

July 11, 2006

Mr. William Snell
U.S. Nuclear Regulatory Commission
Region III
2443 Warrenville Road
Lisle, IL 60532-4351

SUBJECT: FINAL LETTER REPORT FOR ANALYTICAL RESULTS FOR FIFTY-FIVE WATER SAMPLES, BATCH FIVE, FROM THE VICINITY OF THE DRESDEN GENERATING STATION, DRESDEN, ILLINOIS [INSPECTION REPORT NO. 050-00237/2006-007] (RFTA NO. 06-001)

Dear Mr. Snell:

The Oak Ridge Institute for Science and Education (ORISE) received 55 water samples on June 20, 2006 which were collected in the vicinity of the Dresden Generating Station in Dresden, Illinois. The samples were analyzed for tritium. The chain-of-custody identified 11 water samples to be analyzed by gamma spectroscopy (GS). The sample identifications and collection data are presented in Table 1. The GS data are presented in Table 2. The tritium data are presented in Table 3. The data for sample D-06-5-03 is qualified due to the lack of sample volume needed for the distillation procedure. The sample volume, as received, was approximately three mL. The pertinent procedure references are provided in the specific tables.

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:ess

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TABLE 1

**SAMPLE IDENTIFICATIONS
AND COLLECTION DATA
DRESDEN GENERATING STATION
DRESDEN, ILLINOIS**

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
1694W0057	D-06-5-01	02/20/2006	12:26 PM
1694W0058	D-06-5-02	03/03/2006	11:25 AM
1694W0059	D-06-5-03	03/04/2006	4:40 PM
1694W0060	D-06-5-04	03/09/2006	1:00 PM
1694W0061	D-06-5-05	05/31/2006	10:15 AM
1694W0062	D-06-5-06	05/31/2006	11:45 AM
1694W0063	D-06-5-07	05/31/2006	2:00 PM
1694W0064	D-06-5-08	05/31/2006	3:30 PM
1694W0065	D-06-5-09	05/26/2006	10:10 AM
1694W0066	D-06-5-10	05/26/2006	12:00 PM
1694W0067	D-06-5-11	05/26/2006	2:10 PM
1694W0068	D-06-5-12	05/26/2006	3:35 PM
1694W0069	D-06-5-13	05/26/2006	5:00 PM
1694W0070	D-06-5-14	05/24/2006	12:25 PM
1694W0071	D-06-5-15	05/24/2006	2:15 PM
1694W0072	D-06-5-16	05/24/2006	5:05 PM
1694W0073	D-06-5-17	06/01/2006	9:00 AM
1694W0074	D-06-5-18	06/01/2006	9:40 AM
1694W0075	D-06-5-19	06/01/2006	11:20 AM
1694W0076	D-06-5-20	05/31/2006	10:00 AM
1694W0077	D-06-5-21	05/31/2006	11:40 AM
1694W0078	D-06-5-22	05/31/2006	1:30 PM
1694W0079	D-06-5-23	05/31/2006	2:30 PM
1694W0080	D-06-5-24	05/31/2006	3:20 PM
1694W0081	D-06-5-25	05/30/2006	9:40 AM
1694W0082	D-06-5-26	05/30/2006	1:50 PM
1694W0083	D-06-5-27	05/30/2006	3:50 PM
1694W0084	D-06-5-28	05/26/2006	9:40 AM

TABLE 1 (continued)

**SAMPLE IDENTIFICATIONS
AND COLLECTION DATA
DRESDEN GENERATING STATION
DRESDEN, ILLINOIS**

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
1694W0085	D-06-5-29	05/26/2006	10:00 AM
1694W0086	D-06-5-30	05/26/2006	11:05 AM
1694W0087	D-06-5-31	05/26/2006	2:00 PM
1694W0088	D-06-5-32	05/26/2006	3:20 PM
1694W0089	D-06-5-33	05/26/2006	4:55 PM
1694W0090	D-06-5-34	05/24/2006	1:26 PM
1694W0091	D-06-5-35	05/23/2006	11:14 AM
1694W0092	D-06-5-36	05/23/2006	1:36 PM
1694W0093	D-06-5-37	05/23/2006	3:50 PM
1694W0094	D-06-5-38	06/01/2006	10:45 AM
1694W0095	D-06-5-39	06/01/2006	11:50 AM
1694W0096	D-06-5-40	06/01/2006	2:10 PM
1694W0097	D-06-5-41	06/01/2006	3:10 PM
1694W0098	D-06-5-42	05/30/2006	10:55 AM
1694W0099	D-06-5-43	05/30/2006	2:10 PM
1694W0100	D-06-5-44	05/30/2006	3:15 PM
1694W0101	D-06-5-45	05/30/2006	5:20 PM
1694W0102	D-06-5-46	05/23/2006	11:30 AM
1694W0103	D-06-5-47	05/23/2006	12:30 PM
1694W0104	D-06-5-48	05/23/2006	1:50 PM
1694W0105	D-06-5-49	05/25/2006	6:40 AM
1694W0106	D-06-5-50	05/25/2006	9:40 AM
1694W0107	D-06-5-51	05/25/2006	11:09 AM
1694W0108	D-06-5-52	05/25/2006	1:00 PM
1694W0109	D-06-5-53	05/25/2006	10:15 AM
1694W0110	D-06-5-54	05/25/2006	3:00 PM
1694W0111	D-06-5-55	05/25/2006	5:00 PM

TABLE 2

CONCENTRATIONS OF SELECTED
GAMMA EMITTING RADIONUCLIDES
IN SELECTED WATER SAMPLES
BY GAMMA SPECTROSCOPY CP1, REVISION 15
DRESDEN GENERATING STATION
DRESDEN, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations ^a (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1694W0061	D-06-5-05	-3.4 ± 7.3 ^b	-2.4 ± 5.8	-6 ± 10	2.2 ± 5.2
1694W0066	D-06-5-10	-0.9 ± 6.6	3.0 ± 4.3	-2.8 ± 5.4	2.0 ± 4.0
1694W0071	D-06-5-15	-3.1 ± 6.3	3.2 ± 5.5	-0.4 ± 6.0	1.9 ± 5.0
1694W0076	D-06-5-20	5.1 ± 5.5	-3.0 ± 9.8	4.1 ± 5.6	-6.1 ± 9.1
1694W0081	D-06-5-25	-0.5 ± 3.6	0.1 ± 3.1	-1.9 ± 3.2	2.5 ± 2.9
1694W0086	D-06-5-30	2.1 ± 6.2	3.4 ± 6.3	-0.7 ± 5.6	-2.3 ± 5.0
1694W0091	D-06-5-35	0.1 ± 8.0	1.1 ± 5.7	2.7 ± 6.5	1.3 ± 5.0
1694W0096	D-06-5-40	-2.1 ± 3.4	2.7 ± 6.0	1.3 ± 3.1	0.2 ± 5.6
1694W0101	D-06-5-45	-1.6 ± 6.3	-0.1 ± 9.6	1.6 ± 5.0	-0.6 ± 9.0
1694W0106	D-06-5-50	0.4 ± 6.2	3.1 ± 8.7	0.4 ± 4.7	0.7 ± 4.0
1694W0111	D-06-5-55	-0.1 ± 4.6	0.3 ± 3.2	1.0 ± 4.5	1.3 ± 3.0

^aThe range of MDCs for the selected radionuclides is 4.7 pCi/L to 12.0 pCi/L.

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

TABLE 3

**CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP2, REVISION 15; CP4, REVISION 3
DRESDEN GENERATING STATION
DRESDEN, ILLINOIS**

ORISE Sample ID	NRC Region III Sample ID	Tritium Concentrations, TPUs, and MDCs^a (pCi/L)
1694W0057	D-06-5-01	72,100 ± 2,000 ^b (200)
1694W0058	D-06-5-02	111,000 ± 3,000 (240)
1694W0059	D-06-5-03 ^c	158,200 ± 4,500 (620)
1694W0060	D-06-5-04	245,100 ± 6,700 (360)
1694W0061	D-06-5-05	3,810 ± 210 (190)
1694W0062	D-06-5-06	120 ± 110 (190)
1694W0063	D-06-5-07	690 ± 130 (190)
1694W0064	D-06-5-08	980 ± 140 (190)
1694W0065	D-06-5-09	13,990 ± 480 (190)
1694W0066	D-06-5-10	10,830 ± 400 (190)
1694W0067	D-06-5-11	120 ± 110 (190)
1694W0068	D-06-5-12	4,900 ± 240 (190)
1694W0069	D-06-5-13	120 ± 110 (190)
1694W0070	D-06-5-14	80 ± 110 (190)
1694W0071	D-06-5-15	10 ± 110 (190)
1694W0072	D-06-5-16	2,060 ± 170 (190)
1694W0073	D-06-5-17	0 ^d ± 110 (190)
1694W0074	D-06-5-18	-70 ± 110 (190)
1694W0075	D-06-5-19	-60 ± 110 (190)
1694W0076	D-06-5-20	610 ± 130 (190)
1694W0077	D-06-5-21	-20 ± 110 (190)
1694W0078	D-06-5-22	10 ± 110 (190)
1694W0079	D-06-5-23	40 ± 110 (190)
1694W0080	D-06-5-24	130 ± 110 (190)
1694W0081	D-06-5-25	90 ± 110 (180)
1694W0082	D-06-5-26	180 ± 110 (190)
1694W0083	D-06-5-27	250 ± 110 (190)
1694W0084	D-06-5-28	110 ± 110 (190)

TABLE 3 (continued)

**CONCENTRATIONS OF TRITIUM
IN WATER SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP2, REVISION 15; CP4, REVISION 3
DRESDEN GENERATING STATION
DRESDEN, ILLINOIS**

ORISE Sample ID	NRC Region III Sample ID	Tritium Concentrations, TPUs, and MDCs ^a (pCi/L)			
1694W0085	D-06-5-29	100	±	110	(190)
1694W0086	D-06-5-30	430	±	120	(180)
1694W0087	D-06-5-31	-30	±	110	(190)
1694W0088	D-06-5-32	60	±	110	(190)
1694W0089	D-06-5-33	50	±	110	(190)
1694W0090	D-06-5-34	-10	±	110	(190)
1694W0091	D-06-5-35	130	±	110	(180)
1694W0092	D-06-5-36	50	±	110	(190)
1694W0093	D-06-5-37	170	±	110	(190)
1694W0094	D-06-5-38	1,560	±	150	(190)
1694W0095	D-06-5-39	4,260	±	230	(190)
1694W0096	D-06-5-40	40	±	100	(180)
1694W0097	D-06-5-41	430	±	120	(190)
1694W0098	D-06-5-42	-50	±	110	(190)
1694W0099	D-06-5-43	120	±	110	(190)
1694W0100	D-06-5-44	680	±	130	(190)
1694W0101	D-06-5-45	290	±	110	(180)
1694W0102	D-06-5-46	320	±	110	(180)
1694W0103	D-06-5-47	2,790	±	180	(180)
1694W0104	D-06-5-48	9,900	±	370	(180)
1694W0105	D-06-5-49	0	±	100	(180)
1694W0106	D-06-5-50	20	±	100	(180)
1694W0107	D-06-5-51	100	±	110	(180)
1694W0108	D-06-5-52	60	±	100	(180)
1694W0109	D-06-5-53	40	±	100	(180)
1694W0110	D-06-5-54	170	±	110	(180)
1694W0111	D-06-5-55	1,590	±	150	(180)

^aMDCs are in parentheses.

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

^cThe results for this sample are qualified due to an insufficient sample volume needed for the distillation procedure.

^dZero values are due to rounding.