
SRS 356.7–G.3	L	44.35	Incorrect Assignment of FP Dose for 1965–1966	NIOSH agrees an error was made, but fixing it does not have an impact on the case.
SRS 400 Observation 1	NA	47.37	SC&A noted that roughly half of the dosimetry records have a dark line drawn through the EE's name and corresponding dose record. This line effectively makes many records illegible to SC&A and NIOSH. Due to this line, NIOSH could not use many records to assign dose and SC&A cannot verify that the correct dosimetry values were used.	NIOSH clarified confusion due to interpretation of illegible DOE records.

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SRS 400 Observation 2	NA	47.37	Although NIOSH correctly assigned medical dose based on guidance available at the time of the DR, less than 1 month following the issuance of the current revision of the DR, ORAUT-TKBS-0003-3 Rev. 4 was issued. This revision reduces the dose contribution to each organ from a PA x-ray examination. As a result, if the DR is revised, there will be a >50% reduction in assigned occupationally required medical dose.	This observation was made for the benefit of the DRSC. The assigned occupational medical dose was consistent with the site profile at the time it was written.
SRS 401 Observation 1	NA	48.24	Possible incomplete bioassay records for the EE.	NIOSH agrees an error was made, but fixing it does not have an impact on the case, because the EE should be compensated under the SRS SEC.
SRS 401.1-E.1.2	L	48.24	Unable to Reproduce Assigned Neutron Dose 1961–1963	There were gaps in the exposure data that NIOSH filled in to SC&A's satisfaction.
SRS 401.2-E.1.3	L	48.24	Unable to Reproduce Missed Neutron Dose 1961–1963	There were gaps in the exposure data that NIOSH filled in to SC&A's satisfaction.
SRS 401.3-B.4	L	48.24	NIOSH did Not Adjust Ambient Doses for 46-hour Work Weeks	A workbook revision subsequent to the DR review clarified and resolved the issue.
SRS 401.5-G.3	L	48.24	Incomplete Fitted Uranium Dose Assigned	NIOSH agrees that there could have been a better explanation in the DRR; however, including the result does not have an impact on the case.
SRS 402 Observation 1	NA	47.57	From the site TBD, it is not clear what work locations had a risk of RU exposure.	NIOSH committed to revising the SRS TBD and addressing RU contaminants in the next revision.
SRS 402 Observation 2	NA	47.57	NIOSH used ORAUT-OTIB-0018 to assign RU dose, which is not applicable for respiratory cancers	NIOSH committed to revising the SRS TBD and addressing RU contaminants in the next revision.
SRS 402.1-C.2.1	L	47.57	No Photon Dose Assigned 1952–1964	NIOSH and SC&A agree that this is an instance where professional judgment was made by the dose reconstructor. Additionally, this case should qualify for inclusion in the SRS SEC and the additional dose would not impact the outcome of the case.
SRS 402.2-G.3	L	47.57	Environmental Dose Not Assigned after 1983	NIOSH agrees an error was made, but fixing it does not have a significant impact on the POC of the case.
SRS 403.1-C.2.1	L	49.10	Incorrect Facility and Energy Distribution used to Calculate Photon Doses	NIOSH agrees an error was made, but fixing it does not have an impact on the DR.

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Finding/Observation No.	Rank	POC%	Finding/Observation Description	Finding/Observation Resolution
SRS 403.2-D.3.1	L	49.10	Incorrect Dose CF Applied to Shallow Dose of Lip	NIOSH agrees an error was made, but fixing it does not have an impact on the DR.
SRS 403.3-G.2	L	49.10	Missed and Environmental Dose Not Carried Through the Year of Cancer Diagnosis	NIOSH and SC&A agree that this is an instance where inconsistent doses less than 0.001 rem were applied to the cancer location.
SRS 403.4-G.3	L	49.10	Failure to Assign Unmonitored Tritium Dose to 1994	NIOSH and SC&A agree that this is an instance where professional judgment was made by the dose reconstructor and the difference in calculated dose would not impact the outcome of the case.
SRS 404 Observation 2	NA	49.07	SC&A was unable to locate any procedural guidance advising how dose should be modeled following a chelation	NIOSH indicated the intent to include additional guidance in a future procedure revision.
SRS 404.1-C.2.1	M	49.07	Failure to Consider Finger Ring Monitoring	NIOSH agrees an error was made, but fixing it does not have an impact on the final decision of the case.
SRS 404.2-E.2.3	M	49.07	Failure to Apply Wrist Correction Factor to Missed Neutron Dose	NIOSH agrees an error was made, but fixing it does not have an impact on the final decision of the case.
SRS 404.3-D.1.1	L	49.07	Failure to Apply Attenuation Factors	NIOSH agrees an error was made, but fixing it does not have an impact on the final decision of the case.
SRS 404.5-C.2.3	L	49.07	Failure to Assign Pre-employment Medical Dose	NIOSH agrees an error was made, but fixing it does not have an impact on the final decision of the case.
SRS 405.1-C.2.1	M	46.99	Failure to Assign Coworker Dose	NIOSH and SC&A agree that this is an instance where professional judgment was made by the dose reconstructor. Additionally, this case now qualifies for inclusion in the SRS SEC.
SRS 405.2-C.2.3	L	46.99	Failure to Assign Pre-employment Medical Dose	NIOSH agrees an error was made, but fixing it does not have an impact on the final decision of the case. This case qualifies for inclusion in the SRS SEC.
SRS 416 Observation 1	NA	44.31	Case is eligible to be included in the SRS SEC; however, this case has not yet been flagged as such.	NIOSH agrees with SC&A. The SEC was granted after the DR and inclusion in the SEC is under DOL purview.
SRS 416 Observation 2	NA	44.31	Incorrect Organ DCFs Stated in DR Report	NIOSH agrees a QA error was made; however, the error is in the DR report only and fixing it does not have an impact on the DR.
SRS 416 Observation 3	NA	44.31	NIOSH did not consider all x-ray examination records found in the DOE files	NIOSH and SC&A agree these scans are not eligible to be included; however, SC&A believes they should have been mentioned in the DR Report.

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SRS 416.1-E.2.1	L	44.31	Incomplete Accounting of Fitted Neutron Dose	NIOSH agrees a QA error was made; however, inclusion of additional neutron dose does not impact the outcome of the case.
SRS 416.2-E.2.3	L	44.31	Incomplete Accounting of Missed Neutron Dose	NIOSH agrees a QA error was made; however, inclusion of additional neutron dose does not impact the outcome of the case.
SRS 416.4-F.2	L	44.31	Inconsistent Method used to Assign Unmonitored FP Dose	NIOSH agrees an error was made, but fixing it does not have an impact on the POC. The claim now qualifies for inclusion in the SRS SEC.
SRS 440 Observation 1	NA	51.21	SC&A questions if NIOSH selected the correct IREP risk model that corresponds with Myelodysplastic Syndrome (MDS)	NIOSH and SC&A agree that DOL could have assigned a different ICD-9 code; however, application of the other code would not change the final POC/outcome.