

August 20, 2015

MEMORANDUM TO: Michael Norato, Chief  
Materials Decommissioning Branch  
Division of Decommissioning, Uranium Recovery,  
and Waste Programs  
Office of Nuclear Material Safety  
and Safeguards

FROM: Karen Pinkston, Systems Performance Analyst */RA/*  
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SUBJECT: PUBLICLY NOTICED TELECONFERENCE SUMMARY

On August 11 and 12, 2015, a publicly noticed teleconference was held between the U.S. Nuclear Regulatory Commission (NRC) personnel from the Office of Nuclear Material Safety and Safeguards and Region III, the Oak Ridge Associated Universities (ORAU), the NRC's consultants, and representatives of Westinghouse. The purpose of this teleconference was to discuss issues related to the Final Status Survey (FSS) at the Hematite Site in Festus, Missouri. On July 17, 2015, the NRC staff transmitted a letter to Westinghouse that documented seven FSS issues for which the NRC needed more information (Agencywide Document and Access Management System [ADAMS] Accession No. ML15196A606). Westinghouse responded in two letters dated July 28, 2015 (ADAMS Accession No. ML15209A975) and July 31, 2015 (ADAMS Accession No. ML15212A958).

The meeting was opened with a statement by Larry Camper, Director of the Division of Decommissioning, Uranium Recovery, and Waste Programs (DUWP) at the NRC. Mr. Camper stated that the project was at a critical juncture. Mr. Camper noted that there were significant issues that needed to be resolved and that Westinghouse was currently backfilling at risk. Mr. Camper stated that the NRC would like to get to closure on these issues. Joe Smetanka of Westinghouse stated that Westinghouse did not think that it was backfilling at risk. Mr. Smetanka stated that Westinghouse would like to see closure on these issues also.

The individual FSS issues identified in NRC's July 17, 2015 letter were then discussed. These issues included: the inputs to the scan minimum detectable concentration (MDC), the description of remediation activities following initiation of FSS, the appropriate sampling of the

reuse pile, the demonstration of compliance with the dose criteria in 10 CFR 20.1402, the DCGL versus gamma walkover surveys, sidewall sampling, and burial pit identification.

#### Inputs to the scan MDC

The NRC staff stated that the information provided by Westinghouse on the inputs to the scan MDC was acceptable. NRC staff noted that the current observation interval being used corresponds to the surveyor moving at 1 ft/s, which is slower than normal industry practice and, therefore, will be reviewed closely in the Final Status Survey Report (FSSR). Westinghouse stated it understood but reaffirmed to the NRC that is the surveyor speed used at the site. This item has been resolved.

#### Description of Remediation Activities Following Initiation of Final Status Survey

Westinghouse committed to providing the detail requested by the NRC in the FSS reports moving forward. This item has been resolved.

#### Appropriate Sampling of the Reuse Pile

The NRC staff stated that it finds the approach Westinghouse selected in HEM-15-81 for the evaluation of the reuse pile to be acceptable. The NRC currently has no questions regarding the dose modeling associated with the reuse pile, but this will be reviewed in further detail with other dose modeling assumptions used at the site. This item has been resolved.

#### Demonstration of compliance with the dose criteria in 10 CFR 20.1402

The NRC staff noted that the approaches approved for derived concentration guideline levels (DCGLs) for Hematite was more complex than for most sites. Two approaches for the DCGLs were approved in the decommissioning plan (DP): a uniform approach and a three layer approach. The NRC staff then went through a document it generated that described the NRC's understanding of the DCGL approaches approved in the DP. The NRC staff stated that in the course of its review of Westinghouse's response and the associated procedure (HDP-PR-FSS-721), the NRC staff found that the Hematite procedure allowed for an inappropriate combining of the two DCGL approaches that were approved in the Hematite DP. Westinghouse stated that it was not combining the two DCGL approaches and committed to revising the procedure to make it clearer.

Westinghouse also provided the NRC staff with a spreadsheet with an example calculation of the implementation of the sum of fractions in using the three layer DCGL approach. NRC staff reviewed this calculation and concluded that the approach used to determine the sum of fractions seemed appropriate.

#### DCGL versus Gamma Walkover Survey

The NRC staff stated that it has received additional information on this topic and is performing a technical review of this information.

#### Sidewall Sampling

Westinghouse described a plan that it developed for sampling the sidewalls. This plan was documented in an internal memo (HEM-15-MEMO-039). In this plan, the sidewalls were sampled if any sample in the survey unit had a concentration of greater than 2.5 pCi/g of Tc-99, which corresponds to 10% of the DCGL. Westinghouse said that this was based on insignificant radionuclides being defined in the DP as those which contribute less than 10% to the 25 mrem/yr dose criteria. The NRC staff questioned whether there would be a correlation

between the Tc-99 concentration at the bottom of an excavation and the sidewall. Westinghouse responded that the concentration of Tc-99 in sidewall samples taken to date agree with the systematic samples and that the sidewalls were no more likely to contain elevated Tc-99.

NRC staff concluded that the method described in HEM-15-MEMO-039 was acceptable, with the exception that the NRC staff had concerns with the first bullet (i.e., samples would only be taken if the systematic or biased samples from the survey unit exceeded 10% of the applicable DCGL<sub>w</sub>). Westinghouse committed to revising the memo to delete this bullet and to revise its procedure to include this information. NRC staff also noted that it would also be clearer if a definition of "vertical or near vertical" were included in these documents.

Westinghouse stated that this process would be used in the future and had been used in the past. Westinghouse noted, however, that there are some survey units that have already been backfilled for which this process was not followed. These survey units had shallower excavations and had low Tc-99. Westinghouse will provide justification for the characterization of Tc-99 in the FSSRs for these survey units. NRC staff stated that it will evaluate the information available for those survey units when those FSS reports are submitted to determine if they have been characterized adequately.

#### Burial Pit Identification

The NRC and Westinghouse discussed the approach that Westinghouse was using to determine that all burial pits have been found. Westinghouse stated that it used visual and radiological methods to identify the burial pits, but did not want to discount the core bores performed for criticality safety and other things that were done. The NRC staff asked if the core bore results were tied to the DCGL values. Westinghouse said they were not, but it kept excavating if debris was seen in the cores. NRC staff noted that cores were done on a 20 ft triangular grid and that there could be pits that are smaller than that. Westinghouse said that the pits that were dug up were larger and were interconnected and that the undocumented burials are smaller and considered to be non-radiological. NRC asked if any material that had activities greater than the DCGL values was found in the undocumented burials. Westinghouse said there had been. NRC staff asked if any undocumented pits had been identified below the 4 ft overburden, and Westinghouse said that the undocumented burials that were found had all been shallow. Westinghouse stated that in the burial pit area, the 4 ft of overburden was removed or cores were done. Westinghouse said that based on this, it concluded that all undocumented burials had been found. Westinghouse stated that an evaluation was performed in HDP-TBD-NC-205 that estimated that it has identified pits with 95% certainty. Westinghouse noted that additional information on the identification of burial pits is in HDP-RPT-FSS-303.

The NRC staff reviewed HDP-RPT-FSS-303 and HDP-TBD-NC-205 and found that the NRC still has significant questions. The justification of using visual and radiological indications provided describes how this process worked to find the pits that were found, but does not justify that they did not miss any pits. The NRC staff noted that in the process of remediating the site Westinghouse has identified more items than was predicted based on characterization. The NRC staff proposed two possible paths forward: either the NRC staff can review these two documents and ask requests for additional information (RAIs) or Westinghouse can provide a new document to the NRC that incorporates the additional information. Westinghouse stated that it would provide the NRC with a new document.

Westinghouse clarified that the site defined the term burial pit to mean the known documented burial pits. The undocumented burials are referred to as undocumented burial areas. Westinghouse proposed to separate the discussion of the burial pit areas and undocumented burial areas. NRC staff agreed that the discussion could be separated into the two areas. NRC staff stated that the purpose of its question is to ensure that radiologically contaminated debris will not remain buried on site following remediation in any area on site.

The NRC and Westinghouse then discussed in HDP-RPT-FSS-303 and HDP-TBD-NC-205 in detail. The NRC staff noted that a visual approach to confirming that all pits have been found is subjective and that there should be an objective way of determining that all pits have been found. The NRC staff stated that there should be a nexus between the visual and radiological methods. The NRC staff also asked for the basis for size assumed for a burial pit in the HDP-TBD-NC-205.

Based on the discussion of the burial pit identification, Westinghouse decided that it would provide a document to the NRC as part of the FSS overview that provides a justification that radiologically contaminated burials will not remain on site following remediation.

#### Summary of Status of FSS Issues Identified in NRS's July 17, 2015 letter

- Inputs to the scan MDC – item has been resolved
- Description of remediation activities following initiation of FSS – item has been resolved
- Appropriate sampling of the reuse pile – item has been resolved
- Demonstration of compliance with the dose criteria in 10 CFR 20.1402 – Westinghouse is providing a revised procedure to clarify the approach it is using
- DCGL vs Gamma Walkover Survey - NRC staff is reviewing information provided by Westinghouse
- Sidewall Sampling – Westinghouse is providing the NRC a revised procedure and revised memo describing its process for sampling sidewalls
- Identification of Burial Pits – Westinghouse is providing the NRC documentation as part of the FSS overview document

A face to face public meeting between the NRC and Westinghouse had been scheduled for August 19-21, 2015 to further discuss issues related to the Hematite FSS. At Westinghouse's request, this discussion will be held via a teleconference on August 19-20, 2015 instead. Westinghouse stated that it planned to submit a proposed outline of its FSSR to the NRC by August 14, 2015. Westinghouse proposed that the teleconference would cover the outline and information submitted by Westinghouse to address the FSS issues described above. Westinghouse also proposed that we hold a face to face meeting in September. This meeting would involve a more in depth discussion of the FSSR, including revised reports for LSA 10-01 and 10-02 that Westinghouse plans to submit to the NRC.

Two members of the public participated in this teleconference: Ruth Thomas of Environmentalists, Inc and Ben Moore of the Missouri Department of Natural Resources (MDNR). Ms. Thomas asked a number of questions regarding the site ownership, what the NRC is doing to monitor the remediation of the site, the waste disposal from the site, and whether changes to Part 61 affect the waste disposal from the site. The NRC staff responded that the site was owned by Westinghouse and that NRC staff monitors the decommissioning of

the site through inspection of the site and review of the FSSR. The NRC staff noted that a description of waste disposal from the site was documented in the decommissioning plan and in the 20.2002 alternate disposal requests. The NRC staff stated that the current Part 61 applies to the current waste disposal from the site. Mr. Moore from MDNR asked for clarification of the depth of the bore holes and what items were found in the unidentified burial areas. Mr. Moore also provided a number of suggestions for Westinghouse for improving the readability of the maps in HDP-RPT-FSS-303.

Docket No. 070-00036  
License No. SNM-00033

Enclosures:

1. Participant List
2. Approaches to demonstrating compliance with the dose criteria in 10 CFR 20.1402

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<b>DATE</b>	08/18/15	08/19/15	08/20/15	08/20/15

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**Participant List**

**8/11/15**

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Karen Pinkston  
Duane Schmidt  
Ted Smith  
Katie Tapp  
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Members of the Public

Ben Moore, MDNR  
Ruth Thomas, Environmentalists, Inc

**8/12/15**

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