

**From:** "Alice Carson" <acarson1967@comcast.net>  
**To:** "Thomas Youngblood" <THY@nrc.gov>, "John Hickman" <JBH@nrc.gov>  
**Date:** 03/22/2007 4:48:35 PM  
**Subject:** Response to March 19 RAI

Tom and John,

Attached is Yankee's response to Tom's question from Monday. If you have further questions or wish to discuss, please give me a call.

Alice Carson  
301-916-3995

**CC:** "Joe Bourassa" <Bourassa@CYAPCO.com>, "Gerard P. Van Noordennen" <VanNoordennen@CYAPCO.com>, <erickson@yankeerowe.com>, "Greg Babineau" <Babineau@yankeerowe.com>

**Mail Envelope Properties** (4602EB91.80A : 17 : 51210)

**Subject:** Response to March 19 RAI  
**Creation Date** 03/22/2007 4:48:01 PM  
**From:** "Alice Carson" <[acarson1967@comcast.net](mailto:acarson1967@comcast.net)>

**Created By:** [acarson1967@comcast.net](mailto:acarson1967@comcast.net)

**Recipients**

nrc.gov

OWGWPO04.HQGWDO01  
 JBH (John Hickman)

nrc.gov

TWGWPO04.HQGWDO01  
 THY (Thomas Youngblood)

yankeerowe.com

Babineau CC ('Greg Babineau')  
 erickson CC

CYAPCO.com

VanNoordennen CC ('Gerard P. Van Noordennen')  
 Bourassa CC ('Joe Bourassa')

**Post Office**

OWGWPO04.HQGWDO01  
 TWGWPO04.HQGWDO01

**Route**

nrc.gov  
 nrc.gov  
 yankeerowe.com  
 CYAPCO.com

<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	178	03/22/2007 4:48:01 PM
Response to RAI dated 3-19.pdf		9963
Mime.822	15714	

**Options**

**Expiration Date:** None  
**Priority:** Standard  
**ReplyRequested:** No  
**Return Notification:** None

**Concealed Subject:** No  
**Security:** Standard

**Junk Mail Handling Evaluation Results**

Message is eligible for Junk Mail handling

This message was not classified as Junk Mail

**Junk Mail settings when this message was delivered**

Junk Mail handling disabled by User

Junk Mail handling disabled by Administrator

Junk List is not enabled

Junk Mail using personal address books is not enabled

Block List is not enabled

**RAI Regarding OOL-01-06  
Email Youngblood to Carson dated March 19, 2007**

**Comment:** I have a question about the sample data in survey unit OOL-01-06 that I did not "see" to ask about before. The survey unit has one sample at 2.68 SOF and the sampling was done on a 25-square meter systematic grid. Could you share the SOF data for each of the radionuclides of concern in this survey unit.

I ask because if the activity is predominantly Co-60, which has an area factor = 1.8 for the grid size, then have you exceeded the DCGL-EMC? I see that you used the WRS test for evaluating the entire data set, but did that address all the questions about sample number OOL-01-06-010-F-SD?

**Yankee Response:**

The table below provides the activity and the fraction of the DCGL for each of the four radionuclides used in the elevated measurement calculation:

Nuclide	Activity (pCi/g)	DCGL(pCi/g)	Fraction of DCGL <sub>w</sub>
Co-60	1.29	1.6	0.80
Cs-137	1.31	3.4	0.38
Sr-90	0.90	0.7	1.28
C-14	0.54	2.2	0.25
Total SOF			2.71

The differences in the SOF above and the SOF in the FSS report (2.68) can be attributed to the number of significant figures used in determining the SOF.

The equation used for calculating the  $f(\text{DCGL}_{\text{EMC}})$  is:

$$\frac{C_1}{\text{DCGL}_1 \times (\text{AreaFactor}_1)} + \frac{C_2}{\text{DCGL}_2 \times (\text{AreaFactor}_2)} \dots \frac{C_n}{\text{DCGL}_n \times (\text{AreaFactor}_n)}$$

Plugging in the values from the table above for the concentration and the 10 mrem/yr DCGLs and using the radionuclide-specific area factors for 25 m<sup>2</sup> from LTP Appendix 6Q:

$$\frac{1.29}{1.6 \times 1.8} + \frac{1.31}{3.4 \times 3.7} + \frac{0.90}{0.7 \times 54} + \frac{0.54}{2.2 \times 860} = 0.57$$

Other radionuclides were identified above the Critical Level but were below the MDA, therefore contributing very little to the overall fraction. As can be seen by the above values, Sr-90 was the predominant radionuclide.