From:	Slama, Chuck
To:	"achowdhury@swri.org"
Cc:	"Raddatz, Michael"; Knowles, Timothy
Subject:	RE: Follow-up to RAI B(1)
Date:	Monday, December 30, 2013 1:35:43 PM

Gentlemen,

I apologize for delay in submitting this response. Please see below. An RSCS CHP will be at the UUSA facility next week and available to discuss this further, with the UUSA RPM, should it be necessary.

> NRC RAI question "Provide the maximum organ dose for the effective dose equivalent result of 19 mrem/yr due to direct radiation from uranium by-product cylinder storage pad expansion or provide organ doses at the site boundary to demonstrate that exposure will not exceed the 40 CFR 190.10(a) dose standard of 25 millirems to any organ other than the thyroid."
>
> After consultation with Certified Health Physicists (CHPs) employed by Radiation Safety and Control Services (RSCS); the CHPs and URENCO USA feel that the DDE is an acceptable method for calculating the effective dose in accordance with 40 CFR 190, and not applying the EDEX methodology to the license application. Using DDE provides a conservative estimation of both the whole body dose and the organ dose in this situation. Since the 19 mrem is measured at the boundary fence and the individual (whole body or critical organ exposure) is receiving less than this exposure regardless of body placement, under no circumstance can they receive greater than the 19 mrem DDE measured at the fence.
>
> ICRP 74 provides the mathematical approach to calculating organ doses from an original fluence by energy group model. ICRP 60 provided the original concept description for weighting factors. Within ANSI N13.41, finds normal list of weighting factors per organ. Thus, the organ dose is mathematically a function of (1) the energy grouped fluence at a receptor, (2) the incident direction of the photons, (3) the organ of entrance, and (4) the absorbed dose to effective dose conversion as a function of organ and energy. Therefore, since the bone is the critical organ, calculating organ dose would not effect our compliance with 40 CFR 190.

Regards,

Charles (Chuck) James Slama
Licensing Project Manager

URENCO USA
P.O. BOX 1789
Eunice, NM 88231

Tel: +1 575 394 5788
Mob: +1 505 975 3870
Email: Chuck.Slama@URENCO.com
Web: www.urenco.com

From: Slama, Chuck
Sent: Friday, December 06, 2013 9:31 AM
To: 'achowdhury@swri.org'
Cc: 'Raddatz, Michael'; Knowles, Timothy
Subject: Follow-up to RAI B(1)

Asad,

As discussed this morning, the UUSA Radiation Protection Manager will be working to answer the organ dose question. He is get copies of the pertinent ICRP documents. He will be on vacation until Dec 18th. He expects he will have an answer no later than Dec 23rd.

Regards,

Charles (Chuck) James Slama
Licensing Project Manager

URENCO USA
P.O. BOX 1789
Eunice, NM 88231

Tel: +1 575 394 5788
Mob: +1 505 975 3870
Email: Chuck.Slama@URENCO.com
Web: www.urenco.com