

June 2, 2006

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

SUBJECT: ANALYTICAL RESULTS FOR THIRTEEN WATER SAMPLES, BATCH SIX, FROM THE VICINITY OF THE BRAIDWOOD GENERATING STATION, BRAIDWOOD, ILLINOIS [INSPECTION REPORT NO. 050-456/2006-003] (RFTA NO. 06-001)

Dear Mr. Snell:

The Oak Ridge Institute for Science and Education (ORISE) received 13 water samples, Batch Six, on May 23, 2006 that were collected in the vicinity of the Braidwood Generating Station in Braidwood, Illinois. The 13 water samples were analyzed for tritium to a minimum detectable concentration of 190 pCi/L using a liquid scintillation analyzer. The chain-of-custody identified two 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.

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. McLaughlin, NRC/NMSS/TWFN 7F27
E. Knox-Davin, NRC/NMSS/TWFN 8A23
G. Bonano, NRC Region III

E. Abelquist, ORISE
S. Kirk, ORISE
File 1691

Distribution approval and concurrence :	Initials
Technical Management Team Member	JJK
Quality Manager	ATD

Voice: 865.241.3242

Fax: 865.241.3248

E-mail: CondraD@orau.gov

P. O. Box 117
Oak Ridge, TN 37831

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TABLE 1

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

ORISE Sample ID	NRC Region III Sample ID	Collection Date	Collection Time
1691W0128	BD-06-6-01	5/10/2006	9:25 AM
1691W0129	BD-06-6-02	5/10/2006	1:45 PM
1691W0130	BD-06-6-03	5/11/2006	10:05 AM
1691W0131	BD-06-6-04	5/11/2006	3:00 PM
1691W0132	BD-06-6-05	5/15/2006	10:00 AM
1691W0133	BD-06-6-06	4/5/2006	NDP ^a
1691W0134	BD-06-6-07	4/13/2006	NDP
1691W0135	BD-06-6-08	4/18/2006	NDP
1691W0136	BD-06-6-09	5/5/2006	NDP
1691W0137	BD-06-6-10	5/13/2006	NDP
1691W0138	BD-06-6-11	5/16/2006	NDP
1691W0139	BD-06-6-12	5/19/2006	NDP
1691W0140	BD-06-6-13	5/19/2006	NDP

^aNo data provided.

TABLE 2

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

ORISE Sample ID	NRC Region III Sample ID	Radionuclide Concentrations ^a (pCi/L)			
		Co-58	Co-60	Cs-134	Cs-137
1691W0132	BD-06-6-05	-4.0 ± 4.1 ^b	3.8 ± 4.4	0.9 ± 4.5	-5.2 ± 6.2
1691W0137	BD-06-6-10	-0.4 ± 2.9	-0.5 ± 3.0	1.1 ± 3.2	1.5 ± 2.8

^aThe range of MDCs for the selected radionuclides is 4.9 pCi/L to 8.1 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
BRAIDWOOD NUCLEAR GENERATING STATION
BRAIDWOOD, ILLINOIS

ORISE Sample ID	NRC Region III Sample ID	Tritium Concentrations, TPUs, and MDCs ^a (pCi/L)		
1691W0128	BD-06-6-01	-30	± 110 ^b	(190)
1691W0129	BD-06-6-02	-30	± 110	(190)
1691W0130	BD-06-6-03	430	± 120	(190)
1691W0131	BD-06-6-04	90	± 110	(190)
1691W0132	BD-06-6-05	50	± 110	(190)
1691W0133	BD-06-6-06	-20	± 110	(190)
1691W0134	BD-06-6-07	-50	± 110	(190)
1691W0135	BD-06-6-08	-30	± 110	(190)
1691W0136	BD-06-6-09	60	± 110	(190)
1691W0137	BD-06-6-10	-50	± 110	(190)
1691W0138	BD-06-6-11	-60	± 110	(190)
1691W0139	BD-06-6-12	-30	± 110	(190)
1691W0140	BD-06-6-13	90	± 110	(190)

^aMDCs are in parentheses.

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