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Our ref: HEM-08-15
Date: February 29, 2008

U.S. Nuclear Regulatory Commission
Region III
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Subject: Hematite Effluent Monitoring Report for the Period from July 1, 2007, Through
December 31, 2007 (License No. SNM-33, Docket No. 70-36)

- Reference:
1. 10 CFR 70.59, "Effluent monitoring reporting requirements"
 2. Westinghouse Electric Company LLC (Westinghouse) Letter
No. EHS02/071, "Effluent Monitoring Report - January – July, 2002,"
dated August 28, 2002
 3. Nuclear Regulatory Commission (NRC) Letter Entitled "Westinghouse
Electric Company, LLC – Hematite, Amendment 42 (TAC No. L31556)
to Change the Scope of Licensed Activities to the Performance of
Decommissioning Activities," dated April 11, 2002

Dear Sirs:

This letter transmits to the NRC the Hematite Decommissioning Project (Hematite) effluent monitoring report containing the information specified in 10 CFR 70.59 (Reference 1). The report, provided as an attachment to this letter, covers the period from July 1, 2007, through December 31, 2007.

As discussed in recent telephone communications between Matt Featherston, Hematite Licensing Manager, and Mr. George (Mike) McCann and Mr. John (Jack) Hayes, NRC, a 10 CFR 70.59 effluent monitoring report has not been submitted for Hematite since August 28, 2002 (Reference 2). Based on interviews with former Hematite staff, it appears that the decision to no longer submit this report was the result of an interpretation of 10 CFR 70.59 as being no longer applicable to Hematite given the "decommissioning" status of the site.

Specifically, 10 CFR 70.59 requires an effluent monitoring report to be submitted by "each licensee authorized to possess and use special nuclear material for processing and fuel fabrication...." This requirement is supplementary to the requirements of 10 CFR 20 and license requirements relating to radiological releases. Since a license amendment approved in 2002

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(Reference 3) changed the scope of the Hematite license to authorize only those activities related to decommissioning (i.e., Hematite is no longer authorized to process or fabricate nuclear fuel), an interpretation of this regulatory requirement appears to have resulted in a determination that the requirement is not applicable to Hematite.

With discussions continuing between Hematite and NRC Staff on the applicability of this requirement to decommissioning facilities, Westinghouse has elected to submit the attached effluent monitoring report for the most recent 6-month reporting period. In addition, it is Westinghouse's present intention to submit effluent monitoring reports for the reporting periods between July 1, 2002, and June 30, 2007, to the NRC on or before April 30, 2008.

If you have any questions concerning this letter or the attached report, please contact Matt Featherston, Hematite Licensing Manager, at (314)810-3361.

Sincerely,



E. Kurt Hackmann
Director, Hematite Decommissioning Project

Attachment

cc: J. J. Hayes, NRC/FSME/DWMEP/DURLD
B. A. Watson, NRC/FSME/DWMEP/DURLD
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Hematite Decommissioning Project Effluent Monitoring Report
For the Period from July 1, 2007, Through December 31, 2007

I. Introduction

Pursuant to 10 CFR 70.59, this report summarizes the results of radiological effluent monitoring at the Hematite Decommissioning Project for the period from July 1, 2007, through December 31, 2007. This report includes the information specified in 10 CFR 70.59, which states in part:

The report must specify the quantity of each of the principal radionuclides released to unrestricted areas in liquid and gaseous effluents during the previous six months of operation, and such other information as the Commission may require to estimate maximum potential annual radiation doses to the public resulting from effluent releases. If quantities of radioactive materials released during the reporting periods are significantly above the licensee's design objectives previously reviewed as part of the licensing action, the report must cover this specifically.

II. Effluent Monitoring Report

A. Liquid Effluents

The quantity of radioactivity released to unrestricted areas in liquid effluents from July 1, 2007, through December 31, 2007, is summarized in Table 1 below. Based on conservative and reasonable assumptions described in the table notes, it is estimated that approximately 110g of uranium was released to unrestricted areas in liquid effluents during the reporting period.

As indicated in Table 1, quantities of radioactive materials (i.e., uranium) released during the reporting period are significantly below 10 CFR 20 limits. Based on the gross activity measurements, the average activity concentration in liquid effluents was approximately 10 percent of the annual effluent limit. The maximum activity concentration, measured at the Sewage Treatment Outfall, was approximately 22 percent of the annual effluent limit based on gross activity results. This data confirms that the maximum potential radiation dose to the public resulting from liquid effluent releases during the reporting period is well below the limits of 10 CFR 20.1301.

Table 1

Liquid Effluent Monitoring Summary Data

Reporting Period	Gross Alpha Radioactivity			Gross Beta Radioactivity		
	Average Conc. ($\mu\text{Ci/ml}$)	Average Fraction of Limit	Period Quantity Discharged (Ci)	Average Conc. ($\mu\text{Ci/ml}$)	Average Fraction of Limit	Period Quantity Discharged (Ci)
July - December, 2007						
Site Dam	5.5E-09	1.8E-02	2.1E-04	8.1E-09	1.6E-03	3.1E-04
Sewage Treat. Outfall	3.0E-08	1.0E-01	1.2E-05	5.2E-08	1.0E-02	2.1E-05
Total Quantity of Gross Alpha/Beta Discharged			2.2E-04 Ci			3.3E-04 Ci
Total Quantity of Uranium Discharged ^{Note 1}			110 g			
Maximum Concentration for Sampling Period	Sewage Treatment Outfall ($\mu\text{Ci/ml}$)		Site Dam ($\mu\text{Ci/ml}$)			
Gross Alpha (Dissolved)	6.0E-08	Max. Fraction of Limit	1.4E-08	Max. Fraction of Limit		
Gross Alpha (Suspended)	6.8E-09	2.2E-01 (alpha)	1.8E-09	5.1E-02 (alpha)		
Gross Beta (Dissolved)	1.3E-07	2.6E-02 (beta)	5.4E-09	1.3E-03 (beta)		
Gross Beta (Suspended)	2.5E-09		1.0E-09			
U-233/234	7.9E-08		Note 2			
U-235	2.6E-09		Note 2			
U-238	9.1E-09		Note 2			

Note 1: The estimated mass of discharged uranium is conservatively based on the total gross alpha activity, and an activity concentration assumption of 2 $\mu\text{Ci/g}$, which is representative of the enrichments present during this period.

Note 2: Consistent with the guidance provided in Regulatory Guide 4.16, isotopic analysis was not performed for samples collected from the Site Dam during these reporting periods in consideration of the operational knowledge regarding radionuclide composition; and the low individual sample concentrations which did not exceed ten percent of the annual effluent limit.

B. Gaseous (Airborne) Effluents

There was no measurable radioactivity released to unrestricted areas in airborne effluents from July 1, 2007, through December 31, 2007. Consistent with the current stage of facility decommissioning, there were no activities performed during the reporting period that had any reasonable potential for significant airborne effluents. It is noted that the only air effluent sampling requirements remaining in the Hematite Effluent Control and Monitoring Program are

for building exhaust stacks, and these stacks have been removed.¹ Thus, there was no air sampling required or performed during the reporting period as part of the Hematite Effluent Control and Monitoring Program.

Notwithstanding the above, the results of air sampling performed as part of the Hematite Environmental Monitoring Program confirm that the average air concentrations were within the statistical range of background levels. As indicated in Table 2 below, the highest average concentration measured in environmental air samples was less than the minimum detectable concentration for the analysis (established at 10 percent of the annual effluent limit). Based on these results and the fact that there were no activities performed during the reporting period that had any reasonable potential for significant airborne effluents, it is concluded that there was no measurable quantity of uranium released to unrestricted areas in airborne effluents during the reporting period.

Table 2

Environmental Monitoring Program Air Sampling Summary Data

Reporting Period	Average Concentration ($\mu\text{Ci/ml}$)	Average Fraction of Limit
July - December, 2007		
AS-1	2E-15	0.04
AS-2	1.5E-15	0.03
AS-3	1.2E-15	0.02
AS-4	1.3E-15	0.03
AS-5	9.7E-16	0.02

III. Conclusion

The effluent monitoring results summarized above confirm that quantities of radioactive materials (i.e., uranium) released from Hematite in liquid and gaseous effluents during the reporting period are significantly below 10 CFR 20 limits. Thus, the maximum potential radiation dose to the public resulting from liquid and gaseous effluent releases during the reporting period is well below the limits of 10 CFR 20.1301.

¹ By Westinghouse Electric Company LLC Letter No. HEM-08-8 dated February 15, 2008, Westinghouse submitted a license amendment request to the NRC. This request include changes to remove the requirements for exhaust stack air effluent sampling that no longer apply, and to add air effluent control and monitoring requirements that are considered conservatively appropriate for any potential air effluents resulting from remaining decommissioning activities. These include work control and discrete point effluent sampling requirements designed to ensure that once active decommissioning activities begin, the 10 CFR 20 effluent limits and site ALARA goals are satisfied.