Westinghouse Non-Proprietary Class 3



Westinghouse Electric Company LLC Hematite Decommissioning Project 3300 State Road P Festus, MO 63028 USA

U.S. Nuclear Regulatory Commission ATTN: Document Control Desk Washington, DC 20555-0001 Direct tel: 314-810-3355 e-mail: fusselgm@westinghouse.com Our ref: HEM-15-131 Date: December 23, 2015

- Subject: Hematite Decommissioning Project Reply to a Notice of Violation Issued November 27, 2015 (License No. SNM-00033, Docket No. 070-00036)
- Reference 1: NRC (R. Orlikowski) letter to Westinghouse (G. Fussell), dated November 27, 2015, "NRC Inspection Report 07000036/2015003(DNMS) Westinghouse Electric Company (Hematite) and Notice of Violation" (ML15334A404)

Pursuant to the provisions of 10 CFR 2.201 and Reference 1, this letter submits the Westinghouse Electric Company LLC (Westinghouse) reply to the Notice of Violation that was transmitted by Reference 1.

Westinghouse contests violation 1, 2 and 3 and accepts violation 4. Attachment 1 to this letter provides the reply to the violations in the format specified in the Notice of Violation.

As requested in Reference 1, Westinghouse in Attachment 2 is providing an Extent of Condition document relevant to actual or potential isolation control breaches of survey units in which Final Status Survey has been completed.

Please contact Kenneth Pallagi of my staff at 314-810-3353 should you have questions or need any additional information.

Sincerely,

/ luco EVley- for

Gay M. Fussell Director, Hematite Decommissioning Project

- Attachments: 1) Westinghouse Response to Notice of Violation Issued by NRC on November 27, 2015
 - 2) Extent of Condition Relating to Isolation Control Breaches
- cc: J. W. Smetanka, Westinghouse
 A. Persinko, NRC/NMSS/DUWP
 M. A. Norato, NRC/DUWP/MDP
 J. A. Smith, NRC/ DUWP/MDP
 C. D. Pederson, NRC Region III
 J. F. Lara, NRC Region III/DNMS
 J. B. Giessner, NRC Region III/DNMS
 M. A. Kunowski, NRC Region III/DNMS/MCID
 M. M. LaFranzo, NRC Region III/DNMS/MCID

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Attachment 1

Westinghouse Hematite Decommissioning Project Response to Notice of Violation Issued by NRC on November 27, 2015

Westinghouse Electric Company LLC, Hematite Decommissioning Project

Docket No. 070-00036

WESTINGHOUSE RESPONSE TO NOTICE OF VIOLATION ISSUED BY NRC ON NOVEMBER 27, 2015

During an U.S. Nuclear Regulatory Commission (NRC) inspection conducted between June 25, and October 15, 2015, four violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

VIOLATION 1.

Condition 9 of License SNM-33 states, in part, that the authorized usage of licensed material is described in the August 12, 2009, Decommissioning Plan (DP) and associated supporting documents noted in Hematite DP Safety Evaluation Report (ML112101630).

Section 13.0 titled "Quality Assurance Program" in the August 12, 2009, DP and associated supporting documents noted in the Hematite DP SER (ML112101630) states, in part, that the Hematite facility specific Quality Assurance (QA) plan for decommissioning is detailed in the Westinghouse Electric Company (WEC) document number HDP-PO-QA-001, Project Quality Plan (PQP). All work related to the Hematite facility decommissioning is required to comply with the PQP. The PQP and its implementing procedures establish the requirements that personnel are required to take for quality related activities.

Procedure HDP-PO-QA-001, Section 12, "Instructions, Procedures and Drawings," states, in part, activities affecting quality are prescribed by and performed in accordance with documented policies, procedures, plans, and/or drawings of a type appropriate to the circumstance.

Section 8.2.3 of HDP-PR-HP-602 Revision 3 references Work Package HDP-WP-ENG-803 titled "Isolation and Control Measures."

Section 4.1 of HDP-WP-ENG-803 states, in part, that BMP's (Best Management Practices) concerning storm water and surface water management are detailed in HDP-WP-OPS-503 "Construction Storm Water Management."

Section 3.0 "Structural BMP's" of Appendix B "Best Management Practices" of HDP-WP-OPS-503 states, in part, that storm water and surface water will be prevented from entering excavated areas: by maintaining or improving existing grade surrounding the excavation; installing diversionary berms and dikes around the areas of the excavation; installing silt fencing or equivalent filtering control; and constructing temporary barriers to slow flow velocity.

Contrary to the above on or about August 30, 2015, the licensee failed to prevent storm water from entering excavated area LSA 02-01. Specifically, storm water transported 15 radiologically contaminated items from LSA 05-04 to LSA 02-01.

This is a Severity Level IV violation.

Westinghouse contests this violation and provides the following basis for disputing the violation.

1. BASIS FOR DISPUTING THE VIOLATION

Westinghouse does not dispute the fact that storm water caused by a severe rain event transported 15 radiologically contaminated items from LSA 05-04 into LSA 02-01. Rather, Westinghouse disputes the basis of the violation in that it "failed to prevent storm water from entering excavated area LSA 02-01". Westinghouse contends that the Decommissioning Plan (DP) and associated supporting documents noted in Hematite DP Safety Evaluation Report (SER) does not require the absolute prevention of any amount of storm water from entering an excavation.

In Inspection Report 07000036/2015002 (ML15212A958) Westinghouse received a notice of violation in which NRC Region III stated that "Contrary to the above on March 31, 2015, the licensee failed to ensure a berm or equivalent was placed to physically prevent water flow into an isolated area from surface water that could cause cross contamination. Specifically, the licensee had placed a silt fence and straw bales between Area 1 and Area 3 which did not prevent water flow into Area 1, an isolated area, from Area 3, a potentially contaminated area."

The notice of violation contained in the NRC November 27, 2015, Inspection Report 07000036/2015003 NRC Region III states "Contrary to the above on or about August 30, 2015, the licensee failed to prevent storm water from entering excavated area LSA 02-01. Specifically, storm water transported 15 radiologically contaminated items from LSA 05-04 to LSA 02-01."

In reviewing these two notices of violation Westinghouse notes that NRC Region III appears to have arbitrarily established an absolute criteria of "zero" storm water from being allowed to enter an excavated area as the determining factor for issuance of the notice of violation. Westinghouse contends that this criterion is inappropriate and not consistent with the Hematite licensing basis.

During the inspection period exit teleconference held on October 13, 2015, NRC Region III, in regards to the contaminated items identified by ORAU in LSA 02-01 the week of August 31, 2015, stated that the licensee "Had not completed an analysis that considered rainfall amounts and subsequently had not calculated storm water flow rates on the surface of the ground for the severe type rain event that caused the transfer of the contaminated items from LSA 05-04 to LSA 02-01." Westinghouse understood at that time of the statement by NRC Region III that the lack of an analysis that calculates the storm water flow rates on the surface of the ground for rain events was the basis for NRC Region III inference that the isolation and control barriers put into place were of inadequate design to prevent the transfer of the contaminated items from LSA 05-04 to LSA 04 into LSA 02-01 during the severe rain event.

In the basis for the violation, NRC Region III cites the DP and documents noted in the Hematite DP Safety Evaluation Report as well as other site Policies, Procedures and Work Packages. Westinghouse noted that although NRC Region III infers inadequate design of the isolation and control barriers, there is an absence of a specific reference in the violation to the Environmental

Report specifically related to the discussion of the severe rain events. DO-08-009. Environmental Report, Section 3.6.1 Meteorology and Climatology states the following: "The Missouri Water Atlas (Reference 9-32) was consulted to determine local precipitation characteristics. The area of the Hematite Site receives an average of 38 in. of precipitation annually, with 12 in. of annual runoff. Approximately 45 percent of the total yearly precipitation falls from April through September. The maximum 10-day precipitation event would vield 9 in. of precipitation in a given 25-year span. Snowfall has averaged less than 20 in. per winter season since 1930. December, January and February are the driest months, while April and May are normally the wettest. It is not unusual to have extended periods (1 to 2 weeks or more) without appreciable rainfall from the middle of the summer into the fall. Thunderstorms occur on average between 40 and 50 days per year, mostly between May and August. The U.S Department of Commerce reports a mean annual frequency of about 8 tornadoes per year based on data for a 30-year period. The probability of a tornado striking the site location is computed as 7.51 x 10-4, and the recurrence interval is 1,331 years (Reference 9-27)."

As noted by NRC Region III, this information is part of the SER. Therefore, Westinghouse considers the parameters contained within the section of the Environmental Report to be the bounding and appropriate values for the design basis of isolation and control requirements in regards to rain events, as opposed to Region III's position of physically preventing all storm water flow as indicated in the notice of violation. The presence of the information in the Environmental Report, Section 3.6.1 counters the NRC Region III statement that the licensee had not completed an analysis that considered rainfall amounts and subsequently storm water flow rates.

Utilizing the values provided in the Environmental Report of a 10-day, 9 inch precipitation event in a 25 year span, the site would expect the performance criteria for BMPs to be such that the BMPs would able to accommodate storm water ground surface flow rates of 0.9 inches of rain in a 24 hour period (or 0.0375 inches per hour). On August 30, 2015, the site experienced a severe rain event (beyond the design basis of the isolation and control measures) of 2.52 inches of precipitation in a 1 hour and 20 minute period (or 1.89 inches per hour). The storm water ground surface flow rate associated with that acute period of time would be approximately 50 times greater than the expected 25 year, 10 day event.

Also to support Westinghouse's contention that the design of the BMPs are adequate to meet the 25 year, 10 day rain event the available radiological survey information for the radiological surveys conducted by both the NRC and ORAU of the survey units in which FSS has been competed have been reviewed. The review indicates that with the exception of the radioactive material identified in LSA 02-01 as caused by the severe rain event of August 30, 2015, the physical isolation and control BMPs that have been implemented at HDP have an exceptionally high degree of success in handling storm water within a design basis of a maximum 10-day precipitation event that would yield 9 inches of precipitation in a given 25-year span as stated in the Environmental Report as no other radiological impacts have been identified.

Westinghouse considers that the meteorological conditions experienced during the severe rain event of August 30, 2015, to be beyond the design basis of the parameters used for FSS isolation

control at the Hematite site as required by License Condition 9, as described by the Hematite Safety Evaluation Report, as further described in the Environmental Report.

Subsequently, in discussions with NRC Region III during the on-site inspection the Week of December 14, 2015, Westinghouse requested clarification on the basis for the violation. NRC Region III provided a more simplistic basis for the violation in that the HDP procedure states the purpose of BMPs is to prevent stormwater flow.

Consistent with the above discussion Westinghouse considers the text that is contained in site procedures that state "surface water will be prevented from..." to be written in the context of the information provided in the Environmental Report as descriptive intent rather than prescriptive requirement.

In summary, Westinghouse contends that NRC Region III has incorrectly established an isolation control criteria of "absolutely no storm water" entering an excavation. Westinghouse also contends NRC Region III use of Section 3.0 "Structural BMP's" of Appendix B "Best Management Practices" of HDP-WP-OPS-503 as a basis to issue the notice of violation is a use of the description of BMPs that is outside the context of the Environmental Report.

2. CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

In regards to the 15 contaminated items transported from LSA 05-04 to LSA 02-01 by the storm water that ORAU identified on September 3, 2015, upon notification by the NRC Inspector that was on-site Westinghouse performed a gamma walk over survey to confirm the presence of the contaminated items.

Later in the day on September 3, 2015, the contaminated items identified in LSA 02-01 were removed in accordance with site procedures for waste disposal, with the exception of the largest piece which was retained for analysis and eventually transferred to the possession of the NRC for future evaluation by ORAU. The surface area where the contaminated items were identified was then scraped using a large excavator to remove the contaminated items and the surrounding soil. Scraping of this area by the excavator also allowed for further investigation to determine if additional contaminated items could potentially be located sub-surface. No other contaminated items were identified on September 3, 2015. The remediation resulted in two dump truck loads of soil along with the contaminated items being removed from the affected area in LSA 02-01 and transferred to Waste Holding Area Bin #9. This material was subsequently loaded into a rail car and shipped to USEI on September 9, 2015, for disposal.

On September 4, 2015, a follow up gamma walk over survey was performed as a post remediation activity by HDP Health Physics and was subsequently followed by a confirmatory Final Status Survey by the FSS Contractor of the affected area. As the NRC Region III Inspector was still on-site, Westinghouse requested that the NRC Region III Inspector perform a gamma walk over survey prior to departure from the site. The Region III Inspector honored the request to perform a gamma walk over survey of the affected area. The results of the survey are in the possession of NRC Region III.

On September 8, 2015, (following the 3-day Labor Day Holiday weekend when work activities were not in progress) HDP performed a 100% visual inspection and Gamma walk over survey (extent of condition) of the Site Pond, and no additional or similar items were identified. All observed gamma readings were consistent with the gamma walk over survey results previously collected, indicating the identification of the contaminated items was confined to the northeast section of LSA 02-01.

The visual inspection and radiological survey were then expanded to the survey units designated LSA 05-04, LSA 04-02 and LSA 04-03 that are directly east and up-gradient of and adjacent to the Site Pond survey units LSA 02-01 and LSA 02-02. Remediation and final status survey as of this time were not complete in LSA 05-04, LSA 04-02 and LSA 04-03. As expected, the visual inspection identified similar in nature, but different items in that they were much smaller and lighter items, and only in survey unit LSA 05-04. None of the items identified in LSA 05-04 indicated the presence of radioactive material as determined by radiological survey.

On September 9, 2015, additional remediation in LSA 05-04 was performed to ensure adequate removal of any similar material that may exist if any similar material existed subsurface. Radiological surveys and visual inspections during the remediation of LSA 05-04 did not identify any additional material subsurface in the area.

On September 10, 2015, after the completion of the prior day's remediation in LSA 05-04, a gamma walk over survey was performed in the LSA 05-04 area where the remediation was conducted. All observed radiological survey measurements were consistent with background, and no additional material was observed by visual inspection.

Later on September 10, 2015, another localized and heavy rain event occurred where 1.75 inches of rain fell on the site in approximately 15 minutes. This caused flash flooding that led to damage and washout of BMP's surrounding the north end of the site pond in LSA 02-01. The NRC Region III Inspector was onsite at the time.

After the rain event had passed, as required by site procedures, visual inspection of the Site Pond LSA 02-01 survey unit was performed and indicated that the BMP's had been damaged as well as gravel from the adjacent area of LSA 05-04 had been washed into the LSA 02-01. On September 11, 2015, the gamma walk over portion of the inspection was conducted in LSA 02-01 with no contamination identified.

In regards to the possibility of radioactive material being transported by storm water in other areas of the site where FSS has been completed, as a corrective action Westinghouse implemented a revision to HDP-WP-ENG-802, *Backfill & Site Restoration*. A new paragraph was added to step 4.4, Authorization to Proceed, as follows; "*The RSO will ensure that a confirmatory gamma walk over survey of the subject LSA has been completed no more than 72 hours prior to the commencement of backfill operations*. The results of the survey will be compared to the original FSS and placed in the document file for the FSS unit. If survey results are observed to be significantly different than the original FSS (by greater than 3 sigma above the mean) then backfill will not occur and FSS will be repeated."

This additional step in the work package will ensure that a gamma walkover survey is performed just prior to backfill to identify if any radioactive material may have been transferred into a survey unit in which FSS has been completed. This will preclude unknowingly covering or making inaccessible the radioactive material by backfill soil. Other survey units that have not been excavated and/or do not require backfill will remain open and accessible for inspection.

3. CORRECTIVE STEPS THAT WILL BE TAKEN

As Westinghouse contends that no violation of NRC requirements occurred in regards to "failed to prevent storm water from entering excavated area LSA 02-01" no corrective steps are required.

Nevertheless, Westinghouse has initiated Westinghouse Corrective Action Prevention And Learning (CAPAL) Issue #100348380. The information included in this response to the violation will be incorporated into the Limited Cause Analysis that is a component of this CAPAL.

4. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

In regards to the notice of violation that the Westinghouse failed to prevent storm water from entering LSA 02-01, Westinghouse disputes the criteria used as the basis for the determination of the notice of the violation. As such, compliance with the design parameters as described in the Environmental Report as the performance criteria for the BMP's utilized for isolation and control has been maintained.

In regards to the identification of potential or actual isolation control breaches in any area where Final Status Surveys have been performed and radioactive material may have impacted the survey unit, full compliance was achieved on October 28, 2015, with the implementation of Revision 3 to work package HDP-WP-ENG-802, Backfill & Site Restoration. Additional Attachment 2, *Extent of Condition Relating to Isolation Control Breaches*, provides further demonstration of full compliance being achieved.

VIOLATION 2.

Condition 9 of License SNM-33 states, in part, that the authorized usage of licensed material is described in the August 12, 2009, Decommissioning Plan (DP) and associated supporting documents noted in Hematite DP Safety Evaluation Report (ML112101630).

Section 13.0 titled "Quality Assurance Program" in the August 12, 2009, DP and associated supporting documents noted in the Hematite DP SER (ML112101630) states, in part, that the Hematite facility specific Quality Assurance (QA) plan for decommissioning is detailed in the Westinghouse Electric Company (WEC) document number HDP-PO-QA-001, Project Quality Plan (PQP). All work related to the Hematite facility decommissioning is required to comply with the PQP. The PQP and its implementing procedures establish the requirements that personnel are required to take for quality related activities.

Procedure HDP-PO-QA-001, Section 12, "Instructions, Procedures and Drawings," states, in part, that each organization performing activities covered by the QA Program shall establish adequate procedures implementing the requirements of the PQP (Project Quality Plan) that apply to its work.

Contrary to the above, the licensee failed to establish adequate procedures implementing the requirements of this PQP (Project Quality Plan) that apply to its work. Specifically, HDP-PO-FSS-700 did not address licensee actions if a rain event occurred and water and/or sediment could have entered previously Final Status Surveyed area. On or about August 30, 2015, a rain event occurred and moved 15 radiologically contaminated items into LSA 02-01, a previously Final Status Surveyed area.

This is a Severity Level IV violation.

Westinghouse contests this violation and provides the following basis for disputing the violation.

1. BASIS FOR DISPUTING THE VIOLATION

Westinghouse contends that the Decommissioning Plan (DP) and associated supporting documents noted in Hematite DP Safety Evaluation Report (SER) do not require site procedures to address rain events beyond the rain events described in the Environmental Report, Section 3.6.1, Meteorology and Climatology.

As stated in the response to Violation 1, Westinghouse uses the information from the Environmental Report, Section 3.6.1, Meteorology and Climatology as the basis and bounding parameters for isolation controls as implemented through site procedures. Events such as tornados, super cells, microbursts or severe storms that cause severe rain events such as that experienced on August 30, 2015, are considered beyond the 10-day, 9 inch precipitation event in

a 25 year span for isolation and control, as such the site did not incorporate specific actions for these types of events into the site Final Status Survey policy (HDP-PO-FSS-700) and procedures.

Rather than providing instructions for rain events outside of the bounds of the Environmental Report in HDP-PO-FSS-700, if a rain event such as the previously discussed August 30, 2015, type of event, site actions are contained in HDP-PO-EHS-003, *Emergency Action Plan*. The Emergency Action Plan section 8.6 discusses site actions for tornadoes and severe weather. The Emergency Action Plan section 8.7 discusses site actions for flooding both forecasted and unanticipated.

Westinghouse believes the site procedures adequately provide actions necessary to be taken after a rain event.

The Decommissioning Plan section 8.6, *Surface Water and Groundwater*, states in part "Sources of surface water and groundwater, incidental to site remediation activities, will be managed according to the WMP and storm water pollution prevention measures within work packages, procedures, or other site documents."

The HDP Stormwater Pollution Prevention Plan (SWPPP) requires the inspection of all BMP's monthly and that inspections will be performed within 24 hours during the work week of a rainfall event of 0.25 inches or more. To ensure this requirement is met, site Environmental personnel inspect the site BMPs weekly regardless if any rainfall has occurred or not occurred. Photographs are taken and to guide any necessary repair activities. Environmental personnel are cognizant of the radiological status of the various areas of the site and inform Health Physics when the inspections indicate that a breach would provide a radiological impact.

As remediation of survey units progress to the point that the source term has been significantly reduced to anticipate initiation of Final Status Survey, HDP-PR-HP-602, Data Package Development and Isolation Control Measures to Support Final Status Survey is implemented. Once the steps directed by HDP-PR-HP-602 have been completed it then instructs implementation of the design and installation of BMPs per HDP-WP-ENG-803, *Isolation and Control Measures*, for the purpose of Final Status Survey. In concert with the inspection required by the SWPPP the assessment of BMPs in regards to isolation and control is documented as required by step 7.2.1 of HDP-WP-ENG-803. Health Physics is informed of any condition of a BMP that would indicate an assessment for potential cross contamination as directed by the Radiation Safety Officer. The assessment of site conditions, including impacts of rain events, by the RSO and Health Physics personnel for the potential for cross contamination is an ongoing assessment regardless if a survey unit has had Final Status Survey completed or not.

Westinghouse provided to the NRC a copy of memorandum HEM-15-MEMO-064 in which it states in part "*At the time, no potential for cross contamination was suspected based on a visual inspection performed on August 31, 2015 of existing BMPs, the visual inspection did not identify that the integrity of the BMPs had been overwhelmed, and a determination was made that storm water did not exceed the height of the silt fence, and straw bales.*" This demonstrates that site procedures have been adequate in providing instructions to site personnel in the instance of a rain

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event occurring and water and/or sediment could have entered previously Final Status Surveyed area.

In the instance of the 15 contaminated items that were transferred into LSA 02-01, it was the visual inspection that proved to be inadequate as the material was not visually discernable from the surrounding soil, rather than the procedures not inadequately providing instructions to perform and inspection. It is for this reason the corrective action, as provided in Violation 1, of requiring a gamma walk over survey be performed prior to backfill has been implemented in work package HDP-WP-ENG-802, *Backfill & Site Restoration*. The gamma walk over survey provides a higher degree of confidence in detecting radioactive material as compared to a visual inspection of BMPs and the soil.

2. CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

As Westinghouse contends that no violation of NRC requirements occurred, corrective steps are not required to be taken.

3. CORRECTIVE STEPS THAT WILL BE TAKEN

As Westinghouse contends that no violation of NRC requirements occurred, as such no additional corrective steps are required.

Nevertheless, Westinghouse has initiated Westinghouse Corrective Action Prevention And Learning (CAPAL) Issue #100348381. The information included in this response to the violation will be incorporated into the Limited Cause Analysis that is a component of this CAPAL.

4. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

As Westinghouse contends that no violation of NRC requirements occurred, full compliance has been maintained.

VIOLATION 3.

Condition 9 of License SNM-33 states, in part, that the authorized usage of licensed material is described in the August 12, 2009, Decommissioning Plan (DP) and associated supporting documents noted in Hematite DP Safety Evaluation Report (ML112101630).

Section 14.4.4.1.6.2 titled "Sub-surface Soil" in the August 12, 2009, DP and associated supporting documents noted in the Hematite DP SER (ML112101630) states, in part, the Final Status Survey (FSS) will consist of Gamma Walkover Survey's (GWS) of 100 percent of the excavated surfaces to be included in the survey unit, or portion of a survey unit.

Contrary to the above on May 29, 2015, the licensee did not perform a 100 percent GWS of LSA 10-01 and 10-02 of the excavated surfaces that were included in the survey unit, as documented in HEM-15-52, dated May 29, 2015.

This is a Severity Level IV violation.

Westinghouse contests this violation and provides the following basis for disputing the violation.

1. BASIS FOR DISPUTING THE VIOLATION

The basis for disputing the violation lies in the fact that 1) NRC Region III has interpreted the meaning of 100% GWS outside the context of 100% GWS as described and applied by MARSSIM, acceptable industry standard practice, and is contrary to the resolution of this issue that was achieved with NRC Headquarters and Westinghouse, and 2) HEM-15-52 has been previously withdrawn by Westinghouse letter HEM-15-100, "Withdrawal of Hematite Decommissioning Technical Report HDP-RPT-FSS-202, Survey Area Release Record for Land Survey Area 10, Survey Units 01 and 02 (LSA 10-01 and LSA 10-02)".

NRC Inspection Report 07000036/2015001 (ML15086A365) in regards to Final Status Survey at HDP stated that "On January 16, 2015, the NRC contacted the licensee telephonically and presented 46 comments regarding the licensee's procedures." The HDP staff recognized that this was a significant gap in the mutual understanding of the FSS program for HDP. As such, to ensure the mutual understanding, and to determine the appropriate path forward for the resolution of the issues and performance of FSS, the HDP Managing Project Director initiated discussions with NRC staff to arrange a face to face meeting of the appropriate NRC personnel and HDP staff at the HDP site. As the issues to be resolved were relevant to the Final Status Survey Report, which are documents that would be provided to the NRC in the future, Westinghouse believed that a request for the meeting was appropriate and within the context of "NRC actions" as stated in NUREG-1757, 11.3.4 the fourth bullet "If the technical review indicates that the FSSR is unacceptable, inform the licensee of the deficiencies. Coordinate the resolution of the deficiencies with the licensee and any other appropriate organizations exercising regulatory authority at the facility." Westinghouse believed that the meeting would be beneficial in resolving the gap in the mutual understanding of the FSS program as described

above in the Inspection Report. The meeting was agreed to and was scheduled for February 12, 2015.

The February 12, 2015, meeting was held at the Hematite site with the following outcomes; 1) Westinghouse would provide to the NRC a technical report that contained the survey area release record for survey units LSA 10-01 and LSA 10-02 which would be used as a template for future survey area release records, 2) Westinghouse would submit the technical report to the NRC on the docket to ensure the appropriate protocol for review was being followed, 3) the NRC would perform a review and provide comments to Westinghouse and the comments would be placed on the docket, and 4) the NRC and Westinghouse would conduct resolution to technical issues by way of scheduled public teleconference meetings.

Subsequent to the commitments of February 12, 2015, meeting, by letter HEM-15-52 dated May 29, 2015, (ML15176A780) Westinghouse submitted to the NRC Technical Report HDP-RPT-FSS-202 which contained the survey area release record for LSA 10-01 and LSA 10-02.

As agreed to in the February 12, 2015, meeting the NRC conducted a review of HDP-RPT-FSS-202 and responded with comments by NRC letter dated August 11, 2015 (ML15230A324).

Concurrent to NRC Headquarters review NRC Region III also conducted a review of HDP-RPT-FSS-202. Based upon NRC Region III's review of the pixelated colored maps included in the report, which provided a visual representation of the GWS performed in the survey units, NRC Region III communicated to Westinghouse the position that Westinghouse was not compliant with the requirements of the HDP FSS Program. Westinghouse provided through discussions with the NRC Region III Inspector its understanding and application and intent of 100% GWS as it related to MARSSIM and acceptable industry standard practices as implemented by the HDP Final Status Survey Program. The position being that 100% GWS is objective but it is recognized for safety and other reasons a 100% GWS may not be possible. These occurrences are to be discussed in the survey area release record for the survey unit.

To ensure that Westinghouse was communicating to NRC Region III the appropriate understanding and implementation of "100% GWS" as it applies to a MARSSIM based survey Westinghouse consulted with a Certified Health Physicist whose expertise is in the area of MARSSIM based surveys and also with retired NRC Region III DNMS/MCID Inspectors whose primary duties included inspection of licensee's MARSSIM based Final Status Survey Programs. All of these individuals concurred that Westinghouse was applying and implementing "100% GWS" in the context of MARSSIM. Resolution of this issue with NRC Region III could not be reached. As such, the NRC Region III Inspector recommended, and the HDP Staff concurred, that it would be appropriate for the issue to be presented to NRC Headquarters for their review and feedback "As they make determinations in regards to the technical aspects of FSS."

Having received the NRC Headquarters comments for Technical Report HDP-RPT-FSS-202 (ML15218A409) Westinghouse reviewed the comments, and based upon the NRC comments developed a proposed path forward for submittal of FSS survey area release records and other FSS information. The proposed path forward was presented to, discussed with and agreed to by the NRC during a publicly noticed teleconference on August 19, 2015, as recorded in the

Publicly Noticed Teleconference Summary (ML15238B032). The proposed template format of the HDP Final Status Survey Final Report dated August 13, 2015, is found on NRC web-based ADAMS with Accession Number ML15238B064.

Recognizing the need to achieve resolution on the 100% GWS issue as presented by NRC Region III Westinghouse included in the proposed template of the HDP Final Status Survey Final Report in Volume 3 Land Survey Area, Chapter 1, Section V. i. Gamma Walk Over Survey a bullet titled "A description of the intent of 100% GWS". This then ensured that the resolution of the 100% GWS issue by future discussions between Westinghouse and NRC Headquarters would be documented.

Having an agreed upon path forward on the HDP Final Status Survey Final Report, Westinghouse submitted letter HEM-15-100, dated September 14, 2015, "*Withdrawal of Hematite Decommissioning Technical report HDP-RPT-FSS-202, Survey Area Release Record for Land Survey Area 10, Survey Units 01 and 02 (LSA 10-01 and LSA 10-02)*" as submitted by Westinghouse letter HEM-15-52.

To achieve resolution of the NRC Region III 100% GWS issue, Westinghouse submitted to NRC Headquarters a position paper on 100% GWS for review and discussion on a future regularly scheduled Publicly Noticed Teleconference. On October 29, 2015, the Westinghouse paper on 100% GWS was discussed during the Publicly Noticed Teleconference. Westinghouse believes that resolution to the issue has been achieved as documented in the Publicly Noticed Conference Call Summary (ML15307A152) in which the NRC staff's recommendations with regard to the FSS approach relevant to 100% GWS are documented. The pertinent recommendation from the NRC Staff that demonstrates resolution of the issue is as follows "*It is the NRC's position that, as stated in the DP, 100 percent GWS is the expected objective. However, the NRC recognizes that 100 percent GWS may not be attained when performing FSS in all Class 1 survey units.*"

Westinghouse contends that it has always recognized that 100 % GWS is the expected objective in a Class 1 survey unit and that 100 % GWS may not be attained when performing FSS in all Class 1 survey units. As such the initial issuance of HDP-PR-FSS-722, *Final Status Survey Reporting*, required that "*A discussion of changes that occurred during the performance of the survey that were different from the survey design and plan, including field changes and addendums to the original sample plan.*" Furthermore, HDP-PR-FSS-722 requires "*A discussion of any anomalies that were observed during the performance of the survey or in the sample results.*" From the inception of FSS on-site it has always been Westinghouse's expectation that these types of occurrence would be discussed in the survey area release record in the context that demonstrates compliance with the release criteria.

Subsequent to the October 29, 2015, publicly noticed call in which NRC Headquarters and Westinghouse reached resolution on the NRC Region III issue regarding 100% GWS, on November 19, 2015, Westinghouse implemented Revision 8 to HDP-PR-FSS-711, *Final Status Surveys and Sampling of Soil and Sediment,* in further attempts to clarify the issue for NRC Region III. The following text was added to the procedure; "For Class 1 areas, a 100% GWS of the exposed surface is required. For Class 2 and Class 3 areas, scan each survey area as specified in the survey instructions and any additional areas based on professional judgment

using HDP-PR-HP-416, Operation of the Ludlum 2221 for Final Status Survey (or equivalent instrument authorized by the RSO). If a prescribed survey location or area cannot be scanned in its entirety, indicate this and any other deviation in the Field Log of the FSS Plan and Sampling Instructions."

In addition to the revision to HDP-PR-FSS-711, Westinghouse also implemented Revision 10 to HDP-PR-FSS-701, *Final Status Survey Plan Development*, by adding the following text, "*If a 100% scan of the exposed soil surface is not achievable, then contact the RSO for guidance. Alternative methods of evaluating the area must be employed (e.g., additional sampling, scanning using extension poles, or other methods approved by the FSS plan).*"

Subsequently, in discussions with NRC Region III during the on-site inspection the Week of December 14, 2015, Westinghouse requested clarification on the basis for the violation as Westinghouse and NRC Headquarters had agreed upon resolution of the 100% GWS, had agreed upon the format of future survey area release records would be submitted, Westinghouse withdrew the technical report for LSA 10-01 and LSA 10-02 and NRC Headquarters and Westinghouse agreed that Westinghouse would submit the report for LSA 10-01 and LSA 10-02 in the future as agreed to. NRC Region III responded that although Westinghouse had withdrawn the report submitted by Westinghouse Letter HEM-15-52 that it was on the docket and therefore the violation could be issued.

Westinghouse believes that it has consistently communicated to NRC Region III, and is implementing the proper application of 100% GWS as it applies to MARSSIM based surveys. Westinghouse also believes that the NRC's position and approach on 100% GWS as documented in the Publicly Noticed Conference Call Summary (ML15307A152) is identical to the position and approach of the HDP FSS Program. Westinghouse will continue to honor its agreements with the NRC in regards to the resolution of the 100 % GWS issue.

2. CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

Although no violation of NRC requirements occurred, as provided in section 1 above, Westinghouse was diligent in pursuing resolution of the NRC Region III 100% GWS issue. The result of the issue resolution was that the Westinghouse and NRC understanding of the appropriate approach to implementing 100 GWS% in a Class 1 survey unit is the same.

3. CORRECTIVE STEPS THAT WILL BE TAKEN

As Westinghouse contends no violation of NRC requirements occurred, corrective steps are not required to be taken, Westinghouse will honor its commitment to provide a detailed discussion in the respective survey area release record in which it is indicated a 100% GWS was not achievable due to safety, survey unit configuration or other reasons.

Nevertheless, Westinghouse has initiated Westinghouse Corrective Action Prevention And Learning (CAPAL) Issue #100348372. The information included in this response to the

violation will be incorporated into the Limited Cause Analysis that is a component of this CAPAL.

4. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Westinghouse remains in compliance with the HDP Decommissioning Plan Section 14.4.4.1.6.2 titled "Sub-surface Soil".

VIOLATION 4.

Condition 9 of License SNM-33 states, in part, that the authorized usage of licensed material is described in the August 12, 2009, Decommissioning Plan (DP) and associated supporting documents noted in Hematite DP Safety Evaluation Report (ML112101630).

Section 13.0 titled "Quality Assurance Program" in the August 12, 2009, DP and associated supporting documents noted in the Hematite DP SER (ML112101630) states, in part, that the Hematite facility specific Quality Assurance (QA) plan for decommissioning is detailed in the Westinghouse Electric Company (WEC) document number HDP-PO-QA-001, Project Quality Plan (PQP). All work related to the Hematite facility decommissioning is required to comply with the PQP. The PQP and its implementing procedures establish the requirements that personnel are required to take for quality related activities.

Procedure HDP-PO-QA-001, Section 12, "Instructions, Procedures and Drawings," states, in part, activities affecting quality are prescribed by and performed in accordance with documented policies, procedures, plans, and/or drawings of a type appropriate to the circumstance.

Section 2.0 titled "MODELING AND CALCULATION" of HDP-TBD-FSS-003, Revision 1 states, in part, the instructions given to FSS technicians are to survey as close as possible to the ground surface, (nominally one inch, but not to exceed three inches distance from the surface).

Section 6.6 of HDP-PO-FSS-700, Revision 4 titled "Final Status Survey Program" states, in part, that Health Physics Technicians are responsible for performing and documenting FSSs in accordance with the applicable site procedures and survey package instruments.

Contrary to the above on September 30, 2015, the licensee failed to survey as close as possible to the ground surface. Specifically, the licensee was performing gamma walk-over surveys of LSA 11-01 and the survey meter detector distance to the ground surface was not adjusted when surveying a sloped area.

This is a Severity Level IV violation.

Westinghouse accepts this violation.

1. REASON FOR THE VIOLATION

The reason for the violation was the lack of adequate attention to detail when surveying on a sloped area.

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The FSS Contract Supervisor interviewed the Health Physics Technician performing the survey as observed by the NRC Inspector, in regards to the survey technique required when surveying the "sloped" area of LSA 11-01. The Health Physics Technician acknowledged the recognition of the need to adjust the position of the probe during the performance of the survey when walking a slope. The Health Physics technician indicated that he felt that he was performing the survey as required by procedure.

At this time the FSS Contractor was employing two Health Physics Technicians to perform field work. The FSS Contract Supervisor then discussed the observation by the NRC Inspector with both Health Physics Technicians with an emphasis on attention to detail on survey technique to ensure procedure compliance.

In regards to the adequacy of the survey in relation to the requirements for a gamma walk over survey of a survey unit, LSA 11-01 is a Class 2 survey unit. As a Class 2 survey unit the requirement is a 50% gamma walk over survey of the survey unit is required. As such, a review of the gamma walk over survey indicated that if the surveys of the "sloped" areas of LSA 11-01 were discounted and removed from the survey the total survey coverage still exceeded the 50% criteria.

Nevertheless, the sloped areas of LSA 11-01 were independently re-surveyed by the other Health Physics Technician. This ensures that the survey data that will be incorporated into the survey area release record for LSA 11-01 is accurate. This survey was completed on September 30, 2015.

The resurvey of the sloped area of LSA 11-01 provided the opportunity to perform a comparative assessment of the adherence to the gamma walk over survey conducted by the Health Physics Technicians. If an inadequate technique was used by a Health Physics Technician it would be indicated by an all green (4925 to 8643 CPM) color pixilated map (e.g., no fluctuation of readings above background). The figure provided titled "LSA 11-01 Gamma Walkover Survey Results Prior to Slope Rewalk" indicates that the Health Physics Technician observed by the NRC Inspector did identify by survey the variances in the survey unit (e.g., fluctuations above background). This survey was compared to the resurvey of the sloped area in the figure titled "LSA 11-01 Gamma Walkover Survey Results After Slope Rewalk". The comparison indicates that the two surveys are nearly identical. The result of this comparative assessment lends itself to demonstrating a consistent adherence to the procedural requirements for gamma walk over surveys.

On December 15, 2015, during an on-site inspection by NRC Region III, the NRC Inspector noted a Health Physics Technician performing a gamma walk over survey in LSA 08-01 and noted that the probe was held greater than 3 inches from the ground surface. The NRC Inspector notified the RSO of the observation. In recognition of the issuance of this observation being a recurrence of the violation and not adhering to the procedural requirements for performance of gamma walk over surveys at 10:30 am on December 15, 2015, the RSO implemented a Stop Work Order on all FSS field work.





2. CORRECTIVE ACTION TAKEN AND RESULTS ACHIEVED

In regards to the September 30, 2015, NRC Inspector observation the corrective actions taken are 1) The Health Physics Technician was interviewed to determine the reason for not adjusting the survey meter probe to ground distance for the sloped area, 2) Conducting a supervisory discussion of expectations and procedural compliance with the Health Physics Technicians in regards to awareness of the probe to ground surface distance when surveying on a slope, 3) Performing a resurvey of the sloped area of LSA 11-01 to ensure compliance with the FSS program in regards to submittal of the survey area release record, 4) Performing a comparative assessment of the gamma walk over surveys in the sloped areas of LSA 11-01 as an indicator of the adequacy of the performance of gamma walkover surveys, and 5) Initiated Westinghouse Corrective Action Prevention And Learning (CAPAL) Issue #100348374.

In regards to the December 15, 2015, NRC Inspector observation the corrective actions taken are 1) the Radiation Safety Officer initiated a Stop Work Order for all FSS field work which includes but is not limited to gamma walk over surveys, soil sampling, and structural surveys, 2) Initiated Westinghouse CAPAL Issue #100349993, 3) HDP Management and the FSS Contract Supervisor performed a preliminary causal assessment which indicated the reason for the event was the oversensitivity to observation of the GPS Handset to ensure adequacy of GWS coverage. HDP Management were able to review the photographs the NRC Inspector took of the performance of the gamma walk over survey and noted that the Health Physics Technician's oversensitivity to observation of the GPS Handset, 4) Based upon the preliminary causal assessment developed and presented formal training to the two former Health Physics Technicians and the new Health Physics Technicians (employed after September 30, 2015). The focal point of the training was to maintain the primary focus on the gamma walk over technique and to pause the gamma walk over survey when observing the GPS, 5) Performed a resurvey of LSA 08-11 to determine the extent of the condition, and 6) The FSS Contractor conducted an individual counseling session on adherence to procedural requirements with the Health Physics Technician that performed the survey on December 15, 2015, in LSA 08-11.

3. CORRECTIVE STEPS THAT WILL BE TAKEN

Westinghouse CAPAL Issues #100348374 and #100349993 require that a limited cause analysis be performed by trained individuals within Westinghouse. As an outcome of the limited cause analysis additional corrective actions may be implemented. Upon completion of the limited cause analysis the results will be forwarded to NRC Region III.

As a condition of lifting the Stop Work Order, as documented through CAPAL Issue #100349993, documented management observations of the performance of Final Status Survey by the FSS Contractor have been scheduled for eight consecutive weeks, beginning on December 18, 2015, upon lifting of the Stop Work Order.

Westinghouse has initiated Westinghouse Corrective Action Prevention And Learning (CAPAL) Issue #100348374. The information included in this response to the violation will be incorporated into the Limited Cause Analysis that is a component of this CAPAL.

4. DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on December 18, 2015, upon completing the actions necessary to lift the Stop Work Order.

Attachment 2

Westinghouse Hematite Decommissioning Project Response to NRC Inspection Report 07000036/2015003 dated November 27, 2015 Extent of Condition Relating to Isolation Control Breaches

Westinghouse Electric Company LLC, Hematite Decommissioning Project

Docket No. 070-00036

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In the NRC letter dated November 27, 2015, which contained the issuance of the notice of violation, the NRC requests that Westinghouse perform an extent of condition document relating to any and all potential or actual isolation and control breaches, which would include storm water control, in any areas where Final Status Survey had been performed and radioactive material could have been impacted and the licensee's response to each event, considering any and all radiological conditions.

Westinghouse considerers the request as written to be disproportionate to the information necessary to ensure that radioactive material from an area in which Final Status Survey was not completed was not transferred into a survey unit by storm water or other natural phenomena and the survey unit thereafter would be released for unrestricted use. The NRC request as written in essence is a request for an extent of condition of the entire site after every individual precipitation event experienced over the entire duration of the project.

As an alternative, as the as left condition at time of license termination for land survey areas will be that a survey unit remains in the configuration in which final status survey was conducted or the survey unit will have been backfilled/water flow restored, Westinghouse will responded based on final configuration.

For survey units that are not backfilled or have not had water flow restored they remain open and accessible for inspection and survey to validate the condition of the survey unit. Therefore Westinghouse provides an extent of condition for backfilled and or water flow restored survey units.

LSA 02-01 and LSA 02-02

LSA 02-01 and LSA 02-02 comprise the majority of the Site Pond. Water flow had not been fully restored to the Site Pond as this activity is on hold until the adjacent survey unit LSA 05-04 can be made available for NRC confirmatory survey and sampling.

LSA 02-03

LSA 02-03 is a survey unit that comprises the southern portion of the Site Pond. Final Status Survey of the survey unit was completed on October 5, 2015. To restore the outfall monitor in its approved location a small area of the survey unit was backfilled. The backfill of the area commenced on October 30, 2015. In accordance with Revision 3 to work package HDP-WP-ENG-802, Backfill & Site Restoration. The radiological survey indicated no impact to the area to be backfilled.

LSA 05-01

LSA 05-01 is a survey unit that contains the headwater (a spring) of the Site Pond which transitions into the Site Creek. A portion of LSA 05-01 also contains the supporting substructure for State Road P which is at an elevation above the survey unit. Remediation of this area of LSA 05-01 required the site to gain approval from the Missouri Department of Transportation (MoDOT). To meet the MoDOT requirements to remediate this survey unit the site coordinated with the NRC to be on-site to perform confirmatory survey and sampling coincidental to site remediation and FSS activities. The NRC performed confirmatory survey of LSA 05-01 from

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August 27 through August 29, 2013, reference NRC Inspection Report 07000036/2013003. The sloped area of LSA 05-01 that serves as the supporting substructure of State Road P was immediately backfilled upon completion of NRC confirmatory survey and sampling. Backfill of the remaining area of LSA 05-01 commenced on September 4, 2013. As LSA 05-01 is at a lower elevation then State Road P there is not a possibility of radioactive material flowing down into LSA 05-01.

LSA 05-02

LSA 05-02 is a survey unit in the former Barns Area and Red Room Roof Burial area. The survey unit is northeast of and adjacent to LSA 05-01. State Road P is north of and adjacent to LSA 05-02 and is at a higher elevation. LSA 05-03 is northeast of LSA 05-02 and is at a comparable elevation. The parking lot LSA 06-02 is east of LSA 05-02. Survey Unit LSA 05-04 is south of LSA 05-02 and is at a lower elevation. The site completed Final Status Survey of LSA 05-02 on August 20, 2013. The NRC performed confirmatory survey of LSA 05-02 from August 27 through August 29, 2013, reference NRC Inspection Report 07000036/2013003. As LSA 05-02 is at a lower elevation then State Road P there is not a possibility of radioactive material flowing down into LSA 05-01. As LSA 05-02 is at a lower elevation then State Road P there is not a possibility of radioactive material flowing down into LSA 05-03 were remediated at the same time there is not a possibility of radioactive material flowing down into LSA 05-02. Backfill of LSA 05-02 commenced on November 19, 2013.

LSA 05-03

LSA 05-03 is a survey unit in the former Barns Area. Survey unit LSA 05-02 is adjacent to and southwest of LSA 05-03. A portion of State Road P is directly northwest of LSA 05-03. LSA 06-01 and LSA 06-02 are north and east of LSA 05-03 and are portions of the paved parking lot. State Road P and a portion of LSA 06-01 are up gradient of LSA 05-03 The site completed approximately two thirds of the Final Status Survey of LSA 05-03 prior to the NRC confirmatory survey of LSA 05-03 from August 27 through August 29, 2013, reference NRC Inspection Report 07000036/2013003. Final Status Survey of the remaining area of LSA 05-03 was completed on October 11, 2013. As State Road P and portions of the parking lot and road are up gradient of LSA 05-03 there is no possibility of radioactive material flowing down into LSA 05-03. Backfill of LSA 05-03 commenced on November 19, 2013.

AREA 1

Area 1 is located in the north and central areas of the Burial Pit Area. It is comprised of survey units LSA 10-01, LSA 10-02, LSA 10-03, LSA 10-04 and LSA 10-12. Remediation was completed such that Area 1 could be place under isolation control at the same time. As these survey units comprised a large portion of the Burial Pit Area they contained excavations that resulted in the ground surface of Area 1 being lower than all adjacent areas except survey units LSA 10-05 and LSA 10-13. Final Status Survey field activities for these survey units were completed by March 18, 2015.

During the week of March 30, 2015, the NRC Inspector noted that potentially contaminated water could have been transferred from Area 3 (LSA 08-05) into Area 1 (LSA 10-03). LSA 08-05 which is adjacent to LSA 10-03 and at a higher elevation, had been remediated but

had not yet had Final Status field work conducted on it. Upon notification by the NRC Inspector of the potential of potentially contaminated water entering Area 1 the site performed a gamma walk over survey and confirmed there was no radiological impact.

The site graded the adjoining survey units of LSA 08-05, LSA 08-09 and LSA 08-14 and installed large area sumps (excavated depressions) in LSA 08-05 and LSA 08-14 to ensure any storm water in those survey units would not enter Areas 1 and 2.

The NRC performed confirmatory survey of LSA 10-01, LSA 10-02, LSA 10-03 and LSA 10-04 during the week of May 4, 2015, reference NRC Inspection Report 07000036/2015003.

In May 2015, the site and local area experienced a cumulative 8.62 inches and in June 2015 the site and local area experienced 5.22 inches of precipitation. Neither of which exceeded the Environmental Report 10 day, 25 year rain event of 9 inches. On May 11, 2015, between 1:35 am and 8:55 am the site and local area experienced 2.52 inches of precipitation. On June 19, 2015, the site and local area experienced 2.69 inches of steady rainfall over the 24 hour period. Subsequent inspections of isolation controls after these two rain events did not indicate any breach and that the sumps were collecting storm water as expected.

On June 29, 2015, the site commenced backfill of LSA 10-03, LSA 10-04 and LSA 10-12.

On July 2, 2015, the site and local area experienced approximately 1.9 inches of precipitation from 12:15 am until 12:55 am. Although this was an acute rain event there were no indications of isolation control breaches. Nevertheless, even though no indication of breach existed and backfill had commenced in Area 1 a post rain event survey was conducted in Area 3 (which would be the only plausible source of contamination) which contained the stormwater collection sump of July 10, 2015. No radiological impact was identified.

No other rain events occurred up until July 13, 2015, when backfill commenced in LSA 10-01 and LSA 10-02, the remaining survey units in Area 1.

AREA 2

The discussion of Area 2 follows sequentially the discussion for Area 1 contained above.

Area 2 is located in the central area of the Burial Pit Area. It is comprised of survey units LSA 10-13 and LSA 10-14. As described above LSA 10-13 and LSA 10-14 are adjacent to LSA 08-05, LSA 08-09 and LSA 08-14 that were graded to utilize the installed storm water collection sumps. Adjacent to Area 2 are the LSA 10-03, LSA 10-04, LSA 10-12, LSA 10-05 and LSA 10-07 all of which had backfill and would not present source of radioactive material. A small southern boundary of LSA 10-14 is shared with LSA 09-02 which is the railcar loading area. The isolation and control barriers consisted of concrete jersey barriers and a tiger dam for the boundary between LSA 10-14 and LSA 09-02.

Even though no indication of breach existed between Area 3 and Area 2 after the July 2, 2015, rain event a post rain event survey was conducted in Area 3 in LSA 08-14 sump collection/low spot area. This area also received any storm water from the rail car loading area that may have

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flowed out of the area. The survey was conducted on July 11, 2015, and no radiological impact was identified.

No other rain events occurred up until August 12, 2015, when backfill commenced in LSA 10-13 and LSA 10-14.

LSA 10-05

LSA 10-05 is in the center of the south Burial Pit Area. LSA 10-05 is adjacent to LSA 10-14 which is at a significantly lower elevation as well as the adjacent section of LSA 10-13 and LSA 10-12. LSA 10-06 and LSA 10-07 are the east and south boundary survey units and they are at a similar elevation which is the highest elevation in the area. This precluded any transfer of storm water into LSA 10-05.

Final Status Survey field activities for LSA 10-05 were completed on January 7, 2014. On January 22 and 23, 2014, the NRC performed confirmatory surveys and-sampling of survey unit LSA 10-05. Due to the fact that LSA 10-05 is adjacent to LSA 10-04 and could not be backfilled until backfill operations began in LSA 10-14, backfill of LSA 10-05 commenced on August 20, 2015.

As LSA 10-05 presented itself as the highest ground surface elevation it was not possible to transfer radioactive material up into the survey unit. As with all survey units it was monitored and inspected after significant rain events and indicated no radiological impact.

LSA 10-06

LSA 10-06 is in the south Burial Pit Area. LSA 10-06 is adjacent to LSA 10-10 to the north and is at a higher elevation. The remaining boundaries of LSA 10-06, a triangle shaped survey unit, are survey units LSA 10-05 and LSA 10-07. These units are all at a similar elevation which is the highest elevation in the area. This precluded any transfer of storm water into LSA 10-06.

Final Status Survey field activities for LSA 10-06 were completed on December 7, 2013. From December 17 through 19, 2013, the NRC performed confirmatory surveys and sampling of survey units LSA 10-06 and LSA 10-07. As this was winter there were no rain events that would transfer stormwater. Backfill of LSA 10-06 commenced on February 18, 2014.

LSA 10-07

Survey Unit LSA 10-07 is in the southern Burial Pit Area. LSA 10-07 is adjacent to LSA 10-06 and 10-07 in the Burial Pit Area that are at the same elevation as LSA 10-07. The south boundary of LSA 10-07 is adjacent to LSA 09-11 a Class 2 FSS survey unit. A small westerly boundary is adjacent to LSA 10-14 and LSA 09-02. The excavation in LSA 10-14 was one of the deepest during remediation. Therefore it was the recipient of storm water runoff from LSA 10-07. The elevation and position within the Burial Pit Area of LSA 10-07 precluded any transfer of radioactive material into the area.

Final Status Survey field activities for LSA 10-07 were completed on December 7, 2013. From December 17 through 19, 2013, the NRC performed confirmatory surveys and sampling of

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survey units LSA 10-06 and LSA 10-07. As this was winter there were no rain events that would transfer stormwater. Backfill of LSA 10-07 commenced on February 18, 2014.

LSA 10-08

LSA 10-08 is a relatively small survey unit that is an upstream portion of the Northeast Site Creek Diversion. As this area was required to remain in a configuration to ensure proper directional flow of storm water originating upstream of the site it required immediate remediation, Final Status Survey and backfill to the original grade. For this reason the site coordinated with the NRC to be on-site to perform confirmatory survey and sampling coincidental to site remediation and FSS activities. The NRC performed confirmatory survey of LSA 10-08 on August 2, 2013, reference NRC Inspection Report 07000036/2013003. The area was then immediately backfilled.

LSA 10-09

LSA 10-09 is a small circular survey unit in which the majority of the unit lays beneath LSA 10-06 and a very small portion beneath LSA 10-10 which is within the Burial Pit Area. The area LSA 10-09 is unique in that due to the necessity to remediate chemical contamination down to the phreatic zone it required remediation, Final Status Survey and backfill to be conducted in the same work evolution. This was due the ground water recharge experienced when remediating to the phreatic zone. For this reason as with LSA 10-08 the site coordinated with the NRC to be on-site to perform confirmatory survey and sampling coincidental to site remediation and FSS activities. The NRC performed confirmatory survey of LSA 10-09 was then immediately backfilled.

LSA 10-10

LSA 10-10 is a survey unit outside the northeast boundary of the Burial Pit Area. It was the down slope area (embankment) from the Burial Pit Area down to the former Northeast Site Creek. Although the elevation of LSA 10-10 relative to the adjacent survey unit LSA 10-06 was at times higher and at times lower due to remediation in LSA 10-06, it consistently remained at a higher elevation than LSA 11-01which was the creek bed. Final Status Survey field activities for LSA 10-10 were completed on December 7, 2013. Backfill of LSA 10-10 commenced on February 18, 2015, during the winter months.

LSA 10-11

LSA 10-11 is a small survey unit southeast of the Burial Pit Area. Remediation consisted of the removal of several inches of overburden. Final Status Survey field activities were completed during the first week of April 2015. As little removal of soil occurred in LSA 10-11 and due to its location, predominate storm water flow was away from the survey unit towards Outfall #006 the Northeast Site Creek. Also, radiological remediation of the Burial Pit Area was completed in November of 2014. Backfill of LSA 10-11 commenced on August 20, 2015.

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LSA 11-01

LSA 11-01 is a FSS Class 2 survey unit and is comprised of the former Northeast Site Creek bottoms area, the Northeast Site Creek diversion and a wooded area east of the Northeast Site Creek area. Final Status Survey field activities for LSA 11-01 were completed on October 15, 2015. The backfill operation for LSA 11-01 consisted only of enough backfill to complete the final grade elevation change from the previously backfilled Area 1 and LSA 10-10 and LSA 10-11 survey units down to the former creek bottom. As required by HDP-WP-ENG-802, Backfill & Site Restoration, an inspection and gamma walk over survey of the area was completed within 24 hours prior to backfill commencement. Backfill operations commenced on December 7, 2015.

Conclusion

Westinghouse considers the information provided for each survey unit to be sufficient to demonstrate that there has been no adverse radiological impact to the survey units that have undergone backfill operations that would pose an impact to the health and safety of the public.

