

ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

January 4, 2005

Mr. Christopher Martin
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

SUBJECT: ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED NOVEMBER 2, 2004 FROM BIG ROCK POINT NUCLEAR POWER STATION, CHARLEVOIX, MICHIGAN [INSPECTION REPORT NO. 05000155/2004-003](RFTA NO. 05-001)

Dear Mr. Martin:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) received two soil samples on November 15, 2004 that were collected at Big Rock Point Nuclear Power Station. The samples were analyzed by gamma spectroscopy (Procedure CP1, Revision 14) and for tritium by liquid scintillation analysis (Procedure AP6, Revision 14 and Procedure CP4, Revision 3). The gamma spectroscopy and tritium results are presented in Tables 1 and 2, respectively.

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

We apologize for the delay in getting this letter report to you in a timely fashion. We experienced several problems with the equipment and counting instrumentation that are used in the analysis of tritium that were beyond our control.

If you have any questions, please call me at (865) 241-3242 or Wade Ivey at (865) 576-9184.

Sincerely,

Dale Condra
Dale Condra
Laboratory Manager
Environmental Survey and
Site Assessment Program

RDC:WPI:ar

Enclosure

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ORISE TABLE 1

SELECTED GAMMA EMITTING RADIONUCLIDE CONCENTRATIONS
 IN SOIL SAMPLES
 BY GAMMA SPECTROSCOPY
 CP1, REVISION 14
 BIG ROCK POINT
 CHARLEVOIX, MICHIGAN

ESSAP Sample ID	NRC Region III Sample ID	Radionuclide Concentrations ^a (pCi/g dry weight)					
		Mn-54	Co-60	Cs-137	Eu-152	Eu-154	Eu-155
1640S0001	#7	0.00 ^b ± 0.01 ^c	-0.01 ± 0.02	0.01 ± 0.02	0.02 ± 0.03	0.05 ± 0.07	0.03 ± 0.04
1640S0002	#8	-0.01 ± 0.01	0.00 ± 0.02	0.00 ± 0.01	-0.02 ± 0.03	0.01 ± 0.07	0.00 ± 0.03

^aThe average MDC for a one hour count of soil in a 0.5L Marinelli for Mn-54 is 0.02 pCi/g, for Co-60 is 0.03 pCi/g, for Cs-137 is 0.03 pCi/g, for Eu-152 is 0.05 pCi/g, for Eu-154 is 0.12 pCi/g, and for Eu-155 is 0.03 pCi/g.

^bZero values are due to rounding.

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

ORISE TABLE 2

TRITIUM CONCENTRATIONS
IN SOIL SAMPLES
BY LIQUID SCINTILLATION ANALYSIS
AP6, REVISION 14; CP4, REVISION 3
BIG ROCK POINT
CHARLEVOIX, MICHIGAN

ESSAP Sample ID	NRC Region III Sample ID	Tritium Concentrations ^a (pCi/g wet weight)
1640S0001	#7	-2.9 ± 3.9 ^b
1640S0002	#8	-0.6 ± 3.5

^aThe average MDC for a one hour count for tritium is 6.4 pCi/g.

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