March 13, 2006

Mr. Hank A. Sepp
Project Director, Decommissioning
Westinghouse Electric Company, LLC
Hematite Fuel Manufacturing Facility
3300 State Road P
Festus, MO 63028

SUBJECT: NRC INSPECTION REPORT 070-00036/05-003(DNMS) - WESTINGHOUSE ELECTRIC COMPANY, LLC (HEMATITE)

Dear Mr. Sepp:

On February 23, 2006, the NRC completed a team inspection at the Westinghouse Hematite, Missouri, decommissioning facility. The purpose of the inspection was to determine whether decommissioning activities were conducted safely and in accordance with your NRC license. Specifically, the inspection included NRC observation of activities regarding the survey of process equipment and ventilation systems, decontamination of wastes pending disposal, and activities to ensure the adequate oversight of the facilities following the temporary cessation of decommissioning activities. At the conclusion of each on-site inspection on November 30, 2005, January 10, 2006, and February 6, 2006, the NRC inspectors discussed the preliminary findings with you and members of your staff. On February 23, 2006, the inspectors completed an in-office review of procedures obtained during the inspection and conducted a telephone exit interview with Mr. Tracy Chance of your staff.

This inspection consisted of an examination of decommissioning activities at the Hematite 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, observations of activities in progress, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system

(ADAMS). The NRC's document system is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Sincerely,

/RA/

Jamnes L. Cameron, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

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

Enclosure:
Inspection Report 070-00036/05-003 (DNMS)

cc w/encl: A. J. Nardi, Supervisory Engineer Environment Health and Safety
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Missouri Department of Natural Resources
B. Moore, Missouri Department of Natural Resources

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.:	070-00036
License No.:	SNM-00033
Report No.:	070-00036/05-003 (DNMS)
Licensee:	Westinghouse Electric Company, LLC
Facility:	Hematite Former Fuel Manufacturing Facility
Location:	3300 State Road P Festus, Missouri
Dates:	November 28-30, 2005 (on-site inspection) January 10, 2006 (on-site inspection) February 6, 2006 (on-site inspection) February 23, 2006 (in-office review and telephone exit)
Inspectors:	Eugenio Bonano, Health Physicist, Decommissioning Branch (DB) Peter L. Lee, Ph.D., CHP, Health Physicist, DB George M. McCann, Senior Health Physicist, DB Samuel J. Mulay, Health Physicist, DB
Approved by:	Jamnes L. Cameron, Chief Decommissioning Branch, DNMS, RIII

EXECUTIVE SUMMARY
Westinghouse Electric Company, LLC
HEMATITE FUEL MANUFACTURING FACILITY
NRC Inspection Report 070-00036/05-003(DNMS)

This decommissioning team inspection focused on the licensee's performance related to building and equipment decontamination and remediation activities, and performance of verification surveys to quantify uranium content in ventilation systems and waste pending disposal. Additionally, since the NRC had not approved the licensee's proposed decommissioning plan or a building demolition amendment, Westinghouse informed the NRC that it intended to cease further decommissioning activities on January 21, 2006. Therefore, this inspection also examined the licensee's activities to ensure the adequate oversight of the facility until the licensee resumes decommissioning activities following NRC's approval of either the decommissioning plan or a license amendment authorizing building demolition.

The licensee initiated limited decommissioning in 2002. Prior to the temporary cessation of decommissioning activities, the licensee had completed the collection and disposal of residual uranium wastes, dismantlement and disposal or transfer of uranium contaminated equipment, and the transfer of salvageable uranium.

Management Organization and Controls

- The inspectors concluded that the licensee's oversight of decommissioning interference removal activities was adequate and complied with procedural and NRC requirements. Additionally, the inspectors determined that the licensee's oversight program to ensure control of the site during the temporary cessation of decommissioning activities was adequate. (Section 1.0)

Nuclear Criticality Safety

- The inspectors concluded that the licensee properly assessed uranium-235 content in materials and systems prior to dismantlement and remediation and that necessary nuclear criticality safety measures were implemented during these activities. The inspectors also determined that personnel performing remediation and dismantlement activities complied with license and approved procedural requirements. (Section 2.0)

Radioactive Waste Management, Storage, and Transportation

- The inspectors concluded that the licensee's activities to characterize, store, and survey wastes to be transported for disposal was in accordance with license requirements and procedures, and NRC regulations. (Section 3.0)

Report Details[1]

1.0 Management Organization and Controls (88005)

a. Inspection Scope

The inspectors toured the site, just prior to and after the plant shutdown, to verify the licensee's compliance with regulations concerning site security and storage of radioactive waste. The inspectors also conducted plant walk-downs and observed the condition of the facilities, interviewed the licensee's on-site management, Radiation Safety Officer, health physics staff and plant security personnel to ascertain staffing levels and activities to be maintained and implemented during the temporary cessation of decommissioning activities.

b. Observations and Findings

The licensee's personnel prepared items for recycling and low level radioactive waste disposal; and conducted maintenance, cleaning and prepping activities for the scheduled cessation of decommissioning activities. Workers prepared equipment and the interiors of the buildings for spraying a chemical surface fixating material, which was used to reduce the potential for airborne contamination.

The licensee secured the buildings after the cessation of decommissioning activities. The licensee retained the current health physics staff, plant site security, and the Radiation Safety Officer, who all remained present onsite. The plant security personnel implemented security checks and audits according to current operational procedural requirements. The licensee's health physic staff and Radiation Safety Officer implemented procedural and NRC regulatory requirements regarding the appropriate storage and control of radioactive materials.

c. Conclusions

The inspectors concluded that the licensee's oversight of decommissioning interference removal activities was adequate and complied with procedural and NRC requirements. Additionally, the inspectors determined that the licensee's oversight program to ensure control of the site during the temporary cessation of decommissioning activities was adequate.

2.0 Nuclear Criticality Safety (83822)

a. Inspection Scope

The inspectors conducted plant walk-downs and observed and evaluated work tasks and adherence to criticality safety precautions by personnel performing equipment decontamination and remediation activities. The inspectors interviewed managers, supervisors, health physics technicians and nuclear criticality safety engineers, before and during the building walk-downs. The inspectors reviewed selected aspects of the

[1]A list of acronyms used in the report is included at the end of the Report Details.

following licensee documents: Westinghouse Procedure MCP-HE-OP-205, "Radioactive Material Handling," Revision 5; Appendix A, Work Control Package No. 009-255-108, "Work Area: Ventilation Systems in all Buildings (260, 256, 255, 254, 253, 240, 240 Hepa Room)," Revision 0.2; and Radiation Work Permit Nos: 1) IR-05-038.0, "Aggressive work activities within the Restricted Area requiring respiratory protection;" and 2) IR-05-036.0, "Non-aggressive work activities within the Restricted Area."

The inspectors also observed licensee decommissioning personnel during the performance of radiological surveys to quantify uranium content in ventilation ducts and associated systems prior to their removal for disposal. The inspectors reviewed the procedures and evaluated the methodologies used to determine residual uranium-235 content in containers, process vessels, piping and duct work prior to dismantlement. The review included evaluation of the Canberra In-Situ Object Counting System (ISOCS) and micro-rem survey meter used by the licensee for uranium-235 mass content determinations. The inspectors reviewed selected aspects of the following licensee documents: NISYS Corporation procedures (NISYS-NCS-1180-TR004, TR011, TR014, TR016); Westinghouse Procedure LVI-HP-50, "Criticality Safety Related ^{235}U Mass Estimates," Revision 4; and Westinghouse Work Instruction WI-018, "Component U-235 Mass Estimates," Revision 0, dated January 5, 2005.

b. Observations and Findings

The licensee conducted fissile material operations in conjunction with the decommissioning of the plant and site. The most risk-significant of the decommissioning operations was the removal of uranium fabrication production equipment, and associated ventilation and duct work, which contained gross levels of low-enriched uranium contamination. During the removal activities, the licensee used the ISOCS and micro-rem survey meter measurements to determine residual uranium-235 content in the ventilation and associated systems to ensure that necessary nuclear criticality safety control measures were implemented. The information obtained from the ISOCS and micro-rem survey meter measurements was also used for characterization of uranium contaminated equipment and materials awaiting transportation and disposal.

The inspectors observed the licensee re-verify measurements made on a ventilation duct, which was in the process of being removed. The previous measurements indicated that the section of ducting in question contained 350 grams of residual uranium-235. The licensee determined the uranium quantity using both the micro-rem survey meter and the ISOCS. The inspectors noted that the licensees ISOCS measurements were in good agreement with the micro-rem survey meter measurements. The licensee's personnel were also knowledgeable regarding the ISOCS operation and procedures. The licensee's mass evaluations were in accordance with procedural requirements. Additionally, since the distribution of uranium-235 in the systems being dismantled and removed could not be exactly characterized, the licensee used the most conservative uranium-235 mass assessment, based on measurements of distribution.

The inspectors noted that the licensee personnel used required safety equipment, and followed specified remediation and decontamination operations sequentially as specified in approved work instructions. The personnel also labeled equipment and ventilation ducts and materials being removed for disposal according to approved criticality safety procedural requirements.

c. Conclusion

The inspectors concluded that the licensee properly assessed uranium-235 content in materials and systems prior to dismantlement and remediation and that necessary nuclear criticality safety measures were implemented during these activities. The inspectors also determined that personnel performing remediation and dismantlement activities complied with license and approved procedural requirements.

3.0 Radioactive Waste Management, Storage, and Transportation (88035) (84900) (86740)

a. Inspection Scope

The inspectors interviewed plant personnel responsible for surveys and preparation of uranium contaminated equipment and waste materials for shipment and disposal. The inspectors evaluated and observed activities by plant personnel to prepare and survey contaminated waste staged for shipment for disposal at approved sites. The inspectors performed radiological surveys of four low-level radioactive waste shipping containers, numbers: MHFU-001186 (placarded as LSA), MHFU-010043 (placarded as LSA-I), MHFU-001108 (placarded as LSA-I), and MHFU-001196 (no radioactive placarding required).

b. Observations and Findings

Supporting documentation for the shipment of the wastes was complete, and the results of NRC surveys were in agreement with the licensee's documented surveys.

Licensee personnel responsible for preparing and conducting radiological surveys on staged waste prior to loading into shipping containers were knowledgeable regarding procedural release criteria and demonstrated appropriate knowledge regarding survey techniques. The results of inspector surveys of uranium contaminated wastes staged for loading into shipping containers were similar to the licensee's findings.

c. Conclusions

The inspectors concluded that the licensee's activities to characterize, store, and survey wastes to be transported for disposal was in accordance with license requirements and procedures, and NRC regulations.

4.0 Closure of Violations, and Apparent Violations

a. (Closed) Violation (VIO) 07000036/05-002-01: Failure to report an NCS event per NRC Bulletin 91-01 to the NRC within 24 hours. During facility tours, the inspectors evaluated the licensee's corrective actions associated with the failure to report an NCS event in accordance with procedures developed in response to NRC Bulletin 91-01. The

licensee's actions included modifications to applicable procedures and additional instruction for staff responsible for evaluating issues that may be reportable in response to NRC Bulletin 91-01. The corrective actions were adequate to preclude similar violations. This issue is closed.

b. (Closed) Violation (VIO) 07000036/04-004-01: Failure to follow nuclear criticality safety requirements. The inspectors reviewed the licensee's reply to the Notice of Violation dated, March 28, 2005 (ML050900242) and the root cause analysis report titled, "Nuclear Criticality Safety - Hematite NRC Notice of Violation (NOV)," CAPs-RCA-04-340-W005, Revision 4, dated March 29, 2005. The inspectors verified that the corrective actions had been adequately implemented and did not identify any concerns with the corrective actions listed. This issue is closed.

c. (Closed) Apparent Violation APV 07000036/05-001-01: Failure to store two HEPA filter housings containing fissile material in accordance with approved NCS evaluation limits and controls. See 4.e below.

d. (Closed) Apparent Violation APV 07000036/05-001-02: Failure to incorporate NCS evaluation controls into procedures. See 4.e below.

e. (Closed) Apparent Violation APV 07000036/05-001-03: Failure to determine the mass of fissile materials placed in storage arrays.

These three apparent violations were documented as violations in a Notice of Violation enclosed with an August 25, 2005, NRC letter, ADAMS Accession No. ML052370436. The inspectors reviewed the licensee's September 22, 2005, (ADAMS Accession No. ML052930318) response to the NRC's Notice of Violation, and the licensee's root cause analysis report titled, "Failure to Implement Nuclear Criticality Safety Evaluation Controls and Failure to Complete Uranium Enrichment Prior to Approval of NCSEs," CAPs-RCA-05-007-W015 and 05-31-W006, Revision 4, dated March 22, 2005. The inspectors verified that the corrective actions had been adequately implemented and did not identify any concerns with the corrective actions listed. These three issues are closed.

5.0 Inspection Follow-up Items

a. (Closed) IFI 07000036/04-001-02: The licensee lacked information regarding the technical basis for types and quantities of isotopes likely to be encountered during decommissioning work being performed at the facility.

The inspectors reviewed the licensee's actions to address this issue regarding isotopic characterization information used for current decommissioning activities. The inspectors determined that the licensee had performed radiological characterization for types and quantities of isotopes to determine the distribution of isotopes at the facility, which included transuranics. All sample results were below release limits. The inspectors did not identify any concerns. This item is closed.

b. (Closed) IFI 07000036/04-001-03: A weakness was identified in the licensee's environmental monitoring program, which should be corrected prior to conducting operations involving complex decommissioning activities.

The inspectors determined that the licensee had addressed this issue by developing an environmental monitoring plan and specific sampling procedures. The inspectors reviewed PO-EM-001, "Environmental Monitoring Plan," Revision 1; PR-EM-007, "Vegetation Sampling," Revision 0; and PR-EM-004, "Soil Sampling," Revision 0. The inspectors did not identify any concerns. This item is closed.

c. (Closed) IFI 07000036/04-003-01: An employee was directed by supervision to perform a High Efficiency Particulate Air (HEPA) pre-filter replacement in a contaminated laboratory hood without the commensurate pre-job briefing. The issue was referred to the Operations Manager who recommended closure without conducting a causal analysis with which to develop appropriate corrective actions to prevent recurrence.

The inspectors reviewed Issue Report 04-196-W007, "Prevention of Excessive/ Unexpected Doses to Employees (ALARA)," which was developed and implemented to address this issue. The inspectors did not identify any concerns regarding the licensee's corrective actions to address this concern and determined that the licensee had taken adequate steps to prevent reoccurence. This item is closed.

6.0 Exit Meeting Summary

The NRC inspectors presented preliminary inspection findings to members of the facility management team following each onsite inspection. On February 23, 2006, the inspectors completed an in-office review of procedures obtained during the inspection and conducted a telephone exit interview with the radiation safety officer. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary in nature.

PARTIAL LIST OF PERSONS CONTACTED

Westinghouse Electric Company, LLC
H. Sepp, Decommissioning Director
J. Nardi, Chairman, Project Oversight Committee
S. Welch, Administrative Assistant
K. Hayes, Manager Environment, Safety and Health
C. Werner, Operations Support Manager
G. Vytlacil, Licensing/QA Policies Manager
T. Chance, RSO/Radiation Protection Manager
J. Nowak, Field Operations Manager
H. Anagnostopoulos, Health Physics Supervisor (SAIC)
N. Lambha, Senior Criticality Safety Engineer (NYSIS Corporation)
T. Mock, Waste Management/Transportation Manager
J. Bennett, Assistant Environmental Engineering Manager
H. Doughty, Site Operations Manager
M. Cushman, Criticality/MCA Supervisor

State of Missouri
B. Moore, Missouri Department of Natural Resources

INSPECTION PROCEDURES USED

IP 88005	Management Organization and Controls
IP 83822	Nuclear Criticality Safety
IP 88035	Radioactive Waste Management
IP 86740	Transportation Activities
IP 84900	Low Level Radioactive Waste Storage

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened	Type	Summary
None		
Closed		
VIO 07000036/05-002-01	VIO	Failure to report an NCS event per NRC Bulletin 91-01 to the NRC within 24 hours.
VIO 07000036/04-004-01	VIO	Failure to follow nuclear criticality safety requirements.
APV 07000036/05-001-01	APV	Failure to store two HEPA filter housings containing fissile material in accordance with approved NCS evaluation limits and controls.
APV 07000036/05-001-02	APV	Failure to incorporate NCS evaluation controls into procedures.
APV 07000036/05-001-03	APV	Failure to determine the mass of fissile materials placed in storage arrays.
IFI 07000036/04-001-02	IFI	Radiological Characterization.
IFI 07000036/04-001-03	IFI	Soil and Vegetation Characterization and Analysis.
IFI 07000036/04-003-01	IFI	Corrective Action Program.
Discussed		
None		

PARTIAL LIST OF DOCUMENTS REVIEWED

Westinghouse Electric Company: Chapters 1-8, of SNM-00033 Materials License

Westinghouse Electric Company: Procedure MCP-HE-OP-205, ”Radioactive Material Handling,” Revision 5;

Westinghouse Electric Company: Work Instruction, Appendix A, Work Control Package No. 009-255-108, “Work Area: Ventilation Systems in all Buildings (260, 256, 255, 254, 253, 240, 240 Hepa Room),” Revision 0.2;

Westinghouse Electric Company: Radiation Work Permit No. IR-05-038.0, “Aggressive work activities within the Restricted Area requiring respiratory protection;” and

Westinghouse Electric Company: Radiation Work Permit No. IR-05-036.0, “Non-aggressive work activities within the Restricted Area.”

Westinghouse Electric Company: Procedure, LVI-HP-50, “Criticality Safety Related ^{235}U Mass Estimates,” Revision 4;

Westinghouse Electric Company: Work Instruction, WI-018, “Component U-235 Mass Estimates,” Revision 0, dated January 5, 2005.”

NISYS Corporation procedures: NISYS-NCS-1180-TR004, TR011, TR014, TR016

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
APV	Apparent Violation
CAPs	Corrective action process
CFR	Code of Federal Regulations
DNMS	Division of Nuclear Material Safety
HEPA	High Efficiency Particulate Air
IFI	Inspection Followup Item
ISOCS	In-Situ Object Counting System
NCS	Nuclear Criticality Safety
NMSS	Office of Nuclear Material Safety and Safeguards
NRC	U.S. Nuclear Regulatory Commission
PDR	Public Document Room
SNM	Special Nuclear Material
VIO	Violation