

October 18, 2007

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

**SUBJECT: REPORT FOR ANALYSES OF SEVEN WATER SAMPLES FROM SET FIVE 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 five, consisting of seven water samples associated with the Indian Point Power Station on September 6, 2007. Sample analysis was initiated based on the information in RFTA 07-004. Sample identification and collection data for the samples addressed in this report are presented in Table 1. Gamma spectroscopy, total radiocesium, nickel-63, and tritium data 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:ar

Enclosures

c: T. Carter, FSME/DWMEP/DD/SP T-8F5  
E. Knox-Davin, NRC/FSME/TWFN 8A23  
S Roberts, ORISE  
File 1748

J. White, NRC Region I  
E. Abelquist, ORISE  
J. Commiskey, NRC Region I

Distribution approval and concurrence :	Initials
Technical Management Team Member	JSR
Quality Manager	CTP

Voice: 865.241.3242

Fax: 865.241.3248

E-mail: Dale.Condra @orau.org

**TABLE 1**

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

<b>ORISE Sample ID</b>	<b>NRC Region I Sample ID</b>	<b>Collection Date</b>	<b>Collection Time</b>
1748W0027	MW-67-39-(001)	8/31/2007	12:05
1748W0028	MW-67-105-(001)	8/31/2007	12:35
1748W0029	MW-67-173-(001)	8/31/2007	13:04
1748W0030	MW-67-219-(001)	8/31/2007	13:43
1748W0031	MW-67-276-(001)	8/31/2007	12:20
1748W0032	MW-67-323-(001)	8/31/2007	13:20
1748W0033	MW-67-340-(001)	8/31/2007	12:54

**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 <sup>a</sup> (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1748W0027	MW-67-39-(001)	-1.1 ± 2.3 <sup>b</sup> , 3.7	2.3 ± 2.2 , 4.1	1.7 ± 2.0 , 3.6	-4.6 ± 4.0 , 3.9
1748W0028	MW-67-105-(001)	-0.2 ± 2.3 , 3.9	1.9 ± 4.8 , 4.0	0.5 ± 2.3 , 3.9	-1.5 ± 2.0 , 3.3
1748W0029	MW-67-173-(001)	0.0 <sup>c</sup> ± 2.0 , 3.0	1.8 ± 1.6 , 3.0	-0.3 ± 2.0 , 3.0	1.7 ± 1.6 , 2.9
1748W0030	MW-67-219-(001)	-0.7 ± 2.5 , 4.1	-0.9 ± 2.3 , 4.0	-2.1 ± 2.5 , 4.0	1.6 ± 2.2 , 3.8
1748W0031	MW-67-276-(001)	-1.5 ± 2.4 , 3.8	-0.1 ± 2.2 , 3.8	-0.4 ± 2.1 , 3.5	-4.3 ± 3.9 , 3.9
1748W0032	MW-67-323-(001)	1.4 ± 2.8 , 4.2	0.6 ± 2.7 , 4.1	0.1 ± 2.4 , 4.1	0.8 ± 2.0 , 3.6
1748W0033	MW-67-340-(001)	2.2 ± 3.1 , 4.6	-0.7 ± 2.9 , 4.2	1.5 ± 3.0 , 4.4	1.3 ± 2.3 , 4.0

<sup>a</sup>The MDCs are after the comma.

<sup>b</sup>Uncertainties represent the 95% confidence level, based on total propagated uncertainties.

<sup>c</sup>Zero value is 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**

<b>ORISE Sample ID</b>	<b>NRC Region I Sample ID</b>	<b>Radionuclide Concentrations, TPU's, and MDCs<sup>a</sup> (pCi/L)</b>
1748W0027	MW-67-39-(001)	19.0 ± 1.3 <sup>b</sup> , 0.8
1748W0028	MW-67-105-(001)	1.76 ± 0.54 , 0.75
1748W0029	MW-67-173-(001)	1.21 ± 0.52 , 0.78
1748W0030	MW-67-219-(001)	0.49 ± 0.52 , 0.87
1748W0031	MW-67-276-(001)	0.85 ± 0.48 , 0.76
1748W0032	MW-67-323-(001)	0.21 ± 0.45 , 0.78
1748W0033	MW-67-340-(001)	-0.07 ± 0.43 , 0.78

<sup>a</sup>The MDCs are after the comma.

<sup>b</sup>Uncertainties 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, TPUs, and MDCs <sup>a</sup> (pCi/L)
1748W0027	MW-67-39-(001)	6.0 ± 3.0 <sup>b</sup> , 5.0
1748W0028	MW-67-105-(001)	4.2 ± 3.0 , 5.0
1748W0029	MW-67-173-(001)	2.9 ± 3.0 , 5.0
1748W0030	MW-67-219-(001)	5.1 ± 3.0 , 5.0
1748W0031	MW-67-276-(001)	5.6 ± 3.0 , 5.0
1748W0032	MW-67-323-(001)	3.9 ± 3.0 , 5.0
1748W0033	MW-67-340-(001)	3.7 ± 3.0 , 5.0

<sup>a</sup>The MDCs are after the comma.

<sup>b</sup>Uncertainties 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, TPUs, and MDCs <sup>a</sup> (pCi/L)			
1748W0027	MW-67-39-(001)	6,320	±	420 <sup>b</sup>	, 290
1748W0028	MW-67-105-(001)	2,510	±	270	, 290
1748W0029	MW-67-173-(001)	1,200	±	210	, 290
1748W0030	MW-67-219-(001)	1,020	±	210	, 290
1748W0031	MW-67-276-(001)	810	±	200	, 290
1748W0032	MW-67-323-(001)	220	±	170	, 290
1748W0033	MW-67-340-(001)	310	±	180	, 290

<sup>a</sup>The MDCs are after the comma.

<sup>b</sup>Uncertainties represent the 95% confidence level, based on total propagated uncertainties.