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July 2, 2013

Mr. John Nicholson  
U. S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

**SUBJECT: ORISE CONTRACT NO. DE-AC05-06OR23100  
LETTER REPORT FOR ANALYTICAL RESULTS FOR ONE SOIL SAMPLE  
FROM ABB, INC., WINDSOR, CONNECTICUT  
[DOCKET NO. 030-037541] (RFTA NO. 13-001)  
DCN: 2016-LR-18-0**

Dear Mr. Nicholson:

Oak Ridge Associated Universities (ORAU), working under the Oak Ridge Institute for Science and Education (ORISE) contract, received one soil sample on June 13, 2013 from ABB, Inc. in Windsor, Connecticut. The sample was analyzed according to the NRC Form 303 supplied with the samples. The sample identification number is presented in Table 1 and the gamma spectroscopy results for the requested radionuclides are provided in Table 2. The requested detection limit of 0.1 pCi/g for thorium-232 (Th-232) and radium-226 (Ra-226) was not met. The detection limits for Th-232 and Ra-226 were 0.18 pCi/g and 0.14 pCi/g, respectively. The Th-232 and Ra-226 concentrations were statistically positive above the requested detection limits for the sample, but it was determined that a longer sample count time to further reduce the detection limits was not necessary. The formula used to calculate total uranium is shown as a footnote in Table 2. The pertinent procedure reference is included with the data table.

ORAU's Quality Control (QC) requirements were met for this analysis. The QC files are available for your review upon request.

My contact information is listed below. You may also contact Forrest Smith at 865.574.9802 with any questions or comments.

Sincerely,

*Wade P. Ivey*  
Wade Ivey, Manager  
Laboratory

WPI:bj

Enclosures

c: T. Carter, NRC/FSME/DWMEP T-8F5  
S. Nesmith, NRC/FSME/PBPA/TWFN 8A23

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Distribution approval and concurrence:	Initials
Technical Review	<i>TJW</i>
Quality Review	<i>YB</i>

579789  
NMSS/RGN1 MATERIALS-002

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**TABLE 1**  
**SAMPLE IDENTIFICATIONS**  
**AND COLLECTION INFORMATION**  
**ABB, INC.**  
**WINDSOR, CONNECTICUT**

<b>ORISE Sample ID</b>	<b>NRC Sample ID</b>	<b>Collection Date</b>	<b>Collection Time</b>
2016S0329	ABB-13-1-1	6/12/2013	13:20

**TABLE 2**  
**CONCENTRATIONS OF SELECTED GAMMA EMITTERS**  
**IN SOIL SAMPLES**  
**BY GAMMA SPECTROSCOPY CP1, REVISION 17**  
**ABB, INC.**  
**WINDSOR, CONNECTICUT**

ORISE Sample ID	NRC Sample ID	Radionuclide Concentrations, TPU <sup>a</sup> , and MDCs <sup>b</sup> (pCi/g)					
		Th-232 by Ac-228	Ra-226 by Pb-214	Co-60	U-238 by Th-234	U-235	Total U <sup>c</sup>
2016S0329	ABB-13-1-1	0.33 ± 0.11 , 0.18	0.25 ± 0.07 , 0.14	0.00 <sup>d</sup> ± 0.02 , 0.05	2.46 ± 0.59 , 1.20	0.20 ± 0.12 , 0.28	5.1 ± 1.2

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

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

<sup>c</sup>Total uranium is calculated using U-238\*2 + U-235 for natural uranium.

<sup>d</sup>Zero values are due to rounding or sample and background having equal counts.