

December 5, 2007

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

**SUBJECT: LETTER REPORT FOR 23 WATER SAMPLES FROM THE VICINITY OF THE BRAIDWOOD NUCLEAR GENERATING STATION, BRAIDWOOD, ILLINOIS [INSPECTION REPORT NO. 050-00456/2007-005] (RFTA NO. 07-005)**

Dear Mr. Snell:

The Oak Ridge Institute for Science and Education (ORISE) received 23 water samples associated with the Braidwood Nuclear Generating Station on September 17, 2007. The sample analysis was delayed until authorization was received from the Office of Nuclear Reactor Regulation on November 1, 2007. The samples were analyzed for tritium to an averaged minimum detectable concentration of 180 pCi/L using a liquid scintillation analyzer. The sample identifications and collection data are presented in Table 1. The tritium data are presented in Table 2. 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:bf

c: T. Carter, NRC/FSME/DWMEP T-8F5  
E. Knox-Davin, NRC/NMSS/TWFFN 8A23  
File 1753  
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Distribution approval and concurrence :	Initials
Technical Management Team Member	DJR
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TABLE 1

**SAMPLE IDENTIFICATIONS  
AND COLLECTION DATA  
BRAIDWOOD NUCLEAR GENERATING STATION  
BRAIDWOOD, ILLINOIS**

<b>ORISE Sample ID</b>	<b>NRC Region III Sample ID</b>	<b>Collection Date</b>	<b>Collection Time</b>
1753W0001	BD-07-5-01	9/14/2007	10:38
1753W0002	BD-07-5-02	9/14/2007	9:28
1753W0003	BD-07-5-03	9/14/2007	10:16
1753W0004	BD-07-5-04	9/11/2007	9:50
1753W0005	BD-07-5-05	9/11/2007	11:05
1753W0006	BD-07-5-06	9/11/2007	11:40
1753W0007	BD-07-5-07	9/11/2007	12:55
1753W0008	BD-07-5-08	9/11/2007	10:25
1753W0009	BD-07-5-09	9/11/2007	13:35
1753W0010	BD-07-5-10	9/11/2007	13:15
1753W0011	BD-07-5-11	9/11/2007	10:55
1753W0012	BD-07-5-12	9/11/2007	9:55
1753W0013	BD-07-5-13	9/11/2007	14:05
1753W0014	BD-07-5-14	9/11/2007	11:45
1753W0015	BD-07-5-15	9/11/2007	15:20
1753W0016	BD-07-5-16	9/11/2007	14:50
1753W0017	BD-07-5-17	9/11/2007	14:40
1753W0018	BD-07-5-18	9/11/2007	14:15
1753W0019	BD-07-5-19	9/11/2007	15:35
1753W0020	BD-07-5-20	9/11/2007	16:10
1753W0021	BD-07-5-21	9/12/2007	9:05
1753W0022	BD-07-5-22	9/11/2007	16:10
1753W0023	BD-07-5-23	9/12/2007	9:05

TABLE 2

TRITIUM CONCENTRATIONS  
 IN WATER SAMPLES  
 BY LIQUID SCINTILLATION ANALYSIS  
 AP2, REVISION 16 AND CP4, REVISION 3  
 BRAIDWOOD NUCLEAR GENERATING STATION  
 BRAIDWOOD, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Tritium Concentrations (pCi/L)
1753W0001	BD-07-5-01	50 ± 110 <sup>a</sup> , 180 <sup>b</sup>
1753W0002	BD-07-5-02	70 ± 110 , 180
1753W0003	BD-07-5-03	620 ± 120 , 180
1753W0004	BD-07-5-04	1,210 ± 150 , 180
1753W0005	BD-07-5-05	14,120 ± 640 , 180
1753W0006	BD-07-5-06	40 ± 110 , 180
1753W0007	BD-07-5-07	350 ± 120 , 180
1753W0008	BD-07-5-08	-20 ± 100 , 180
1753W0009	BD-07-5-09	40 ± 110 , 180
1753W0010	BD-07-5-10	10 ± 100 , 180
1753W0011	BD-07-5-11	10 ± 110 , 180
1753W0012	BD-07-5-12	40 ± 110 , 180
1753W0013	BD-07-5-13	-60 ± 100 , 180
1753W0014	BD-07-5-14	-60 ± 100 , 180
1753W0015	BD-07-5-15	-40 ± 110 , 190
1753W0016	BD-07-5-16	0 <sup>c</sup> ± 110 , 190
1753W0017	BD-07-5-17	670 ± 130 , 180
1753W0018	BD-07-5-18	1,000 ± 140 , 180
1753W0019	BD-07-5-19	20 ± 100 , 180
1753W0020	BD-07-5-20	7,870 ± 400 , 180
1753W0021	BD-07-5-21	2,530 ± 190 , 180
1753W0022	BD-07-5-22	14,730 ± 660 , 180
1753W0023	BD-07-5-23	-40 ± 110 , 190

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

<sup>b</sup>MDCs are after the comma.

<sup>c</sup>Zero value is due to rounding.