



Westinghouse Electric Company LLC
Nuclear Fuel
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USA

Document Control Desk, Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Direct tel: 803-647-1000

Subject: SNM-1107/70-1151
NRC Semi-annual Discharge Report
January – June 2010

Our ref: LTR-RAC-10-57

August 27, 2010

Dear Sir:

The following report fulfills regulatory requirements as listed in 10 CFR 40.65 and 10 CFR 70.59 "Effluent Monitoring Requirements." For the six-month period January 1, 2010 through June 30, 2010, 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	201.0 uCi Uranium (Analyzed as gross alpha)
B. Liquid Effluent	4369.6 uCi U-234
	154.2 uCi U-235
	616.9 uCi U-238
	8594.5 uCi Tc-99

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

Note that in this submittal, Tc-99 is newly being reported in liquid effluents, as it has been recognized that the radionuclide is a contributing factor to Columbia Fuel Fabrication Facility's emissions to the unrestricted area. This contribution is not a significant contributor to dose.

JE17

A benchmark test was completed during April 2010, for gaseous emissions of Tc-99. The following resulted from sampling of the five historically highest radionuclide-emitting stacks:

<u>Filter</u>	<u>uCi/mL</u>
Filter # 1	8.72E-17
Filter # 2	1.95E-17
Filter # 3	9.94E-18
Filter # 4	-2.69E-17
Filter # 5	-2.14E-16

These results are all below minimal detectable activity and have confirmed Westinghouse Columbia's assumption that Tc-99 is indeed released in liquid effluents only. Thus, for this submission and going forward, Westinghouse will be providing Tc-99 emissions only for liquid form.

Sincerely,

WESTINGHOUSE ELECTRIC COMPANY



Marc A. Rosser, Manager
Environment, Health and Safety

cc: USNRC, Region II
245 Peachtree Center Ave, NE, Suite 1200
Atlanta, Georgia 30303-1257

SEMI ANNUAL AVERAGE STACK EFFLUENT REPORT

Westinghouse Electric Company Nuclear Fuel, Columbia 01/01/2010 to 06/30/2010

SAMPLING STATION	LOCATION DESCRIPTION	GRS ALPHA CONCTR uCi/ml	QUANTITY RELEASED uCI URANIUM	ERROR	LLD. uCi/ml	FLOW RATE METERS/SEC	DERIVED ISOTOPIC CONCENTRATION uCi/ml			DERIVED ISOTOPIC DISCHARGE uCI		
							U234	U235	U238	U234	U235	U238
1201	FURNACE EX LINE 1	8.74E-14	3.78	+/-	8.00E-14	2.78	7.43E-14	2.62E-15	1.05E-14	3.21	0.11	0.45
1202	FURNACE EX LINE 2	8.81E-14	3.81	+/-	8.00E-14	2.78	7.49E-14	2.64E-15	1.06E-14	3.23	0.11	0.46
1203	FURNACE EX LINE 3	8.99E-14	3.88	+/-	8.00E-14	2.78	7.64E-14	2.70E-15	1.08E-14	3.3	0.12	0.47
1204	FURNACE EX LINE 4	8.27E-14	3.57	+/-	8.00E-14	2.78	7.03E-14	2.48E-15	9.93E-15	3.04	0.11	0.43
1205	FURNACE EX LINE 5	9.23E-14	3.99	+/-	8.00E-14	2.78	7.85E-14	2.77E-15	1.11E-14	3.39	0.12	0.48
1206	NEW DECON ROOM	8.78E-14	2.24	+/-	8.00E-14	1.64	7.46E-14	2.63E-15	1.05E-14	1.9	0.07	0.27
1207	MET LAB EXHAUST	1.83E-13	1.58	+/-	8.00E-14	0.56	1.55E-13	5.48E-15	2.19E-14	1.34	0.05	0.19
1208	INCINERATOR EX	5.62E-13	16.5	+/-	8.00E-14	1.89	4.77E-13	1.69E-14	6.74E-14	14.03	0.5	1.98
1209	SUPPL INCIN EX	1.53E-13	2.24	+/-	8.00E-14	0.94	1.30E-13	4.58E-15	1.83E-14	1.9	0.07	0.27
1210	CONV 1-A EX	5.07E-13	32.86	+/-	8.00E-14	4.17	4.31E-13	1.52E-14	6.08E-14	27.93	0.99	3.94
1211	CONV 1-B EX	3.89E-13	0	+/-	8.00E-14	4.17	3.31E-13	1.17E-14	4.67E-14	0	0	0
1212	S1030 A	9.49E-14	10.62	+/-	8.00E-14	7.56	8.07E-14	2.85E-15	1.14E-14	9.03	0.32	1.27
1213	S1030 B	3.55E-13	1.98	+/-	8.00E-14	7.56	3.02E-13	1.07E-14	4.26E-14	1.69	0.06	0.24
1216	MAINT ENCL EX 4-B	8.05E-13	0	+/-	8.00E-14	3.89	6.85E-13	2.42E-14	9.66E-14	0	0	0
1217	CONV ENCL EX 4-C	1.21E-13	7.3	+/-	8.00E-14	3.89	1.03E-13	3.62E-15	1.45E-14	6.2	0.22	0.88
1218	CONV ENCL EX 4-D	2.89E-13	0	+/-	8.00E-14	3.89	2.46E-13	8.68E-15	3.47E-14	0	0	0
1219	CONV EMERG EX 4E	3.49E-13	1	+/-	8.00E-14	3.89	2.97E-13	1.05E-14	4.19E-14	0.85	0.03	0.12
1220	CHEM LAB FILT EX	8.52E-14	7.36	+/-	8.00E-14	5.56	7.24E-14	2.56E-15	1.02E-14	6.26	0.22	0.88
1221	DECON ROOM EX	8.46E-14	1.86	+/-	8.00E-14	1.42	7.19E-14	2.54E-15	1.01E-14	1.58	0.06	0.22
1222	CALC COMB GAS LN 1	3.49E-13	0.89	+/-	8.00E-14	0.16	2.97E-13	1.05E-14	4.19E-14	0.76	0.03	0.11
1223	CALC COMB GAS LN 2	2.22E-13	0.57	+/-	8.00E-14	0.16	1.89E-13	6.66E-15	2.67E-14	0.48	0.02	0.07
1224	CALC COMB GAS LN 3	4.04E-13	1.03	+/-	8.00E-14	0.16	3.43E-13	1.21E-14	4.85E-14	0.88	0.03	0.12
1225	CALC COMB GAS LN 4	1.59E-13	0.41	+/-	8.00E-14	0.16	1.36E-13	4.78E-15	1.91E-14	0.35	0.01	0.05
1226	CALC COMB GAS LN 5	1.39E-13	0.35	+/-	8.00E-14	0.16	1.18E-13	4.18E-15	1.67E-14	0.3	0.01	0.04
1227	CHEM LAB EX #2	1.18E-13	1.07	+/-	8.00E-14	0.58	1.00E-13	3.54E-15	1.42E-14	0.91	0.03	0.13
1228	CHEM LAB EX #3	8.36E-14	0.42	+/-	8.00E-14	0.64	7.11E-14	2.51E-15	1.00E-14	0.35	0.01	0.05
1229	HP LAB EX	8.50E-14	0.77	+/-	8.00E-14	0.58	7.23E-14	2.55E-15	1.02E-14	0.66	0.02	0.09
1230	DEV LAB EX #1	2.39E-13	3.5	+/-	8.00E-14	0.94	2.03E-13	7.16E-15	2.86E-14	2.98	0.11	0.42
1231	DEV LAB EX #2	9.31E-14	1.37	+/-	8.00E-14	0.94	7.91E-14	2.79E-15	1.12E-14	1.16	0.04	0.16
1232	PELLET COMBINED EX	9.01E-14	6.62	+/-	8.00E-14	4.72	7.66E-14	2.70E-15	1.08E-14	5.62	0.2	0.79
1233	SOLVENT EXT N EX	8.39E-14	3.73	+/-	8.00E-14	3.33	7.14E-14	2.52E-15	1.01E-14	3.17	0.11	0.45
1234	SOLVENT EXT S EX	2.78E-13	2.06	+/-	8.00E-14	3.33	2.37E-13	8.35E-15	3.34E-14	1.75	0.06	0.25
1236	MAP COMBINED	2.32E-13	0	+/-	8.00E-14	2.78	1.97E-13	6.95E-15	2.78E-14	0	0	0
1237	ABF HOOD TORIT EX	9.60E-14	2.12	+/-	8.00E-14	1.42	8.16E-14	2.88E-15	1.15E-14	1.8	0.06	0.25
1238	IFBA EXHAUST	8.04E-14	5.91	+/-	8.00E-14	4.72	6.84E-14	2.41E-15	9.65E-15	5.02	0.18	0.71
1239	MAINT WELD EX	2.39E-13	3.5	+/-	8.00E-14	0.94	2.03E-13	7.16E-15	2.86E-14	2.98	0.11	0.42
1240	AC-3	8.01E-14	4.71	+/-	8.00E-14	3.78	6.81E-14	2.40E-15	9.62E-15	4	0.14	0.57
1241	PELLET LINE 6	8.13E-14	3.51	+/-	8.00E-14	2.78	6.91E-14	2.44E-15	9.76E-15	2.99	0.11	0.42
1242	AC-5	8.09E-14	4.75	+/-	8.00E-14	3.78	6.88E-14	2.43E-15	9.71E-15	4.04	0.14	0.57
1243	AC-8	8.54E-14	5.02	+/-	8.00E-14	3.78	7.26E-14	2.56E-15	1.02E-14	4.27	0.15	0.6
1244	AMMON FUME SCR 1008A	2.04E-13	5.98	+/-	8.00E-14	1.89	1.73E-13	6.11E-15	2.44E-14	5.08	0.18	0.72
1245	AMMON FUME SCR 1008B	1.47E-13	0	+/-	8.00E-14	1.89	1.25E-13	4.42E-15	1.77E-14	0	0	0
1246	AC-4	8.20E-14	4.96	+/-	8.00E-14	3.89	6.97E-14	2.46E-15	9.85E-15	4.22	0.15	0.6
1247	HOT OIL RM EX	1.73E-13	10.48	+/-	8.00E-14	3.89	1.47E-13	5.20E-15	2.08E-14	8.91	0.31	1.26
1248	ERBIA FURNACE EX	1.16E-13	14.72	+/-	8.00E-14	8.17	9.85E-14	3.48E-15	1.39E-14	12.51	0.44	1.77
1249	ERBIA SCRUBBER EX	8.00E-14	5.39	+/-	8.00E-14	4.33	6.80E-14	2.40E-15	9.61E-15	4.59	0.16	0.65
1250	ERBIA CHANGE ROOM	8.64E-14	2.55	+/-	8.00E-14	1.9	7.35E-14	2.59E-15	1.04E-14	2.17	0.08	0.31

"Attachment A"

			Total		
Total derived isotopic release	170.83	6.05	24.1	201.01	

ATTACHMENT "B"
LIQUID EFFLUENT DISCHARGES
FIRST HALF 2010

- A. Report Period: January 1, 2010 through June 30, 2010
 B. Sample Location: Composite Sampler at Waste Treatment, prior to discharge to Congaree River
 C. Total Liquid Flow: 6.512 E+07 liters
 D. Sample Collection: Effluent Composite Sampler

Radioisotope	Concentration		LLD, uCi/mL	Quantity Released, uCi
	uCi/mL	Error		
U-234	67.1 E-09	+/-4.39E-09	6.00 E-10	4369.6
U-235	2.37 E-09	+/-1.15 E-09	6.00 E-10	154.2
U-238	9.47 E-09	+/-1.84 E-09	6.00E-10	616.9
Tc-99	132 E-09	+/-55.7 E-09	6.00E-10	8594.5
Total				13735.2

Note:

- Liquid effluent composites were analyzed by alpha spectroscopy, and significant quantities of U-236 were not detected using this method.
- Tc-99 is not reported for gaseous effluents, as significant quantities of Tc-99 were not detected during benchmark testing of gaseous emissions.