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REGION 1

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

2006 FEB 16 PM 1:26

February 13, 2006

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

**SUBJECT: ADDENDUM TO ANALYSIS OF THIRD SET OF WATER SAMPLES FROM
THE INDIAN POINT POWER STATION, BUCHANAN, NEW YORK
[INSPECTION NO. 050-247/2005-011] [RFTA NO. 06-001]**

Dear Mr. Kottan:

The Oak Ridge Institute for Science and Education (ORISE) received four water samples on December 28, 2005 from the Indian Point Power Station in Buchanan, New York. The original results were sent to you in a letter report dated January 13, 2006. In an e-mail on January 20, 2006, you requested that sample 1677W0014 be reanalyzed for radiostrontium. Two 0.1 Liter (L) aliquots of the sample were analyzed for radiostrontium (Procedures AP4, Revision 13; CP3, Revision 2). The concentrations of the two aliquots were 0.2 ± 1.2 pCi/L and 0.2 ± 1.1 pCi/L, respectively. The minimum detectable concentrations for the aliquots were 2.1 pCi/L and 2.0 pCi/L.

The Quality Control (QC) requirements were met for this analysis and are available for your review upon request.

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 should you have any questions.

Sincerely,



Dale Condra, Manager
Laboratory

RDC:WPI:ar

c: T. McLaughlin, NRC/NMSS/TWFFN 7F27 E. Abelquist, ORISE
E. Knox-Davin, NRC/NMSS/TWFFN 8A23 S. Kirk, ORISE
M. Miller, NRC Region I J. White, NRC Region I
J. Noggle, NRC Region I File 1677

Distribution approval and concurrence :	Initials
Technical Management Team Member	WCA for JSK
Quality Manager	ATP

Voice: 865.241.3242

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RECEIVED
REGION 1

February 2, 2006 2006 FEB -6 PM 2: 42

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

**SUBJECT: REVISED REPORT FOR ANALYSIS OF WATER SAMPLES FROM THE
INDIAN POINT POWER STATION, BUCHANAN, NEW YORK
[INSPECTION NO. 050-247/2005-011] [RFTA NO. 06-001]**

Dear Mr. Kottan:

The Oak Ridge Institute for Science and Education (ORISE) received seven water samples on October 28, 2005 from the Indian Point Power Station in Buchanan, New York. The sample identification and collection data are in Table 1. The samples were analyzed by gamma spectroscopy (GS) (Procedure CP1, Revision 15), for tritium (H-3) by liquid scintillation analysis (Procedure AP2, Revision 15, Procedure CP4, Revision 3), and for strontium (Sr-90) by gas-flow proportional counting (Procedure AP4, Revision 13; Procedure CP3, Revision 2). The GS results are presented in Table 2. The results for H-3 are presented in Table 3. The results for Sr-90 are presented in Table 4. The data for all analyses are reported in microcuries per milliliter ($\mu\text{Ci}/\text{mL}$).

This letter report is a revision to a letter report sent December 8, 2005. The data in the data tables were changed, at your request, to have the concentrations and TPUs contain the same number of significant digits. No other changes have been made.

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

Please contact me at 865.241.3242 or Wade Ivey at 865.576.9184 should you have any questions.

Sincerely,

Dale Condra

Dale Condra, Manager
Laboratory

RDC:WPI:ar

Enclosures

c: T. McLaughlin, NRC/NMSS/TWFFN 7F27 E. Abelquist, ORISE
E. Knox-Davin, NRC/NMSS/TWFFN 8A23 S. Kirk, ORISE
File 1677

Distribution approval and concurrence :	Initials
Technical Management Team Member	WCA for JSK
Quality Manager	RTF

Voice: 865.241.3242

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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
1677W0001	Unit 2 SFP	10/21/2005	12:45
1677W0002	Unit 1 West SFP	10/20/2005	-- ^a
1677W0003	Unit 1 SFDS	10/19/2005	8:25
1677W0004	Unit 2 SFP Wall Gutter	10/24/2005	-- ^a
1677W0005	MW-111	10/14/2005	10:10
1677W0006	NCD Composite	10/21/2005	12:45
1677W0007	MW-111	9/29/2005	-- ^a

^aThe collection time was not provided.

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 (μCi/mL)			
		Co-58	Co-60	Cs-134	Cs-137
1677W0001	Unit 2 SFP	(3.46 ± 0.16)E-04 ^b	(7.95 ± 0.28)E-04	(8.57 ± 0.31)E-04	(1.319 ± 0.046)E-03
1677W0002	Unit 1 West SFP	(-5 ± 18)E-07	(2.98 ± 0.35)E-05	(2 ± 14)E-07	(6.74 ± 0.22)E-03
1677W0003	Unit 1 SFDS	(-5 ± 24)E-10	(-8 ± 23)E-10	(-1.9 ± 2.3)E-09	(9 ± 22)E-10
1677W0004	Unit 2 SFP Wall Gutter	(2.4 ± 3.4)E-09	(4.56 ± 0.49)E-08	(2.64 ± 0.12)E-07	(4.88 ± 0.15)E-06
1677W0005	MW-111	(-7 ± 23)E-10	(1.8 ± 2.2)E-09	(1.9 ± 2.2)E-09	(-2.1 ± 3.6)E-09
1677W0006	NCD Composite	(-1.4 ± 1.8)E-09	(0.0 ± 2.1)E-09 ^c	(-6 ± 19)E-10	(4.48 ± 0.42)E-08
1677W0007	MW-111	(2.7 ± 4.3)E-09	(3.5 ± 3.1)E-09	(-5 ± 39)E-10	(-9 ± 29)E-10

^aThe range of MDCs for the selected radionuclides is 1.0E-10 μCi/mL to 3.4E-10 μCi/mL.

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

^cZero values are due to rounding.

TABLE 3

**CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS AND COUNTING
AP2, REVISION 15; CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ORISE Sample ID	NRC Region I Sample ID	Tritium Concentrations, TPU's, and MDCs^a (μCi/mL)	
1677W0001	Unit 2 SFP	$(2.929 \pm 0.083)E-02^b$	(0.053E-02)
1677W0002	Unit 1 West SFP	$(4.18 \pm 0.72)E-04$	(1.1E-04)
1677W0003	Unit 1 SFDS	$(5.7 \pm 2.6)E-07$	(4.2E-07)
1677W0004	Unit 2 SFP Wall Gutter	$(2.208 \pm 0.047)E-02$	(0.021E-02)
1677W0005	MW-111	$(7.29 \pm 0.41)E-06$	(0.42E-06)
1677W0006	NCD Composite	$(1.425 \pm 0.053)E-05$	(0.042E-05)
1677W0007	MW-111	$(2.168 \pm 0.028)E-04$	(0.0042E-04)

^aMDCs are in parenthesis.

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

TABLE 4

**CONCENTRATIONS OF STRONTIUM-90
IN WATER SAMPLES
BY GAS-FLOW PROPORTIONAL COUNTING
AP4, REVISION 13; CP3, REVISION 2
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ORISE Sample ID	NRC Region I Sample ID	Strontium Concentrations and MDCs ^a (μCi/mL)	
1677W0001	Unit 2 SFP	$(5.87 \pm 0.24)E-06^b$	(0.12E-06)
1677W0002	Unit 1 West SFP	$(1.300 \pm 0.035)E-04$	(0.0002E-04)
1677W0003	Unit 1 SFDS	$(-0.2 \pm 1.2)E-09$	(2.1E-09)
1677W0004	Unit 2 SFP Wall Gutter	$(3.70 \pm 0.12)E-07$	(0.02E-07)
1677W0005	MW-111	$(1.1 \pm 1.3)E-09$	(2.2E-09)
1677W0006	NCD Composite	$(9.97 \pm 0.42)E-08$	(0.20E-08)
1677W0007	MW-111	$(1.4 \pm 1.2)E-09$	(2.1E-09)

^aMDCs are in parenthesis and based on four hour count times.

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

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

January 13, 2006

RECEIVED
REGION I

2006 JUN 23 AM 8:09

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

SUBJECT: REPORT FOR ANALYSIS OF THIRD SET OF WATER SAMPLES FROM THE INDIAN POINT POWER STATION, BUCHANAN, NEW YORK [INSPECTION NO. 050-247/2005-011] [RFTA NO. 06-001]


Dear Mr. Kottan:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received four water samples on December 28, 2005 from the Indian Point Power Station in Buchanan, New York. After a phone conversation with Mark Roberts on December 28, 2005, the analytical work associated with these samples was changed from routine to urgent. The sample identifications and collection data are presented in Table 1. The samples were analyzed by gamma spectroscopy (GS) (Procedure CPI, Revision 15), for tritium (H-3) by liquid scintillation analysis (Procedure AP2, Revision 15; Procedure CP4, Revision 3), and for total radiostrontium (Sr) by gas-flow proportional counting (Procedure AP4, Revision 13; Procedure CP3, Revision 2). The GS, H-3, and Sr results are presented in Tables 2-4, respectively.

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

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 should you have any questions.

Sincerely,


Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC:WPI:ar

Enclosures

cc: T. McLaughlin, NRC/NMSS/TWFFN 7F27
E. Knox-Davin, NRC/NMSS/TWFFN 8A23
M. Miller, NRC Region I
J. Noggle, NRC Region I
E. Abelquist, ORISE/ESSAP
S. Kirk, ORISE/ESSAP
J. White, NRC Region I
File 1677

Distribution approval and concurrence :	Initials
Technical Management Team Member	WCA for JSK
Quality Manager	ATP

P. O. BOX 117, OAK RIDGE, TENNESSEE 37831-0117

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ORISE TABLE 1

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

ESSAP Sample ID	NRC Region I Sample ID	Collection Date	Collection Time
1677W00014	MW-101	12/8/2005	12:50
1677W00015	MW-105	12/8/2005	12:20
1677W00016	MW-107	12/8/2005	11:15
1677W00017	MW-38	12/8/2005	10:30

ORISE TABLE 2

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

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1677W00014	MW-101	-0.2 ± 3.1 ^b	2.5 ± 3.6	1.8 ± 3.4	-1.4 ± 5.3
1677W00015	MW-105	1.5 ± 3.3	1.5 ± 3.3	0.4 ± 3.5	0.4 ± 2.9
1677W00016	MW-107	1.7 ± 2.7	-0.2 ± 2.6	2.5 ± 2.8	-1.1 ± 2.4
1677W00017	MW-38	-1.5 ± 3.7	0.3 ± 3.3	4.4 ± 3.3	-0.7 ± 3.0

^aThe range of MDCs for the selected radionuclides is 3.9 pCi/L to 5.9 pCi/L.

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

ORISE TABLE 3

**CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP2, REVISION 15; CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ESSAP Sample ID	NRC Region I Sample ID	Tritium Concentrations, TPUs, and MDCs^a (pCi/L)
1677W00014	MW-101	70 ± 120 ^b (200)
1677W00015	MW-105	-10 ± 120 (200)
1677W00016	MW-107	130 ± 120 (200)
1677W00017	MW-38	740 ± 130 (200)

^aMDCs are in parenthesis.

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

ORISE TABLE 4

CONCENTRATIONS OF TOTAL RADIOSTRONTIUM
IN WATER SAMPLES
BY GAS-FLOW PROPORTIONAL COUNTING
AP4, REVISION 13; CP3, REVISION 2
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK

ESSAP Sample ID	NRC Region I Sample ID	Total Radiostrontium Concentrations, TPU's, and MDCs ^a (pCi/L)
1677W00014	MW-101	3.1 ± 1.3 ^b (2.0)
1677W00015	MW-105	-0.2 ± 1.2 (2.1)
1677W00016	MW-107	0.8 ± 1.2 (2.0)
1677W00017	MW-38	0.4 ± 1.2 (2.1)

^aMDCs are in parenthesis.

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

RECEIVED
REGION I

January 3, 2006

2006 JAN 13 AM 10:11

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

SUBJECT: REPORT FOR ANALYSIS OF SECOND SET OF WATER SAMPLES FROM THE INDIAN POINT POWER STATION, BUCHANAN, NEW YORK [INSPECTION NO. 050-247/2005-012] [RFTA NO. 06-001]

Dear Mr. Kottan:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received six water samples on December 12, 2005 from the Indian Point Power Station in Buchanan, New York. After a phone conversation with Marie Miller on December 16, 2005, the analytical work associated with these samples was changed from routine to urgent. The sample identifications and collection dates are presented in Table 1. The samples were analyzed by gamma spectroscopy (GS) (Procedure CP1, Revision 15), for tritium (H-3) by liquid scintillation analysis (Procedure AP2, Revision 15; Procedure CP4, Revision 3), and for total radiostrontium (Sr) by gas-flow proportional counting (Procedure AP4, Revision 13; Procedure CP3, Revision 2). The GS results are presented in Table 2. The results for H-3 are presented in Table 3. The results for Sr are presented in Table 4.

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

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 should you have any questions.

Sincerely,

Dale Condra
Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC:WPI:db

Enclosures

cc: T. McLaughlin, NRC/NMSS/TWFN 7F27 E. Knox-Davin, NRC/NMSS/TWFN 8A23 M. Miller, NRC Region I J. Noggle, NRC Region I	E. Abelquist, ORISE/ESSAP S. Kirk, ORISE/ESSAP J. White, NRC Region I File 1677
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Distribution approval and concurrence :	Initials
Technical Management Team Member	<i>[Handwritten initials]</i>
Quality Manager	

P. O. BOX 117, OAK RIDGE, TENNESSEE 37831-0117

Operated by Oak Ridge Associated Universities for the U.S. Department of Energy



ORISE TABLE 1

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

ESSAP Sample ID	NRC Region I Sample ID	Collection Date	Collection Time
1677W0008	Gypsum Plant Stream	11/30/2005	15:20
1677W0009	Trap Rock Quarry	11/30/2005	15:50
1677W0010	Algonquin Outfall	11/30/2005	15:25
1677W0011	5th Street Well	11/30/2005	16:05
1677W0012	Lefarge Gypsum Plant #1	12/6/2005	11:10
1677W0013	Lefarge Gypsum Plant #3	12/6/2005	9:55

ORISE TABLE 2

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

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1677W0008	Gypsum Plant Stream	0.0 ^b ± 1.9 ^c	0.1 ± 1.8	0.1 ± 2.1	-0.3 ± 1.7
1677W0009	Trap Rock Quarry	0.4 ± 1.7	-0.1 ± 2.1	-0.4 ± 1.8	0.6 ± 1.6
1677W0010	Algonquin Outfall	1.1 ± 2.3	-0.5 ± 2.2	0.5 ± 2.4	-1.6 ± 2.2
1677W0011	5th Street Well	0.9 ± 2.2	0.8 ± 2.6	-0.1 ± 2.1	-0.6 ± 2.1
1677W0012	Lefarge Gypsum Plant #1	-2.8 ± 3.2	0.8 ± 3.9	0.3 ± 3.6	0.2 ± 3.5
1677W0013	Lefarge Gypsum Plant #3	0.4 ± 2.5	0.3 ± 3.1	3.8 ± 2.8	-0.8 ± 4.4

^aThe range of MDCs for the selected radionuclides is 3.9 pCi/L to 4.2 pCi/L.

^bZero values are due to rounding.

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

ORISE TABLE 3

**CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP2, REVISION 15; CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations, TPU's, and MDCs^a (pCi/L)
1677W0008	Gypsum Plant Stream	10 ± 120 ^b (210)
1677W0009	Trap Rock Quarry	4 ± 120 (210)
1677W0010	Algonquin Outfall	30 ± 120 (210)
1677W0011	5th Street Well	-70 ± 120 (210)
1677W0012	Lefarge Gypsum Plant #1	40 ± 120 (210)
1677W0013	Lefarge Gypsum Plant #3	20 ± 120 (210)

^aMDCs are in parenthesis.

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

ORISE TABLE 4

**CONCENTRATIONS OF TOTAL RADIOSTRONTIUM
IN WATER SAMPLES
BY GAS-FLOW PROPORTIONAL COUNTING
AP4, REVISION 13; CP3, REVISION 2
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations, TPUs, and MDCs^a (pCi/L)			
1677W0008	Gypsum Plant Stream	0.5	±	1.0 ^b	(1.8)
1677W0009	Trap Rock Quarry	0.9	±	1.0	(1.7)
1677W0010	Algonquin Outfall	0.3	±	1.0	(1.8)
1677W0011	5th Street Well	0.4	±	1.0	(1.8)
1677W0012	Lefarge Gypsum Plant #1	1.2	±	1.1	(1.8)
1677W0013	Lefarge Gypsum Plant #3	0.1	±	1.0	(1.7)

^aMDCs are in parenthesis and are based on a four hour count time.

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

ORISE

OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

December 08, 2005

RECEIVED
REGION I
2005 DEC 12 PM 1:53

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

**SUBJECT: REPORT FOR ANALYSIS OF WATER SAMPLES FROM THE INDIAN POINT
POWER STATION, BUCHANAN, NEW YORK
[INSPECTION NO. 050-247/2005-011] [RFTA NO. 06-001]**

Dear Mr. Kottan:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received seven water samples on October 28, 2005 from the Indian Point Power Station in Buchanan, New York. The sample identifications and collection dates are in Table 1. The samples were analyzed by gamma spectroscopy (GS) (Procedure CP1, Revision 15), for tritium (H-3) by liquid scintillation analysis (Procedure AP2, Revision 15, Procedure CP4, Revision 3), and for strontium (Sr-90) by gas-flow proportional counting (Procedure AP4, Revision 13; Procedure CP3, Revision 2). The GS results are presented in Table 2. The results for H-3 are presented in Table 3. The results for Sr-90 are presented in Table 4. The data for all analyses are reported in microcuries per milliliter ($\mu\text{Ci/mL}$).

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

Please contact me at (865) 241-3242 or Wade Ivey at (865) 576-9184 should you have any questions.

Sincerely,



Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC:WPI:ar

Enclosures

cc: T. McLaughlin, NRC/NMSS/TWFFN 7F27
E. Knox-Davin, NRC/NMSS/TWFFN 8A23
File/1677

E. Abelquist, ORISE/ESSAP
S. Kirk, ORISE/ESSAP

Distribution approval and concurrence :	Initials
Technical Management Team Member	DSR
Quality Manager	TUB for ATP

P. O. BOX 117, OAK RIDGE, TENNESSEE 37831-0117

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ORISE TABLE 1

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

ESSAP Sample ID	NRC Region I Sample ID	Collection Date	Collection Time
1677W0001	Unit 2 SFP	10/21/2005	12:45
1677W0002	Unit 1 West SFP	10/20/2005	-- ^a
1677W0003	Unit 1 SFDS	10/19/2005	8:25
1677W0004	Unit 2 SFP Wall Gutter	10/24/2005	--
1677W0005	MW-111	10/14/2005	10:10
1677W0006	NCD Composite	10/21/2005	12:45
1677W0007	MW-111	9/29/2005	--

^aThe collection time was not provided.

ORISE TABLE 2

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

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations ^a (μCi/mL)			
		Co-58	Co-60	Cs-134	Cs-137
1677W0001	Unit 2 SFP	3.5E-04 ± 1.6E-05 ^b	8.0E-04 ± 2.8E-05	8.6E-04 ± 3.1E-05	1.3E-03 ± 4.6E-05
1677W0002	Unit 1 West SFP	-5.4E-07 ± 1.8E-06	3.0E-05 ± 3.5E-06	2.2E-07 ± 1.4E-06	6.7E-03 ± 2.2E-04
1677W0003	Unit 1 SFDS	-5.0E-10 ± 2.4E-09	-8.0E-10 ± 2.3E-09	-1.9E-09 ± 2.3E-09	9.0E-10 ± 2.2E-09
1677W0004	Unit 2 SFP Wall Gutter	2.4E-09 ± 3.4E-09	4.6E-08 ± 4.9E-09	2.6E-07 ± 1.2E-08	4.9E-06 ± 1.5E-07
1677W0005	MW-111	-7.0E-10 ± 2.3E-09	1.8E-09 ± 2.2E-09	1.9E-09 ± 2.2E-09	-2.1E-09 ± 3.6E-09
1677W0006	NCD Composite	-1.4E-09 ± 1.8E-09	0.0E00 ^c ± 2.1E-09	-6.0E-10 ± 1.9E-09	4.5E-08 ± 4.2E-09
1677W0007	MW-111	2.7E-09 ± 4.3E-09	3.5E-09 ± 3.1E-09	-5.0E-10 ± 3.9E-09	-9.0E-10 ± 2.9E-09

^aThe range of MDCs for the selected radionuclides is 1.0E-10 μCi/mL to 3.4E-10 μCi/mL.

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

^cZero values are due to rounding.

ORISE TABLE 3

**CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS AND COUNTING
AP2, REVISION 15; CP4, REVISION 3
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations, TPU_s, and MDC_s^a (μCi/mL)
1677W0001	Unit 2 SFP	2.9E-02 ± 8.3E-04 ^b (5.3E-04)
1677W0002	Unit 1 West SFP	4.2E-04 ± 7.2E-05 (1.1E-04)
1677W0003	Unit 1 SFDS	5.7E-07 ± 2.6E-07 (4.2E-07)
1677W0004	Unit 2 SFP Wall Gutter	2.2E-02 ± 4.7E-04 (2.1E-04)
1677W0005	MW-111	7.3E-06 ± 4.1E-07 (4.2E-07)
1677W0006	NCD Composite	1.4E-05 ± 5.3E-07 (4.2E-07)
1677W0007	MW-111	2.2E-04 ± 2.8E-06 (4.2E-07)

^aMDCs are in parenthesis.

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

ORISE TABLE 4

**CONCENTRATIONS OF STRONTIUM-90
IN WATER SAMPLES
BY GAS-FLOW PROPORTIONAL COUNTING
AP4, REVISION 13; CP3, REVISION 2
INDIAN POINT POWER STATION
BUCHANAN, NEW YORK**

ESSAP Sample ID	NRC Region I Sample ID	Radionuclide Concentrations and MDCs^a (μCi/mL)		
1677W0001	Unit 2 SFP	5.9E-06	± 2.4E-07 ^b	(1.2E-07)
1677W0002	Unit 1 West SFP	1.3E-04	± 3.5E-06	(2.0E-08)
1677W0003	Unit 1 SFDS	-2.0E-10	± 1.2E-09	(2.1E-09)
1677W0004	Unit 2 SFP Wall Gutter	3.7E-07	± 1.2E-08	(2.0E-09)
1677W0005	MW-111	1.1E-09	± 1.3E-09	(2.2E-09)
1677W0006	NCD Composite	1.0E-07	± 4.2E-09	(2.0E-09)
1677W0007	MW-111	1.4E-09	± 1.2E-09	(2.1E-09)

^aMDCs are in parenthesis and based on four hour count times.

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