

June 28, 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  
EIGHT WATER SAMPLES, BATCH FOUR, 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 eight water samples on May 31, 2006 which were collected in the vicinity of the Dresden Generating Station in Dresden, Illinois. This letter report contains the original data submitted on June 16, 2006 and the total radiostrontium data. The chain-of-custody identified one water sample to be analyzed by gamma spectroscopy (GS), four samples to be analyzed for tritium, and four samples to be analyzed for total radiostrontium. 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 total radiostrontium data are presented in Table 4. 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:ar

Enclosure

c:	B. Watson, NMSS/DWMEP/DD/SP 7E18	E. Abelquist, ORISE
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**TABLE 1**

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

<b>ORISE Sample ID</b>	<b>NRC Region III Sample ID</b>	<b>Collection Date</b>	<b>Collection Time</b>
1694W0049	D-06-4-01	05/24/2006	12:00 AM
1694W0050	D-06-4-02	05/24/2006	12:06 AM
1694W0051	D-06-4-03	05/24/2006	3:30 PM
1694W0052	D-06-4-04	05/24/2006	3:40 PM
1694W0053	D-06-4-05	05/25/2006	10:20 AM
1694W0054	D-06-4-06	05/25/2006	10:25 AM
1694W0055	D-06-4-07	05/25/2006	11:20 AM
1694W0056	D-06-4-08	05/25/2006	11:25 AM

**TABLE 2**

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

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations <sup>a</sup> (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1694W0053	D-06-4-05	-3.4 ± 3.1 <sup>b</sup>	0.2 ± 2.8	-0.7 ± 2.7	3.6 ± 6.6

<sup>a</sup>The range of MDCs for the selected radionuclides is 4.4 pCi/L to 4.9 pCi/L.

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

**TABLE 3**

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

<b>ORISE Sample ID</b>	<b>NRC Region III Sample ID</b>	<b>Tritium Concentrations, TPUs, and MDCs<sup>a</sup> (pCi/L)</b>			
1694W0049	D-06-4-01	10	±	110 <sup>b</sup>	(180)
1694W0051	D-06-4-03	-30	±	110	(180)
1694W0053	D-06-4-05	30	±	110	(180)
1694W0055	D-06-4-07	70	±	110	(180)

<sup>a</sup>MDCs are in parentheses.

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

**TABLE 4**

**CONCENTRATIONS OF TOTAL RADIOSTRONTIUM  
IN SELECTED WATER SAMPLES  
BY LOW BACKGROUND BETA COUNTING  
AP4, REVISION 13; CP3, REVISION 2  
DRESDEN GENERATING STATION  
DRESDEN, ILLINOIS**

<b>ORISE Sample ID</b>	<b>NRC Region III Sample ID</b>	<b>Radionuclide Concentrations, TPUs, and MDCs<sup>a</sup> (pCi/L)</b>
1694W0050	D-06-4-02	-1.07 ± 0.86 <sup>b</sup> (1.71)
1694W0052	D-06-4-04	0.2 ± 1.0 (1.9)
1694W0054	D-06-4-06	0.25 • 0.89 (1.57)
1694W0056	D-06-4-08	0.8 ± 1.0 (1.8)

<sup>a</sup>MDCs are in parentheses.

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