

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

December 5, 2005

Mr. Theodore Smith
MailStop: T-7F27
Division of Waste Management
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

**SUBJECT: REPORT FOR ANALYSIS OF SOIL AND MISCELLANEOUS SAMPLES FROM
THE CONNECTICUT YANKEE HADDAM NECK PLANT, HADDAM,
CONNECTICUT [DOCKET NO. 50-0213; RFTA NO. 03-008]**

Dear Mr. Smith:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received fifteen soil samples and eleven miscellaneous (concrete) samples that were collected during the period of November 17, 2004 to July 21, 2005 at the Connecticut Yankee Haddam Neck Plant in Haddam, Connecticut. These samples were collected by Connecticut Yankee Atomic Power Company (CYAPCO) personnel. At the request of the U.S. Nuclear Regulatory Commission (NRC), these samples were submitted to the ESSAP laboratory and analyzed by gamma spectroscopy (Procedure CP1, Revision 15) for Co-60, Cs-137, Eu-152, Eu-154, and Eu-155 and by wet chemistry analyses for H-3 (Procedure AP6, Revision 15) and Sr-90 (Procedure AP4, Revision 13). The radionuclide concentrations for these samples are provided in Table 1.

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

If you have any questions or comments, please direct them to me at (865) 576-0065 or Scott Kirk at (865) 574-0685.

Sincerely,



Wade C. Adams
Health Physicist/Project Leader
Environmental Survey and
Site Assessment Program

WCA:db

Enclosure

cc:	T. McLaughlin, NRC/NMSS/TWFN T-7E18	E. Abelquist, ORISE/ESSAP
	E. Knox-Davin, NRC/NMSS/TWFN 8A23	S. Kirk, ORISE/ESSAP
	L. Kauffman, NRC/Region I	M. Miller, NRC/Region I
	J. Kottan, NRC/Region I	File/0857

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

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

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



TABLE 1

**RADIONUCLIDE CONCENTRATIONS
IN SOIL AND MISCELLANEOUS SAMPLES
SUBMITTED TO ESSAP BY THE NRC
CONNECTICUT YANKEE
HADDAM, CONNECTICUT**

Sample Identification	Collected		Radionuclide Concentrations (pCi/g)						
	Date	Time	H-3	Co-60	Sr-90	Cs-137	Eu-152	Eu-154	Eu-155
Soil Samples									
89	3/16/05	1517	1.9 ± 1.5^b	0.06 ± 0.05	0.03 ± 0.22	$0.00^c \pm 0.11$	0.00 ± 0.10	-0.13 ± 0.22	0.03 ± 0.06
90	3/16/05	1532	0.5 ± 1.4	0.01 ± 0.02	0.01 ± 0.23	0.02 ± 0.03	-0.02 ± 0.03	-0.03 ± 0.07	0.01 ± 0.02
91	11/17/04	1100	5.3 ± 1.6	0.02 ± 0.03	-0.04 ± 0.24	0.04 ± 0.03	0.01 ± 0.06	-0.02 ± 0.13	0.03 ± 0.04
92	11/17/04	1100	6.6 ± 1.6	0.02 ± 0.05	-0.04 ± 0.24	-0.02 ± 0.09	0.00 ± 0.10	-0.22 ± 0.21	0.03 ± 0.05
93	4/13/05	1012	0.5 ± 1.4	0.00 ± 0.04	3.88 ± 0.44	0.05 ± 0.04	-0.02 ± 0.09	0.10 ± 0.15	0.03 ± 0.05
94	3/16/05	0829	0.2 ± 1.4	0.01 ± 0.02	-0.03 ± 0.22	0.01 ± 0.03	0.01 ± 0.04	0.05 ± 0.07	0.07 ± 0.04
95	2/1/05	1030	0.7 ± 1.4	0.01 ± 0.02	0.01 ± 0.24	-0.01 ± 0.01	0.03 ± 0.03	-0.06 ± 0.06	0.02 ± 0.03
96	1/11/05	1545	-0.7 ± 1.4	0.01 ± 0.01	-0.23 ± 0.23	0.00 ± 0.01	0.01 ± 0.02	0.00 ± 0.05	0.01 ± 0.02
97	1/11/05	1545	-0.1 ± 1.4	0.02 ± 0.02	-0.16 ± 0.21	0.00 ± 0.01	0.00 ± 0.03	-0.03 ± 0.07	0.01 ± 0.02
98	6/8/05	1017	-1.4 ± 1.4	0.02 ± 0.03	-0.26 ± 0.21	0.14 ± 0.03	-0.01 ± 0.05	0.10 ± 0.09	0.10 ± 0.07
99	6/22/05	0955	0.6 ± 1.5	0.19 ± 0.05	-0.10 ± 0.23	0.84 ± 0.06	-0.03 ± 0.05	0.01 ± 0.09	0.04 ± 0.06
100	6/20/05	1430	0.5 ± 2.2	0.02 ± 0.03	0.08 ± 0.24	0.11 ± 0.03	-0.02 ± 0.04	-0.01 ± 0.10	0.02 ± 0.05
101	6/21/05	0900	0.0 ± 1.4	6.87 ± 0.28	0.19 ± 0.25	33.0 ± 1.2	0.00 ± 0.12	-0.16 ± 0.16	0.00 ± 0.09
102	7/21/05	0811	-0.1 ± 1.4	0.03 ± 0.02	-0.11 ± 0.22	0.25 ± 0.03	-0.02 ± 0.04	-0.01 ± 0.10	0.02 ± 0.03
103	7/21/05	0815	-0.9 ± 1.5	0.19 ± 0.05	-0.01 ± 0.23	0.79 ± 0.06	-0.02 ± 0.05	-0.03 ± 0.10	0.03 ± 0.05

TABLE 1 (continued)

**RADIONUCLIDE CONCENTRATIONS
IN SOIL AND MISCELLANEOUS SAMPLES
SUBMITTED TO ESSAP BY THE NRC
CONNECTICUT YANKEE
HADDAM, CONNECTICUT**

Sample Identification	Collected ^a		Radionuclide Concentrations (pCi/g)						
	Date	Time	H-3	Co-60	Sr-90	Cs-137	Eu-152	Eu-154	Eu-155
Miscellaneous Samples									
1	5/9/05	1515	3.4 ± 1.6	0.00 ± 0.04	-0.04 ± 0.22	-0.03 ± 0.04	0.04 ± 0.06	-0.01 ± 0.15	0.03 ± 0.05
2	5/9/05	1515	6.8 ± 1.7	-0.01 ± 0.04	-0.15 ± 0.22	-0.01 ± 0.03	0.04 ± 0.07	-0.16 ± 0.14	0.02 ± 0.06
3	5/9/05	1435	10.4 ± 1.9	0.04 ± 0.04	0.29 ± 0.25	0.00 ± 0.04	-0.02 ± 0.08	0.07 ± 0.20	-0.02 ± 0.06
4	6/9/05	1005	0.0 ± 1.5	0.03 ± 0.05	0.09 ± 0.23	0.08 ± 0.06	-0.08 ± 0.12	-0.09 ± 0.23	0.13 ± 0.11
5	6/9/05	1155	0.7 ± 1.5	0.03 ± 0.05	-0.07 ± 0.23	0.01 ± 0.03	-0.04 ± 0.06	0.01 ± 0.14	-0.02 ± 0.06
6	6/9/05	1400	-0.5 ± 1.5	0.01 ± 0.03	-0.11 ± 0.24	0.02 ± 0.03	-0.01 ± 0.05	-0.09 ± 0.10	0.01 ± 0.04
7	7/11/05	1005	-0.9 ± 1.4	0.00 ± 0.04	-0.04 ± 0.21	0.07 ± 0.06	0.00 ± 0.07	-0.01 ± 0.16	-0.02 ± 0.04
8	7/11/05	1100	-0.5 ± 1.5	0.00 ± 0.03	-0.17 ± 0.22	0.01 ± 0.03	0.05 ± 0.06	-0.02 ± 0.13	0.03 ± 0.04
9	7/11/05	1100	-0.4 ± 1.5	0.05 ± 0.04	-0.16 ± 0.19	0.01 ± 0.02	-0.03 ± 0.05	0.02 ± 0.12	0.01 ± 0.04
10	4/7/05	1350	3.1 ± 1.5	0.00 ± 0.04	-0.20 ± 0.21	-0.04 ± 0.04	0.01 ± 0.08	0.11 ± 0.17	-0.02 ± 0.06
11	4/7/05	1110	4.2 ± 1.6	-0.07 ± 0.07	-0.01 ± 0.23	-0.03 ± 0.07	-0.01 ± 0.15	-0.27 ± 0.40	0.05 ± 0.11

^aSample collection date and time provided by CYAPCO.^bUncertainties represent the 95% confidence level, based on total propagated uncertainties.^cZero values due to rounding.