



OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

2008 JAN -3 PM 1:41

October 11, 2007

Mr. Jim Kottan
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

SUBJECT: REPORT FOR ANALYSES OF THIRTEEN WATER SAMPLES FROM SET THREE FROM THE INDIAN POINT POWER STATION, BUCHANAN, NEW YORK
[INSPECTION REPORT NO. 050-247/2007-003] [RFTA NO. 07-004]

Dear Mr. Kottan:

The Oak Ridge Institute for Science and Education (ORISE) received set three, consisting of 13 water samples associated with the Indian Point Power Station on August 7, 2007. Sample analysis was initiated based on the information in RFTA 07-004. Sample identification and collection data for the water samples are presented in Table 1. Gamma spectroscopy, total radiostrontium, nickel-63, and tritium results are provided in Tables 2 - 5, respectively. The pertinent procedure references are provided in each specific table.

ORISE's Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

My contact information is listed below. You may also contact Wade Ivey at 865.576.9184 with any questions or comments.

Sincerely,

Dale Condra, Manager
Laboratory

RDC:WPI:km

Enclosures

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TABLE 1

SAMPLE IDENTIFICATIONS
AND COLLECTION DATA
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Collection Date	Collection Time
1748W0010	MW-62-182 (002)	7/26/2007	16:20
1748W0011	MW-62-37 (002)	7/26/2007	15:35
1748W0012	MW-62-18 (002)	7/26/2007	15:45
1748W0013	MW-62-53 (002)	7/26/2007	15:34
1748W0014	MW-62-71 (002)	7/26/2007	12:20
1748W0015	MW-62-92 (002)	7/26/2007	12:35
1748W0016	MW-62-138 (002)	7/26/2007	15:55
1748W0017	MW-60-35 (002)	7/27/2007	13:07
1748W0018	MW-60-55 (002)	7/27/2007	12:50
1748W0019	MW-60-72 (002)	7/27/2007	13:22
1748W0020	MW-60-135 (002)	7/27/2007	16:00
1748W0021	MW-60-154 (002)	7/27/2007	16:18
1748W0022	MW-60-176 (002)	7/27/2007	17:35

TABLE 2

CONCENTRATIONS OF SELECTED
GAMMA EMITTING RADIONUCLIDES
IN WATER SAMPLES
BY GAMMA SPECTROSCOPY CP1, REVISION 15
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1748W0010	MW-62-182 (002)	-0.3 ± 2.3 ^b , 3.8	1.6 ± 2.2, 4.0	1.1 ± 2.2, 3.8	-0.6 ± 3.9, 4.1
1748W0011	MW-62-37 (002)	-2.0 ± 2.5, 4.1	0.4 ± 2.4, 4.2	-0.1 ± 2.5, 4.2	1.5 ± 2.3, 4.0
1748W0012	MW-62-18 (002)	-1.6 ± 2.3, 3.7	0.3 ± 2.2, 3.8	-0.1 ± 2.4, 4.0	1.1 ± 2.0, 3.6
1748W0013	MW-62-53 (002)	-1.8 ± 3.1, 4.3	-0.7 ± 2.4, 4.0	0.2 ± 3.2, 4.6	0.3 ± 2.7, 4.0
1748W0014	MW-62-71 (002)	2.0 ± 2.6, 4.0	1.6 ± 2.1, 3.9	0.7 ± 2.1, 3.6	-0.6 ± 3.9, 4.1
1748W0015	MW-62-92 (002)	-2.1 ± 2.4, 3.9	2.5 ± 2.1, 3.9	0.7 ± 2.3, 4.0	-1.6 ± 4.0, 4.0
1748W0016	MW-62-138 (002)	0.2 ± 2.4, 4.1	0.3 ± 2.2, 3.9	1.7 ± 2.5, 4.2	-0.1 ± 2.2, 3.8
1748W0017	MW-60-35 (002)	0.9 ± 1.8, 3.1	0.2 ± 1.6, 2.9	0.9 ± 1.9, 3.0	0.7 ± 1.8, 2.7
1748W0018	MW-60-55 (002)	0.3 ± 2.7, 4.5	1.8 ± 2.5, 4.4	1.1 ± 4.0, 4.3	1.5 ± 3.7, 3.9
1748W0019	MW-60-72 (002)	-0.6 ± 2.8, 4.1	0.3 ± 2.2, 3.9	2.0 ± 2.6, 4.0	-1.2 ± 2.2, 3.6
1748W0020	MW-60-135 (002)	-0.1 ± 2.3, 3.9	2.5 ± 2.1, 3.9	1.4 ± 2.3, 4.0	-1.9 ± 4.0, 4.0
1748W0021	MW-60-154 (002)	0.0 ^c ± 1.9, 3.0	1.1 ± 1.9, 3.0	-0.6 ± 1.9, 3.0	0.5 ± 1.7, 2.9
1748W0022	MW-60-176 (002)	-0.3 ± 2.6, 4.4	-0.5 ± 2.4, 4.1	2.9 ± 2.5, 4.3	0.4 ± 2.3, 4.0

^aThe MDCs are after the comma.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.

^cZero values are due to rounding.

TABLE 3

CONCENTRATIONS OF TOTAL RADIOSTRONTIUM
IN WATER SAMPLES
BY LOW BACKGROUND BETA COUNTING
AP4, REVISION 14; CP3, REVISION 2
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations, TPUs, and MDCs ^a (pCi/L)		
1748W0010	MW-62-182 (002)	0.10	± 0.56 ^b	, 0.98
1748W0011	MW-62-37 (002)	-0.22	± 0.47	, 0.87
1748W0012	MW-62-18 (002)	1.59	± 0.59	, 0.87
1748W0013	MW-62-53 (002)	0.02	± 0.55	, 0.98
1748W0014	MW-62-71 (002)	0.58	± 0.54	, 0.89
1748W0015	MW-62-92 (002)	0.49	± 0.55	, 0.92
1748W0016	MW-62-138 (002)	1.21	± 0.64	, 1.00
1748W0017	MW-60-35 (002)	-0.34	± 0.48	, 0.90
1748W0018	MW-60-55 (002)	-0.07	± 0.50	, 0.89
1748W0019	MW-60-72 (002)	0.40	± 0.42	, 0.69
1748W0020	MW-60-135 (002)	1.11	± 0.46	, 0.68
1748W0021	MW-60-154 (002)	0.66	± 0.46	, 0.74
1748W0022	MW-60-176 (002)	0.46	± 0.42	, 0.69

^aThe MDCs are after the comma.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.

TABLE 4

CONCENTRATIONS OF NICKEL-63

IN WATER SAMPLES

BY LIQUID SCINTILLATION ANALYSIS

AP12, REVISION 6; CP4, REVISION 3

INDIAN POINT POWER STATION

BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations, TPU's, and MDCs ^a (pCi/L)
1748W0010	MW-62-182 (002)	0.6 ± 3.0 ^b , 5.1
1748W0011	MW-62-37 (002)	3.8 ± 3.0 , 5.1
1748W0012	MW-62-18 (002)	0.2 ± 3.0 , 5.1
1748W0013	MW-62-53 (002)	2.1 ± 3.0 , 5.1
1748W0014	MW-62-71 (002)	1.3 ± 3.0 , 5.1
1748W0015	MW-62-92 (002)	3.9 ± 3.0 , 5.1
1748W0016	MW-62-138 (002)	3.7 ± 3.0 , 5.1
1748W0017	MW-60-35 (002)	0.4 ± 3.0 , 5.1
1748W0018	MW-60-55 (002)	-2.2 ± 2.9 , 5.0
1748W0019	MW-60-72 (002)	-0.7 ± 2.9 , 5.0
1748W0020	MW-60-135 (002)	2.7 ± 3.0 , 5.0
1748W0021	MW-60-154 (002)	-0.9 ± 2.9 , 5.0
1748W0022	MW-60-176 (002)	1.4 ± 2.9 , 5.0

^aThe MDCs are after the comma.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.

TABLE 5

CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP2, REVISION 16; CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations, TPU's, and MDCs ^a (pCi/L)
1748W0010	MW-62-182 (002)	460 ± 160 ^b , 250
1748W0011	MW-62-37 (002)	360 ± 160 , 250
1748W0012	MW-62-18 (002)	510 ± 170 , 250
1748W0013	MW-62-53 (002)	330 ± 160 , 250
1748W0014	MW-62-71 (002)	300 ± 160 , 250
1748W0015	MW-62-92 (002)	390 ± 160 , 250
1748W0016	MW-62-138 (002)	660 ± 170 , 250
1748W0017	MW-60-35 (002)	210 ± 150 , 250
1748W0018	MW-60-55 (002)	230 ± 150 , 250
1748W0019	MW-60-72 (002)	280 ± 150 , 250
1748W0020	MW-60-135 (002)	260 ± 150 , 250
1748W0021	MW-60-154 (002)	510 ± 170 , 250
1748W0022	MW-60-176 (002)	910 ± 180 , 250

^aThe MDCs are after the comma.

^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.