



R2/E 74

Westinghouse Electric Company  
Nuclear Fuel  
Columbia Fuel Site  
P.O. Drawer R  
Columbia, South Carolina 29250  
USA

U. S. Nuclear Regulatory Commission  
ATTN: Regional Administrator, RII  
Region II  
61 Forsyth Street SW, Suite 23T85  
Atlanta, GA 30303

Direct tel: 803-647-1000

Our ref: LTR-RAC-05-026

February 24, 2005

Dear Sir:

Subject: SNM-1107/70-1151

The following report fulfills regulatory requirements as listed in 10CFR 40.65 and 10CFR 70.59 "Effluent Monitoring Requirements." For the six-month period July 1, 2004 through December 31, 2004, the following quantities of radionuclides were released to the unrestricted area by the Westinghouse Electric Company's Columbia, South Carolina Nuclear Fuel Plant:

- A. Gaseous 283.8 uCi Uranium (Analyzed as gross alpha)
- B. Liquid Effluent 19,696.0 uCi - U-234  
695.2 uCi - U-235  
2,780.6 uCi - U-238

Gaseous effluent results were obtained from point source gross alpha analysis of stack gas effluent, and the individual radionuclide composition is inferred from the calculated average enrichment (85.0% U-234, 3.0% U-235, and 12.0% U-238). A detailed summary report by stack is provided as Attachment "A."

Liquid effluent values were obtained by analysis of composite proportional samples prior to discharge to the Congaree River and basing the activity on the calculated average enrichment. All liquid discharges are pumped through a single discharge line to Congaree River. A detailed summary liquid discharge report is provided as Attachment "B."

Sincerely,

WESTINGHOUSE ELECTRIC COMPANY

Samuel G. McDonald, Manager  
Environment, Health and Safety

cc: U.S. NRC, (2)  
ATTN: William Gloerson  
61 Forsyth Street SW, Suite 23T85  
Atlanta, GA 30303

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U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

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**ATTACHMENT "B"**  
**LIQUID EFFLUENT DISCHARGES**  
**SECOND HALF 2004**

- A. Report Period: July 1, through December 31, 2004
- B. Sample Location: Composite Sampler at Waste Treatment, prior to discharge to Congaree River
- C. Total Liquid Flow: 7.839 E+07 liters
- D. Sample Collection: Effluent Composite Sampler

Radioisotope	Concentration		LLD, uCi/ml	Quantity Released, uCi
	uCi/ml	Error		
U-234	2.51 E-07	+/-0.76 E-08	6.00 E-10	19,696.0
U-235	0.89 E-08	+/-0.22 E-09	6.00 E-10	695.2
U-238	3.55 E-08	+/-0.25 E-09	6.00E-10	2,780.6
Total				23,171.8

Note:

1. Liquid effluent composites were analyzed by alpha spectroscopy, and significant quantities of U-236 were not detected using this method.

Attachment "A" GASEOUS EFFLUENT DISCHARGES - JULY 1 THROUGH DECEMBER 31, 2004

2004 SECOND HALF GASEOUS EFFLUENTS STACK IDENTIFICATION	QUANTITY RELEASED uCi URANIUM/6months	GROSS ALPHA (URANIUM) Conc., uCi/ml		ERROR	LLD, uCi/ml	Flow Rate Meters/sec	Derived Isotopic Concentration uCi/ml			DERIVED ISOTOPIC DISCHARGE, uCi		
							U234	U235	U238	U234	U235	U238
1 FURNACE EX LINE 1	3.86	8.85E-14	+/-	3.37E-14	8.00E-14	2.78	7.52E-14	2.66E-15	1.06E-14	3.28	0.12	0.48
2 FURNACE EX LINE 2	6.00	1.39E-13	+/-	4.22E-14	8.00E-14	2.78	1.18E-13	4.17E-15	1.67E-14	5.10	0.18	0.72
3 FURNACE EX LINE 3	5.04	1.16E-13	+/-	3.85E-14	8.00E-14	2.78	9.86E-14	3.48E-15	1.39E-14	4.28	0.15	0.60
4 FURNACE EX LINE 4	5.08	8.92E-14	+/-	3.38E-14	8.00E-14	2.78	7.58E-14	2.68E-15	1.07E-14	4.30	0.15	0.61
5 FURNACE EX LINE 5	9.77	2.23E-13	+/-	5.34E-14	8.00E-14	2.78	1.90E-13	6.69E-15	2.68E-14	8.30	0.29	1.17
6 NEW DECON RM	9.01	3.44E-13	+/-	1.07E-13	8.00E-14	1.64	2.92E-13	1.03E-14	4.13E-14	7.66	0.27	1.08
7 MET LAB EX	5.43	6.29E-13	+/-	1.44E-13	8.00E-14	0.56	5.35E-13	1.89E-14	7.55E-14	4.61	0.16	0.65
8 INCINER EX	0.00	2.62E-13	+/-	9.31E-14	8.00E-14	1.89	2.23E-13	7.86E-15	3.14E-14	0.00	0.00	0.00
9 SUPPL INC EX	0.00	7.14E-13	+/-	1.54E-13	8.00E-14	0.94	6.07E-13	2.14E-14	8.57E-14	0.00	0.00	0.00
10 CONVERS 1-A EX	18.67	2.86E-13	+/-	6.05E-14	8.00E-14	4.17	2.43E-13	8.58E-15	3.43E-14	15.87	0.56	2.24
11 CONVERSION 1-B	0.04	5.40E-13	+/-	8.32E-14	8.00E-14	4.17	4.59E-13	1.62E-14	6.48E-14	0.03	0.00	0.00
12 S-1030-A	15.14	5.82E-13	+/-	8.63E-14	8.00E-14	7.50	4.95E-13	1.75E-14	6.98E-14	12.87	0.45	1.82
13 S-1030-B	8.83	6.52E-13	+/-	9.14E-14	8.00E-14	7.50	5.54E-13	1.96E-14	7.82E-14	7.50	0.26	1.06
14 MAINT ENCL 4B	0.00	6.35E-13	+/-	9.02E-14	8.00E-14	3.89	5.40E-13	1.91E-14	7.62E-14	0.00	0.00	0.00
15 CONV ENCL EX 4C	11.24	1.86E-13	+/-	4.88E-14	8.00E-14	3.89	1.58E-13	5.58E-15	2.23E-14	9.56	0.34	1.35
16 CONV ENCL EX 4D	0.00	3.20E-13	+/-	6.40E-14	8.00E-14	3.89	2.23E-13	9.60E-15	3.84E-14	0.00	0.00	0.00
17 CONV EMERG EX 4E	1.48	5.15E-13	+/-	8.12E-14	8.00E-14	3.89	4.38E-13	1.55E-14	6.18E-14	1.26	0.04	0.18
18 CHEM LAB FILTERED EX	9.59	1.10E-13	+/-	3.75E-14	8.00E-14	5.56	9.35E-14	3.30E-15	1.32E-14	8.15	0.29	1.15
19 DECON ROOM EX	18.40	8.41E-13	+/-	1.04E-13	8.00E-14	1.42	7.15E-13	2.52E-14	1.01E-13	15.64	0.55	2.21
20 CAL COMBGAS LN 1	2.76	1.05E-12	+/-	1.16E-13	8.00E-14	0.16	8.93E-13	3.15E-14	1.26E-13	2.34	0.08	0.33
21 CAL COMBGAS LN 2	2.52	9.66E-13	+/-	1.04E-13	8.00E-14	0.16	8.21E-13	2.90E-14	1.16E-13	2.14	0.08	0.30
22 CAL COMBGAS LN 3	0.86	3.32E-13	+/-	6.52E-14	8.00E-14	0.16	2.82E-13	9.96E-15	3.98E-14	0.73	0.03	0.10
23 CAL COMBGAS LN 4	0.53	2.08E-13	+/-	5.16E-14	8.00E-14	0.16	1.77E-13	6.24E-15	2.50E-14	0.45	0.02	0.06
24 CAL COMBGAS LN 5	2.09	8.04E-13	+/-	1.01E-13	8.00E-14	0.16	6.83E-13	2.41E-14	9.65E-14	1.78	0.06	0.25
25 CHEM LAB # 2	5.86	6.43E-13	+/-	9.08E-14	8.00E-14	0.16	5.47E-13	1.93E-14	7.72E-14	4.98	0.18	0.70
26 CHEM LAB #3	0.53	1.05E-13	+/-	3.67E-14	8.00E-14	0.58	8.93E-14	3.15E-15	1.26E-14	0.45	0.02	0.06
27 HP LAB EX	1.04	1.13E-13	+/-	3.80E-14	8.00E-14	0.64	9.61E-14	3.39E-15	1.36E-14	0.88	0.03	0.12
28 DEV LAB 1 EX	1.86	1.24E-13	+/-	3.99E-14	8.00E-14	0.58	1.05E-13	3.72E-15	1.49E-14	1.58	0.06	0.22
29 DEV LAB 2 EX	2.43	1.62E-13	+/-	4.56E-14	8.00E-14	0.94	1.38E-13	4.86E-15	1.94E-14	2.06	0.07	0.29
30 PELLET COMBINED	7.67	1.03E-13	+/-	3.63E-14	8.00E-14	0.94	8.76E-14	3.09E-15	1.24E-14	6.52	0.23	0.92
31 SOLV X N	19.08	4.16E-13	+/-	7.30E-14	8.00E-14	4.72	3.54E-13	1.25E-14	4.99E-14	16.22	0.57	2.29
32 SOLV X S	1.89	2.67E-13	+/-	5.85E-14	8.00E-14	3.33	2.27E-13	8.01E-15	3.20E-14	1.60	0.06	0.23
33 SCRAP REC DRY	8.82	5.94E-13	+/-	8.72E-14	8.00E-14	3.33	5.05E-13	1.78E-14	7.13E-14	7.49	0.26	1.06
34 MAP COMBINED	0.00	4.02E-13	+/-	7.18E-14	8.00E-14	0.94	3.42E-13	1.21E-14	4.82E-14	0.00	0.00	0.00
35 ABF HOOD TORIT EX	3.83	1.71E-13	+/-	4.68E-14	8.00E-14	1.42	1.45E-13	5.13E-15	2.05E-14	3.25	0.11	0.46
36 IFBA EX	6.20	8.37E-13	+/-	1.04E-13	8.00E-14	4.72	7.11E-13	2.51E-14	1.00E-13	5.27	0.19	0.74
37 MAINT WELD EX	6.02	4.14E-13	+/-	7.28E-14	8.00E-14	0.94	3.52E-13	1.24E-14	4.97E-14	5.12	0.18	0.72
38 AC-3	6.01	1.01E-13	+/-	3.60E-14	8.00E-14	3.78	8.59E-14	3.03E-15	1.21E-14	5.11	0.18	0.72
39 BULK BLEND EX	4.52	1.04E-13	+/-	3.65E-14	8.00E-14	2.78	8.84E-14	3.12E-15	1.25E-14	3.84	0.14	0.54
40 AC-5	10.99	1.83E-13	+/-	4.84E-14	8.00E-14	3.78	1.56E-13	5.49E-15	2.20E-14	9.34	0.33	1.32
41 AC-8	4.84	8.15E-14	+/-	3.23E-14	8.00E-14	3.78	6.93E-14	2.45E-15	9.78E-15	4.11	0.15	0.58
42 AMMONIA FUME SC 1008-A	4.80	1.61E-13	+/-	4.54E-14	8.00E-14	1.89	1.37E-13	4.83E-15	1.93E-14	4.08	0.14	0.58
43 AMMONIA FUME SC 1008-B	0.00	4.23E-13	+/-	7.36E-14	8.00E-14	1.89	3.60E-13	1.27E-14	5.08E-14	0.00	0.00	0.00
44 AC-4	5.34	8.75E-14	+/-	3.35E-14	8.00E-14	3.89	7.44E-14	2.63E-15	1.05E-14	4.54	0.16	0.64
45 HOT OIL RM EX	25.50	4.18E-13	+/-	7.32E-14	8.00E-14	3.89	3.55E-13	1.25E-14	5.02E-14	21.68	0.77	3.06
46 ERBIA FURNACE EX	11.16	8.71E-14	+/-	3.34E-14	8.00E-14	8.17	7.40E-14	2.61E-15	1.05E-14	9.49	0.33	1.34
47 ERBIA SCRUBBER EX	5.46	8.03E-14	+/-	3.21E-14	8.00E-14	4.33	6.83E-14	2.41E-15	9.64E-15	4.64	0.16	0.66
48 ERBIA CHANGE ROOM	3.64	1.23E-13	+/-	3.97E-14	8.00E-14	1.90	1.05E-13	3.69E-15	1.48E-14	3.10	0.11	0.44

Total uCi 283.80

TOTAL DERIVED ISOTOPIC 241.2 8.5 34.1 Total 283.8