

September 23, 2010

Mr. E. Kurt Hackmann, Director  
Hematite Decommissioning Project  
Westinghouse Electric Company  
Nuclear Fuels  
3300 State Road P  
Festus, MO 63028

SUBJECT: NRC INSPECTION REPORT 070-00036/10-04(DNMS) – WESTINGHOUSE  
ELECTRIC COMPANY (HEMATITE)

Dear Mr. Hackmann:

On August 30 to September 2, 2010, the U.S. Nuclear Regulatory Commission (NRC) conducted an inspection at the Westinghouse Hematite decommissioning facility (Inspection Report No. 070-00036/10-04(DNMS), enclosed). The purpose of the inspection was to determine whether decommissioning activities were conducted safely and in accordance with NRC requirements. Specifically, the inspection focused on corrective actions, plant oversight committee activities, radioactive waste transportation activities, and emergency preparedness. Within these areas, the inspection consisted of a selected examination of procedures and representative records, and interviews with personnel. The enclosed report presents the results of this inspection, which were discussed with your staff during an exit meeting on September 2, 2010.

The inspection consisted of an examination of decommissioning activities at the Westinghouse Hematite decommissioning facility as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, and interviews with personnel.

Based on the results of the inspection, no violations were identified.

In accordance with Title 10 Code of Federal Regulations (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

E. Hackmann

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We will gladly discuss any questions you may have regarding this inspection. If you have questions, please feel free to contact Jeremy Tapp of my staff at (630) 829-9862.

Sincerely,

**/RA/**

Christine A. Lipa, Chief  
Materials Control, ISFSI  
and Decommissioning Branch

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

Enclosure:  
Inspection Report No. 070-00036/10-04(DNMS)

cc w/encl: Hematite Distribution Service List

E. Hackmann

-2-

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cc w/encl: Hematite Distribution Service List

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.:	070-00036
License No.:	SNM-00033
Report No.:	070-00036/10-04(DNMS)
Licensee:	Westinghouse Electric Company, LLC
Facility:	Former Hematite Fuel Manufacturing Facility
Location:	3300 State Road P Festus, Missouri
Dates:	August 30 to September 2, 2010
Inspectors:	Wayne Slawinski, Senior Health Physicist Jeremy Tapp, Health Physicist
Observer:	Paul Michalak, Branch Chief, Materials Decommissioning, FSME
Approved by:	Christine A. Lipa, Chief Materials Control, ISFSI, and Decommissioning Branch Division of Nuclear Materials Safety

Enclosure

## **EXECUTIVE SUMMARY**

### **Westinghouse Electric Company, LLC Hematite Fuel Manufacturing Facility NRC Inspection Report 070-00036/10-04(DNMS)**

This routine decommissioning inspection evaluated the Westinghouse Electric Company's (WEC) on-going decommissioning activities at WEC's Hematite facility, Festus, Missouri. The inspectors evaluated the licensee's recent corrective actions, plant oversight committee activities, radioactive waste transportation activities, and emergency preparedness.

#### **Management Organization and Controls**

The inspectors determined the licensee was adequately implementing its Corrective Action Process (CAP) and Project Oversight Committee (POC) in accordance with approved procedures. The corrective actions reviewed by the inspectors were commensurate with the safety significance in both scope and timeliness, and the POC discussed the pertinent issues for each functional area.

#### **Transportation Activities**

The inspectors determined that, overall, the licensee implemented a program that satisfied Department of Transportation (DOT) and U.S. Nuclear Regulatory Commission (NRC) transport regulations of Title 49 Code of Federal Regulations (CFR) Parts 171–178 and 10 CFR Parts 20 and 61. No safety significant findings or issues were identified. In particular, the inspectors determined that the licensee characterized and classified radioactive waste in a technically sound manner consistent with the requirements of 10 CFR 61.55 and 61.56, manifested waste shipments in accordance with Appendix G to 10 CFR Part 20, and trained hazmat workers involved in shipment activities as required by 49 CFR 172.702.

#### **Emergency Preparedness**

The inspectors concluded that the licensee's emergency plan was being maintained at a level commensurate with the hazards currently present and was in accordance with their license. Specifically, the inspectors determined the responsible licensee responders were trained on the emergency plan and the licensee maintained appropriate communication and engagement with the required off-site responders.

## Report Details

### **1.0 Management Organization and Controls (88005)**

#### **a. Inspection Scope**

The inspectors evaluated the licensee's compliance with NRC license conditions pertaining to the corrective action process and the POC. The inspectors interviewed the licensee's Quality Assurance Manager and Licensing Manager along with observing the weekly corrective action review meeting. The inspectors reviewed the licensee's POC quarterly and annual program review meeting minutes for the previous year, as well as Issue Reports, an Apparent Cause Analysis report, the report used to track corrective actions, and the schedule of audits and Quality Assurance surveillances performed by the licensee in 2010.

The documents reviewed are listed in the attached Documents Reviewed section.

#### **b. Observations and Findings**

The inspectors reviewed the licensee's overall CAP and noted improvements in self-identification and document closure timeliness compared to the program reviewed last in late 2008 and early 2009 as documented in Inspection Report No. 070-00036/08-02(DNMS) (ML092040700). The inspectors determined that the twelve Issue Reports (IRs) reviewed contained appropriate corrective actions commensurate with the safety significance in both scope and timeliness, and the process followed was in accordance with the approved site procedure, HDP-PR-QA-020, *Corrective Actions Process*. For those IRs that were closed, all corrective actions were completed before or significantly ahead of the required due date, or the due date was changed with a reasonable justification and completed in that new timeframe. Additionally, the inspectors determined a required Apparent Cause Analysis was performed in accordance with HDP-PR-QA-020 by the specified completion date with adequate corrective actions for the issue identified. The inspectors' observation of the corrective action review meeting determined it was held in accordance with the approved procedure and included the required site personnel.

The inspectors verified through a review of the POC meeting minutes since the third quarter of 2009 that it was being held and conducted in accordance with the approved site procedure, PO-GM-004, *Project Oversight Committee Charter*. The POC meeting was being held quarterly with the appropriate personnel with respect to the number attending and their positions. The pertinent issues for each functional area were discussed in the minutes. In addition, the annual report was completed as required.

#### **c. Conclusions**

The inspectors determined the licensee was adequately implementing its CAP and POC in accordance with approved procedures.

## **2.0 Inspection of Transportation Activities (86740)**

### **a. Inspection Scope**

The inspectors walked-down areas where radioactive waste was stored, processed and packaged including the new liquid radioactive waste (radwaste) treatment system (whose installation was ongoing). The walk-downs were performed to assess area radiological conditions and controls, and to determine if those areas were adequate to support transportation activities.

The inspectors reviewed the licensee's methods for waste concentration averaging to determine if representative samples of the waste products were provided for the purposes of waste classification, as required by 10 CFR 61.55. The inspectors reviewed the licensee's use of scaling factors to quantify difficult-to-measure radionuclides (alpha and beta emitting radionuclides) to determine if the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. Process building removable contamination (smear) sample results were reviewed to determine whether the locations sampled provided an adequate representation of the isotopic mix that existed and that analyses results were adequately applied to the waste classification program.

The inspectors reviewed the documentation of shipment packaging, radiation surveys, package labeling and marking, vehicle inspections and placarding, emergency instructions, determination of waste classification/isotopic identification, and licensee verification of shipment readiness for three radwaste shipments made in 2010. For each shipment, the inspectors determined if the requirements of 10 CFR Parts 20 and 61 and those of the DOT in 49 CFR 171-178 were met. Specifically, records were reviewed and several members of the licensee's staff involved in shipment activities were interviewed to determine if packages were labeled and marked properly, if package and transport vehicle surveys were performed with appropriate instrumentation, if survey results satisfied DOT requirements, and if the quantity and type of radionuclides in each shipment was determined accurately. The inspectors also determined whether shipment manifests were completed in accordance with DOT and NRC requirements and included the required emergency response information.

Individuals involved in shipment activities were interviewed by the inspectors to determine if they had adequate knowledge to accomplish shipment related tasks. Lesson plans and training records of operations technicians were reviewed for compliance with the hazardous material training requirements of 49 CFR 172.704.

Waste manifests/shipping papers, procedures, training records, and other transportation program related documents reviewed by the inspectors are provided in the attached Documents Reviewed section.

### **b. Observations and Findings**

No findings or issues of more than minor safety significance were identified.

In 2010 through July 2010, the licensee made two shipments of radwaste to a licensed waster processor and fourteen shipments to a licensed low-level radioactive waste disposal site. The waste consisted primarily of dry-active waste (DAW) from the former

process building in the form of contaminated metal, wood, plastic and soils. Low-level waste shipped to the burial site was appropriately classified as required by 10 CFR 61.55 using acceptable methodologies provided in NRC Branch Technical Positions, "Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification (May 1983)," "Waste Form Technical Position (January 1991)" and Information Notice 86-20, "Low-Level Radioactive Waste Scaling Factors - 10 CFR Part 61. Difficult to detect nuclides were inferred (scaled) from detectable nuclides in a technically sound manner based on composite samples collected from the process buildings.

Direct oversight and supervision of shipment packaging, loading, manifesting and other aspects of the transportation program were provided by the radwaste supervisor for all shipments completed in 2010 through July 2010. Transportation program related procedures were found to be adequate given the level of direct supervisory involvement; however, the inspectors noted and the licensee recognized that additional rigor and specificity was warranted in its procedures.

Appropriate transportation packages and vehicle surveys were completed by qualified radiation protection staff using appropriate, calibrated equipment to demonstrate compliance with the requirements of 49 CFR 173.441 and 173.443 prior to shipment departure. The inspectors determined that hazmat workers involved in radwaste shipment activities were trained or otherwise under the direct supervision of qualified individuals as required by 49 CFR 172.702.

The inspectors found that radwaste shipments were properly characterized, classified and manifested, that packages satisfied general design criteria and were properly labeled and monitored for radioactivity, and that loading/placarding of Exclusive Use shipments satisfied applicable requirements consistent with the licensee's procedures.

One exception to DOT requirements of minor safety significance was identified related to the informational content in the written instructions provided to the carrier of Exclusive Use shipments required by 49 CFR 173.403/443. Specifically, the written instructions provided to the initial carrier for maintenance of the exclusive use shipment controls did not include the (post use) vehicle survey requirements of 49 CFR 173.433.c. The licensee was aware of the exception and was in the process of modifying its written instruction form.

c. Conclusions

The inspectors determined that the licensee established and maintained an appropriate program to ensure radiological safety in the packaging and transport of licensed radioactive waste material consistent with the requirements of 49 CFR Parts 171-178 and 20 CFR Parts 20 and 61.

**3.0 Emergency Preparedness (88050)**

a. Inspection Scope

The inspectors evaluated the licensee's emergency plan, HDP-PO-EHS-003, "Emergency Action Plan," Revision 2, to verify that it was commensurate with the hazards that are currently present. The inspectors interviewed WEC safety and training



personnel regarding development, content, and training for the emergency plan, which was just recently revised and approved.

b. Observations and Findings

In accordance with 10 CFR Part 70 requirements for an emergency plan, WEC has shown through an evaluation of the potential hazards that a member of the public would not receive more than 1 Rontgen equivalent man (REM) effective dose or an intake of 2 milligrams of soluble uranium, and therefore, is not required to have an Emergency Plan. However, WEC does maintain an emergency plan, which is required by their NRC license. Since HDP-PO-EHS-003 was just recently revised, the inspectors reviewed it and determined it was commensurate with the hazards currently present. Specifically, the inspectors verified the licensee's response to a fire or explosion hazard was appropriate since it is the most limiting emergency scenario. The inspectors determined the action matrix in HDP-PO-EHS-003 adequately described the responsibilities for WEC employees in a logical fashion to respond to that type of emergency. It was also determined through interviews that the appropriate personnel received adequate training on their responsibilities and the licensee communicated regularly with the responsible off-site emergency responders. In addition, the licensee performs annual emergency drills with participation by local off-site responders.

c. Conclusions

The inspectors concluded the licensee's emergency plan is maintained at a level commensurate with the hazards currently present and in accordance with their license.

**4.0 Exit Meeting Summary**

The NRC inspectors presented inspection results to members of the facility management team following the on-site inspection on September 2, 2010. The licensee acknowledged the results presented.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### PARTIAL LIST OF PERSONS CONTACTED

#### Westinghouse Electric Company

E. Kurt Hackmann, Director, Hematite Decommissioning Project  
G. Rood, Radiation Safety Officer  
G. Uding, Manager, Quality Assurance  
M. Michelson, Manager, Licensing  
K. Harris, Environmental, Health & Safety Manager  
C. Cummin, Waste Management/Transportation Specialist  
D. Atchison, Training Supervisor

### INSPECTION PROCEDURES USED

IP 88005	Management Organization and Controls
IP 86740	Inspection of Transportation Activities
IP 88050	Emergency Preparedness

### ITEMS OPENED, CLOSED, AND DISCUSSED

#### Closed

None

#### Opened

None

#### Discussed

None

### LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CAP	Corrective Action Process
CFR	Code of Federal Regulations
DAW	dry-active waste
DNMS	Division of Nuclear Materials Safety
DOT	Department of Transportation
IR	Issue Report
NCS	Nuclear Criticality Safety
NCSA	Nuclear Criticality Safety Analysis
NRC	U.S. Nuclear Regulatory Commission
POC	Project Oversight Committee

radwaste	radioactive waste
PPE	personal protective equipment
WEC	Westinghouse Electric Company

## **DOCUMENTS REVIEWED**

Licensee documents used during the inspection are both identified in the Report Details above and in the list below.

Shipment Manifest and Characterization Information, Radiological Surveys and Associated Documentation for Shipment No. 0674-18-0006; Process Building Waste; Shipped March 22, 2010

Shipment Manifest and Characterization Information, Radiological Surveys and Associated Documentation for Shipment No. 0674-18-0014; Process Building Waste; Shipped March 26, 2010

Shipment Manifest and Characterization Information, Radiological Surveys and Associated Documentation for Shipment No. 0674-11-0157; Process Building Waste, Soils and Other DAW; Shipped July 30, 2010

Technical Basis Document, Hematite-HP-05-001; Estimation of Grams of U-235 in bags of Waste; Revision 0

Radiation Worker Training Lesson Plan; HDP-HP-LP-RWT Radiation Worker; Revision 2

General Employee Training Lesson Plan; HDP-HP-LP-GET Site Radiation Safety; Revision 0

10 CFR Part 61 Process Building Sample Analyses and Associated Scaling Factor Determination; dated various periods in 2003

PR-DO-019; Packaging of Radioactive Material; Revision 1

HDP-PR-WM-907; Radiological Surveys for Shipment and Receipt of Radioactive Material; Revision 0

PR-WM-001; Shipping and Receiving Radioactive Material; Revision 3

Issue Report 10-222-W003; Performed Radiological Survey Prior to Issuance of RWP; dated 8/10/2010

Issue Report 10-222-W002; Contamination Identified During Routine Survey; dated 8/10/2010

Issue Report 10-007-W007; Inadequate Integration of New NCSA [Nuclear Criticality Safety Analysis] and NCS [Nuclear Criticality Safety] Procedures; dated 1/7/2010

Issue Report 10-147-W003; Criticality Accident Basis for Emergency Planning Since 2005; dated 05/27/2010

Issue Report 10-104-W006; Phone System Disruption; dated 04/14/2010

Issue Report 10-153-W004; Unknown and Unsafe Removal of PPE [personal protective equipment] from PPE Storage Area; dated 06/02/2010

Issue Report 10-118-W007; Contractor Utilizing Hematite Equipment without Qualification; dated 04/28/2010

Issue Report 10-116-W001; Water Treatment Plant Tank T-5 Observed to have Elevated Radiation Levels; dated 04/26/2010

Issue Report 10-056-W007; Drain System Line Procured for Evaporation Pond Drain System Failed to Meet Engineering Specification; dated 02/25/2010

Issue Report 10-020-W001; Items suspected of being improperly removed from site; dated 01/20/2010

Issue Report 10-013-W002; Fire extinguishers not inspected monthly; dated 01/13/2010

Issue Report 09-322-W001; Effluent samples sent to unlicensed laboratory; dated 09/19/2009

HEM-10-MEMO-014; Annual Report to the Project Oversight Committee; Information Requiring Annual Review by the Project Oversight Committee; Semi-Annual ALARA Report to the Project Director; dated 02/19/2010

HEM-MM-09-18; Meeting Minutes for Fourth Quarter 2009 POC Meeting held December 2, 2009; dated 12/14/2009

HEM-MM-09-16; Meeting Minutes for Third Quarter 2009 POC Meeting held September 21, 2009; dated 09/23/2009

HEM-MM-10-5; Project Oversight Committee Meeting April 30, 2010 to Review WP-2009-030, Work Plan for Additional Building Remediation Prior to Building Demolition; dated 6/30/2010

HEM-MM-10-7; Meeting Minutes for First Quarter 2010 POC Meeting held March 24, 2010; dated 7/13/2010

## **Westinghouse - Hematite Service List**

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