From: "David Durkee" <radcor@sbcglobal.net>
To: "'Todd Jackson'" <TJJ@nrc.gov>
Date: Mon, Mar 12, 2007 4:01 PM
Subject: RE: Alpha Q status update

STB-1504
04008940

Hi Todd,

I was waiting to hear from you regarding the email I sent on January 30th. I have included the information from the email below in case you did not receive it.

David

From: David Durkee [mailto:radcor@sbcglobal.net]
Sent: Tuesday, January 30, 2007 7:20 PM
To: 'tjj@nrc.gov'
Subject: Alpha Q Decommissioning

Hi Todd,

Thanks for taking a look at this for me. In looking at the information again this afternoon I may have discovered a flaw in my calculations and my logic in the letter I sent to you dated 2/27/06. Let me explain:

As stated before, the limit for Th-232 is 6.03 dpm/100 cm2. Based upon our previous discussions, when you account for the liquid scintillation counter's (LSC's) ability to detect the daughters, a level of 6.03 dpm/100 cm2 of Th-232 would equal 60 dpm/100 cm2. Therefore, since the calculated MDC for the LSC analysis was 31 dpm/100 cm2 , the level of Th-232 must be below 3.12 dpm/100 cm2. Therefore, the analysis performed shows compliance with the limit of 6.03 dpm/100 cm2. (I ran Th-232+C, at a level of 5.0 dpm/100 cm2 , changing loose fraction to 100% and obtained a dose of 20.8 mrem.) If I am not looking at this right please let me know.

Unless, instead of using Th-232+C we should have been using the limit for Th-232 of 7.31 dpm/100 cm2. This would equate to 73 dpm/100 cm2 on an LSC. If then we have to be at 10% of this level for loose, I would have to be able to see down to 7.3 dpm/100 cm2 on an LSC. This would mean that I would have to obtain new samples for analysis. If this is the case, I would propose obtaining 50 samples. I based this upon the following:

DCGL = 8.12 cpm (at 90% effic)

LBGR = 4.06 cpm

136636

Standard deviation = 5.57

Relative shift = 8.12-4.06/5.57 = 0.73

Using Table 5.5 in MARSSIM, and assuming $\alpha = 0.05$ and $\beta = 0.05$, I would propose obtaining and analyzing 50 additional samples. I would propose counting these samples (and background) for

I would then propose counting the samples for 35 minutes each. Assuming a background of 30 cpm, efficiency of 90%, the MDA would be:

MDA = [2.71 + 3.29*(Rb)(t)] * (t)(E)

MDA = [2.71 + 3.29*(30 cpm)(35 min.)] * (35 min.)(0.9)

MDA = 4.87 dpm/100 cm2

I am assuming that we are all set regarding the fixed activity measurement. I will reference the letter submitted 2/27/06.

As far as the paint issue, I do not believe that there could be any licensed radioactive material under the paint. The material we are talking about is <4% by weight (almost all used over the years was < 2% by weight) in metal, so any contamination would have been in the form of metal filings and turnings. The licensee states that radiological surveys performed by them over the years never showed any detectable contamination. In addition, the process used to coat the floors would have ensured that any residual filings would have been removed prior to the resurfacing of the floor. I have provided description of the process performed by Industrial Concrete Services of Portland Maine for your review.

Work Performed at Alpha Q:

- Mechanically scrubbed the floor to remove dirt, oil, and debris;

- Hand ground bare areas of concrete with Metabo diamond grinding tool;

- Prekote areas with Tennant 4010 etching compound to clean out concrete bleeder pours by dislodging calcium, dust and debris after the preparation process. This opened the concrete matrix allowing for the coating to bond with the floor;

- Applied Evo-FSE 100% solids self leveling epoxy primer at approx. 5-7 mils to bare areas. Allowed to cure;

- Buffed entire floor to create proper bonding profile for HTS, and track mop;

- Mechanically scrubbed the entire area with a clean and rinse;

- Checked floor for moisture; and then

- Applied Eco-HTS topcoat in a Canada Grey finish at approximately 5-7 mils.

Well, this should get us started. :-) Thanks again for your assistance with this.

David

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From: Todd Jackson [mailto:TJJ@nrc.gov]
Sent: Monday, March 12, 2007 3:53 PM
To: David Durkee
Subject: Alpha Q status update

David,

Following up on our recent phone conversations, can you give me an update on the planning for Alpha Q?

Thanks,

Todd

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Subject:	RE: Alpha Q status update
Creation Date	Mon, Mar 12, 2007 4:01 PM
From:	"David Durkee" <radcor@sbcglobal.net>
Created By:	radcor@sbcglobal.net

Recipients
nrc.gov
kp1_po.KP_DO
TJJ (Todd Jackson)

Post Office	**Route**
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Files	**Size**	**Date & Time**
MESSAGE	4563	Monday, March 12, 2007 4:01 PM
TEXT.htm	26179	
Mime.822	35112	

Options

Expiration Date:	None
Priority:	Standard
ReplyRequested:	No
Return Notification:	None
Concealed Subject:	No
Security:	Standard

Junk Mail Handling Evaluation Results
Sender: radcor@sbcglobal.net
Message is eligible for Junk Mail handling
This message was not classified as Junk Mail
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Junk Mail settings when this message was delivered
Junk List is enabled
Junk Mail using personal address books is not enabled
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