ATTACHMENT 2

HEM-09-75-NP

Updated Westinghouse Hematite Decommissioning Funding Plan
(Westinghouse Non-Proprietary Class 3)

Westinghouse Electric Company LLC
Hematite Decommissioning Project
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USA

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
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Our ref: HEM-09-75-NP
Date: July 10, 2009

Subject: **Updated Westinghouse Hematite Decommissioning Funding Plan (Westinghouse Non-Proprietary Class 3) (License No. SNM-00033, Docket No. 070-00036)**

Westinghouse Electric Company LLC (WEC) hereby provides an updated Decommissioning Funding Plan for the Hematite Decommissioning Project (HDP) to terminate SNM-33 in accordance with 10CFR70.25(e). This latest cost estimate was re-baselined and developed in accordance with the latest governing requirements and by personnel with extensive knowledge of decommissioning techniques and strong expertise in assessing, planning, performing and verifying compliance with the radiological criteria for license termination (10 CFR 20 Subpart E).

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If you have any questions or comments regarding the details of this report, please contact me at (803) 647-2045.

Sincerely,

Gerard F. Couture,
Manager, Licensing
Hematite Decommissioning Project

Enclosure: DO-09-001, Hematite Decommissioning Funding Plan, (Westinghouse Non-Proprietary Class 3)

cc: J. J. Hayes, NRC/FSME/DWMEP/DURLD
C. A. Lipa, NRC Region III/DNMS/MCID
J. W. Smetanka, Westinghouse
W. G. Snell, NRC Region III/DNMS/DB
R. Tadesse, NRC/FSME/DWMEP/DURLD

ENCLOSURE

DO-09-001

Hematite Decommissioning Funding Plan
(Westinghouse Non-Proprietary Class 3)

Westinghouse

Hematite Decommissioning Project

HEMATITE
DECOMMISSIONING FUNDING PLAN

DO-09-001

July 9, 2009

Docket No. 70-36
License No. SNM-33

WESTINGHOUSE NON-PROPRIETARY CLASS 3

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APPENDIX A

LIST OF FIGURES

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ACRONYMS AND ABBREVIATIONS

ACM	Asbestos Containing Material
AOC	Areas of Concern
BSFR	Bulk Survey Free Release
Central Tract	Hematite Decommissioning Project site area bounded by State Road P to the north, the northeast site creek to the east, the Union Pacific railroad tracks to the south, and the site creek/pond to the west
cu. ft.	Cubic Foot
DCGL	Derived Concentration Guideline Level
DFP	Decommissioning Funding Plan
DP	Decommissioning Plan
FNMCP	Fundamental Nuclear Material Control Plan
FOG	Fuel, Oil, and Grease
FSS	Final Status Survey
ft.	Foot
HDP	Hematite Decommissioning Project
HEU	High Enriched Uranium
HSA	Historical Site Assessment
HVAC	Heating Ventilation and Air Conditioning
IH	Industrial Hygiene
Impacted Area	Area with a reasonable potential for residual radioactivity in excess of natural background or fallout levels
NRC	U.S. Nuclear Regulatory Commission
RAI	Request for Additional Information
SNM	Special Nuclear Material
sq. ft.	Square Foot
Tc-99	Technetium-99
T&D	Transport and Disposal
VOC	Volatile Organic Compound
WBS	Work Breakdown Structure
WEC	Westinghouse Electric Company LLC

1.0 INTRODUCTION

Westinghouse Electric Company LLC (WEC) hereby provides an updated Decommissioning Funding Plan (DFP) for the Hematite Decommissioning Project (HDP), to terminate License SNM -33 in accordance with 10 CFR 70.25(e) (Reference 2). This cost estimate was developed in accordance with the latest governing requirements and by personnel with extensive knowledge of decommissioning techniques and strong expertise in assessing, planning, performing and verifying compliance with the radiological criteria for license termination (10 CFR 20 Subpart E (Reference 6)). The HDP DFP was prepared based upon the guidance set forth in NUREG-1757, Consolidated Decommissioning Guidance, Volume 3, Financial Assurance, Recordkeeping, and Timeliness.

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The Hematite Site has been in the decommissioning process since notifying the NRC in April 2001 of its intention to cease principle activities. The details regarding the site contamination levels, release criteria, remediation methods, surveys and schedule are provided in the Hematite Decommissioning Plan and supporting documents which will be submitted for NRC review separately from this cost estimate and funding plan.

2.0 SITE SPECIFIC COST ESTIMATE

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2.1 FACILITY DESCRIPTION

The Hematite Decommissioning Project is a former fuel cycle facility that was dedicated to the manufacture of nuclear fuels. Prior to shutdown of the facility, processing and fabrication activities involving Special Nuclear Materials (SNM) were conducted within the controlled access area on the 228 acre site.

2.1.1 SITE LOCATION

The Hematite Decommissioning Project is located in Jefferson County, Missouri, approximately ¾ mile northeast of the unincorporated town of Hematite, Missouri, four miles southwest of the town of Festus, Missouri, and 35 miles south of the city of St. Louis, Missouri. The site address is:

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

2.1.2 LICENSE NUMBER AND PERIOD OF LICENSE

The Hematite Decommissioning Project U.S. NRC Material License is Special Nuclear Material License (SNM) No. SNM-33 (Reference 1) (NRC Docket 70-36). The expiration date for License No. SNM-33 was revised in Amendment No. 50, issued March 23, 2006, to specify that

the license is continued until decommissioning is complete and the NRC notifies WEC in writing that the license is terminated.

2.1.3 POSSESSION LIMITS

Special Nuclear Material License SNM-33 (Reference 1) authorizes WEC to possess quantities of Special, Source and Byproduct material that exceed those which allow the use of the prescribed amounts in 10 CFR Part 70.23(d) (Reference 2) and thus the financial assurance for decommissioning of the Hematite Site must be based upon a decommissioning funding plan. Refer to SNM-33 (Reference 1) for specific current limits.

2.1.4 AUTHORIZED ACTIVITIES

With the cessation of all nuclear fuel manufacturing operations on the site, authorized activities are limited to those associated with decommissioning in accordance with 10 CFR 70.38(d) (Reference 5). WEC is authorized to conduct the following activities at the Hematite Decommissioning Project:

1. Receive, possess, use, store and transfer Special Nuclear Material under Part 70 (Reference 2) of the Regulations of the Nuclear Regulatory Commission.

2. Receive, possess, use, store, and transfer Source Material under Part 40 (Reference 3) of the Regulations of the Nuclear Regulatory Commission.

3. Receive, possess, use, store, and transfer Byproduct Material under Part 30 (Reference 4) of the Regulations of the Nuclear Regulatory Commission.

With the License application affiliated with the Decommissioning Plan, the principal licensed activity will be to decommission the site in order to remove the facilities and site safely from service and to reduce residual radioactivity to allow termination of License No. SNM-33 (Reference 1) and release of the site for unrestricted use in accordance with NRC Regulations (10 CFR 20, Subpart E, "Radiological Criteria for License Termination" (Reference 6). These authorized activities are to be conducted on the Hematite site in accordance with the license and the approved Decommissioning Plan.

2.1.5 STATUS OF FACILITY BUILDINGS AND STRUCTURES

Table 2-1 of the Hematite Decommissioning Plan (DP) (Reference 7) provides descriptions of the current status of facility buildings and structures.

DP Chapter 2, "Facility Operating History" (Reference 7), describes in detail the removal of systems, components and wastes from inside facility buildings that was performed in two phases since the plant ceased operations in 2001. The first phase was conducted from 2001 to 2003 and involved uranium removal for reuse or disposal and general removal of stored waste materials. The second phase was conducted between 2003 and 2006 and included removal of building systems, equipment, and process materials in preparation for future building demolition. Demolition of buildings and structures has not been initiated; however, building demolition has been approved by the NRC as outlined in SNM-33 License Amendment No. 52 (Reference 1), subject to the limitations contained in NRC Confirmatory Action Letter to HDP dated December 15, 2008 (Reference 11) and subsequent addendums.

A detailed description of the facility buildings, rooms, and grounds is provided in the HDP Historical Site Assessment (Reference 8), provided as supporting documentation and submitted with the HDP Decommissioning Plan.

2.1.6 ON-SITE BURIAL

On-site burial was used as a disposal method for contaminated waste materials at Hematite from 1965 until 1970. This burial pit area is documented to contain 40 unlined pits east of the facility buildings. Additionally, available information indicates that on-site burials may have occurred as early as 1958 or 1959. Refer to the Historical Site Assessment (Reference 8) for additional information on the burial pits.

2.1.7 AREAS OF CONTAMINATION

Radiological characterizations of the environment and buildings at the Hematite site have been conducted several times, from the 1980's through the present. The Hematite Radiological Characterization Report (Reference 9) summarizes the characterization efforts and data from the most recent measurement, sampling and analysis survey campaigns.

Sample data from multiple characterization studies were combined and grouped into data sets for soil and water, to define specific geological areas which can be used for decommissioning planning and final status survey. The impacted area for final status survey covers the area North of the railroad, West of the Northeast Site Creek, South of State Highway P, and up to and including the Site pond and Site Creek (on the west of the property) south along the Site Creek, down to where the Site Creek joins Joachim Creek. (Reference 9).

2.1.8 RADIOACTIVE WASTE MANAGEMENT

Radioactive waste management will be performed in accordance with DP Chapter 12 (Reference 7). Elements of Chapter 12 include waste characterization, segregation, packaging and transportation. The general process of material identification and classification by determination of the degree of radiological and volatile organic compound (VOC) impact, selection of on-site treatment options, and determination of final disposition is generally described in DP Chapter 12.

2.2 ESTIMATED DECOMMISSIONING COSTS

The Hematite Decommissioning Funding Plan is based on a comprehensive cost estimate completed in June 2009. The estimate includes forecast project costs starting at the submission of the Decommissioning Funding Plan to the NRC through completion of the site remediation and NRC License termination. The cost estimate includes the 25% contingency required by the NRC.

2.2.1 COST ESTIMATE OVERVIEW

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During the NRC DP review and approval period, the Hematite project team will continue to perform preparatory work activities to support the remediation effort. [

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2.2.2 NUMBER AND DIMENSIONS OF FACILITY COMPONENTS

Table A.3.5 Numbers and Dimensions of Facility Components

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The following assumptions were made in calculating the site plot volumes shown in Table A.3.5.

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2.2.3 PLANNING AND PREPARATION (WORK DAYS)

Table A.3.6 Planning and Preparation (Work Days)

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2.2.4 DECONTAMINATION OR DISMANTLING OF RADIOACTIVE FACILITY COMPONENTS (WORK DAYS)

Table A.3.7 Decontamination or Dismantling of Radioactive Facility Components (Work Days)

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Technicium-99 contaminated limestone will be used as temporary fill for the void spaces that may exist in the concrete slabs that remain following the demolition. No imported fill material will be required to place the area into a safe configuration following demolition and removal of the facility components.][(d)(e)]

2.2.5 RESTORATION OF CONTAMINATED AREAS ON FACILITY GROUNDS (WORK DAYS)

Table A.3.8 Restoration of Contaminated Areas on Facility Grounds (Work Days)

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2.2.6 FINAL RADIATION SURVEY (WORK DAYS)

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2.2.7 SITE STABILIZATION AND LONG-TERM SURVEILLANCE (WORK DAYS)

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2.2.8 TOTAL WORK DAYS BY LABOR CATEGORY

Table A.3.11 Total Work Days by Labor Category

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2.2.9 WORKER UNIT COST SCHEDULE

Table A.3.12 Worker Unit Cost Schedule

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2.2.10 TOTAL LABOR COSTS BY MAJOR DECOMMISSIONING TASK

Table A.3.13 Total Labor Costs by Major Decommissioning Task

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2.2.11 PACKAGING, SHIPPING, AND DISPOSAL OF RADIOACTIVE WASTES (EXCLUDING LABOR COSTS)

Table A.3.14 Packaging, Shipping and Disposal of Radioactive Wastes (Excluding Labor Costs)

Waste Volumes

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Waste Packaging, Shipping, & Disposal

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EQUIPMENT/SUPPLY COSTS (EXCLUDING CONTAINERS)

Table A.3.15 Equipment/Supply Costs (Excluding Containers)

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2.2.13 LABORATORY COST

Table A.3.16 Laboratory Costs

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MISCELLANEOUS COSTS

Table A.3.17 Miscellaneous Costs

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2.2.15 TOTAL DECOMMISSIONING COSTS

Table A.3.18 Total Decommissioning Costs

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2.3 KEY ASSUMPTIONS

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3.0 FUNDING PLAN

3.1 FINANCIAL ASSURANCE

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3.2 DETERMINING THE MEANS FOR ADJUSTING THE COST ESTIMATE

WEC periodically updates the Hematite decommissioning cost estimate based on actual decommissioning progress and with an estimate of remaining costs based on the best available information about the remaining scope of the decommissioning effort and the current cost of labor and materials. The cost estimate updates reflect the most current knowledge with respect to staffing requirements and work/activity schedules, remaining scheduled decommissioning remediation efforts, and adjustments for current radioactive waste disposal volumes and rates. Pursuant to the requirements of 10 CFR 70.25(e) (Reference 2), updates to the cost estimate and associated funding levels are performed at intervals not exceeding three years.

4.0 REFERENCES

1. Special Nuclear Material License No. SNM -33, as amended.

2. Code of Federal Regulations, Title 10, Part 70, "Domestic Licensing of Special Nuclear Material."

3. Code of Federal Regulations, Title 10, Part 40, "Domestic Licensing of Source Material."

4. Code of Federal Regulations, Title 10, Part 30 "Rules of General Applicability to Domestic Licensing of Byproduct Material."

5. Code of Federal Regulations, Title 10, Part 70.38, "Expiration and termination of licenses and decommissioning of sites and separate buildings or outdoor areas."

6. Code of Federal Regulations, Title 10, Part 20, Subpart E, "Radiological Criteria for License Termination."

7. Hematite Decommissioning Project Document No. DO-08-004, *Hematite Decommissioning Plan.*

8. Hematite Decommissioning Project Document No. DO-08-005, *Historical Site Assessment.*

9. Hematite Decommissioning Project Document No. DO-08-003, *Hematite Radiological Characterization Report.*

10. Hematite Decommissioning Project Document No. PO-WM-001, *Hematite Waste Management and Transportation Plan*, PO-WM-001.

11. NRC Letter to WEC Hematite dated December 15, 2008, Confirmatory Action Letter

APPENDIX A

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A.3.5 Number and Dimensions of Facility Components

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A.3.6 Planning and Preparation (Work Days)

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A.3.7 Decontamination or Dismantling of Radioactive Facility Components (Work Days)

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A.3.8 Restoration of Contaminated Areas on Facility Grounds (Work Days)

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A.3.9 Final Radiation Survey (Work Days)

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A.3.10 Site Stabilization and Long Term Surveillance (Work Days)

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A.3.11 Total Work Days by Labor Category

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A.3.13 Total Labor Costs by Major Decommissioning Task

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Materials and Supplies	Unit	Quantity	Unit Cost	Total Equipment/ Supply Cost	
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