

May 3, 2007

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

SUBJECT: INTERIM REPORT FOR COMPLETED ANALYSES FOR SAMPLES FROM SET TWENTY-ONE, FROM THE INDIAN POINT POWER STATION, BUCHANAN, NEW YORK [INSPECTION REPORT NO. 050-247/2006-007] [RFTA NO. 06-001]

Dear Mr. Kottan:

The Oak Ridge Institute for Science and Education (ORISE) received set 21, consisting of one water sample, associated with the Indian Point Power Station on February 7, 2007. Sample analysis was initiated based on your previous direction for handling samples from this licensee. Sample identification and collection data for the samples addressed in this report are presented in Table 1. Gamma spectroscopy, the hard-to-detect betas (iron-55, nickel-63, and tritium), technetium-99, total radiostrontium, alpha spectroscopy, plutonium-241, and carbon-14 data are provided in Tables 2 through 8, 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. Additional reports will follow after the completion of the requested analyses.

ORISE has removed the Ni-59 data due to problems with the calculation associated with the concentration of this radionuclide. ORISE is discontinuing the reporting of Ni-59 data until this problem can be resolved.

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:bf

Enclosures

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TABLE 1

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

ORISE Sample ID	NRC Region I Sample ID	Collection Date	Collection Time
1697W0134 ^a	U1-CSS-(001)	1/30/2007	11:45
1697M0083 ^b	U1-CSS-(001)	1/30/2007	11:45

^aThe W in the ORISE sample identification represents a water matrix.

^bThe M in the ORISE sample identification represents the filtered fraction of the preceding water sample.

TABLE 2

**CONCENTRATIONS OF SELECTED
GAMMA EMITTING RADIONUCLIDES
IN A WATER SAMPLE
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
1697W0134	U1-CSS-(001)	1.4 ± 3.2 ^b , 5.5	0.1 ± 3.0, 5.1
		Cs-134	Cs-137
		0.0 ^c ± 3.0, 5.0	-4.1 ± 5.7, 5.6

^aThe MDCs are after the comma.

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

^cZero value is due to rounding.

TABLE 3

**CONCENTRATIONS OF HARD-TO-DETECT
BETA EMITTING RADIONUCLIDES
IN A WATER SAMPLE
BY LIQUID SCINTILLATION ANALYSIS CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a (pCi/L)		
		Fe-55 ^b	Ni-63 ^c	H-3 ^d
1697W0134	U1-CSS-(001)	-10 ± 45 ^e , 78	5.9 ± 7.5 , 12.6	1,980 ± 330 , 390

^aThe MDCs for each radionuclide are after the comma.

^bFe-55 analyzed using procedure AP13, Revision 4.

^cNi-63 analyzed using procedure AP12, Revision 5.

^dH-3 analyzed using procedure AP2, Revision 15.

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

TABLE 4

CONCENTRATIONS OF TECHNETIUM-99 (Tc-99)
IN A WATER SAMPLE
BY LIQUID SCINTILLATION ANALYSIS
AP5, REVISION 16; CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Tc-99 Concentrations ^a (pCi/L)
1697W0134	U1-CSS-(001)	-1 ± 15 ^b , 27

^aThe MDC is after the comma.

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

TABLE 5

CONCENTRATIONS OF TOTAL RADIOSTRONTIUM
IN A WATER SAMPLE
BY LOW BACKGROUND BETA COUNTING
AP4, REVISION 13; 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)
1697W0134	U1-CSS-(001)	24.8 ± 4.3 ^b , 4.8

^aThe MDC is after the comma.

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

TABLE 6

**CONCENTRATIONS OF SELECTED
ALPHA EMITTING RADIONUCLIDES
IN A WATER SAMPLE
AP11, REVISION 3; CP2, REVISION 12
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a (pCi/g of sediment in 100 mL or pCi/L for water)			
		Am-241	Cm-242	Cm-243/244	Np-237
1697W0134	U1-CSS-(001)	-0.05 ± 0.21 ^b , 0.41	0.00 ^c ± 0.09, 0.20	-0.20 ± 0.17, 0.40	-0.19 ± 0.22, 0.49
		Pu-238	Pu-239/240	U-234	U-238
		0.02 ± 0.14, 0.29	0.05 ± 0.09, 0.18	2.02 ± 0.41, 0.06	0.98 ± 0.28, 0.06
1697M0083	U1-CSS-(001)	Am-241	Cm-242	Cm-243/244	Np-237
		0.00 ± 0.02, 0.04	0.00 ± 0.01, 0.02	0.00 ± 0.02, 0.03	0.00 ± 0.01, 0.03
		Pu-238	Pu-239/240	U-234	U-238
		0.01 ± 0.02, 0.02	0.01 ± 0.01, 0.02	0.01 ± 0.01, 0.02	0.01 ± 0.01, 0.01

^aThe MDCs are after the comma.

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

^cZero value is due to rounding.

TABLE 7

CONCENTRATIONS OF PLUTONIUM-241
 IN A WATER SAMPLE
 BY LIQUID SCINTILLATION ANALYSIS
 AP10, REVISION 2; CP4, REVISION 3
 INDIAN POINT POWER STATION
 BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a (pCi/g of sediment in 100 mL or pCi/L for water)
1697W0134	U1-CSS-(001)	-11 ± 32 ^b , 55
1697M0083	U1-CSS-(001)	2.4 ± 3.4 , 5.7

^aThe MDC is after the comma.

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

TABLE 8

CONCENTRATIONS OF CARBON-14
IN A WATER SAMPLE
BY LIQUID SCINTILLATION ANALYSIS
AP9, REVISION 3; CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK

ORISE Sample ID	NRC Region I Sample ID	Radionuclide Concentrations, TPUs, and MDCs ^a (pCi/L)
1697W0134	U1-CSS-(001)	-1.0 ± 9.1 ^b , 15.5

^aThe MDC is after the comma.

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