

Allen, William

From: Allen, William
Sent: Thursday, January 23, 2014 11:24 PM
To: Sarah Bryson
Subject: HS Package Information Request
Attachments: Safkeg Questions.pdf

Attached are questions which were developed based upon your most recent SAR submittal and vibration test results.

Please let me know if you would like to have a teleconference on the attached information request, and if so, your availability.

Chris

1. The gamma dose rates attributed to the parent nuclide (i.e., nuclide in list of proposed contents) in SAR Chapter 5 Tables 10 and 11 should include the gamma dose rate contribution from all the daughters whether the daughters emit only gammas or both gammas and betas. Do they?
2. Justify the absence of beta and gamma contributions from Tl-210 for Ra-226 in the SAR Chapter 5 Tables 10 and 11. Staff believes these should be accounted for and added. If modified results for Ra-226 that account for the Tl-210 will be provided, submission by e-mail is sufficient.
3. Explain/clarify how the calculation of Watt/Curie is done and why the results for many of the proposed contents are different from the 2nd RAI response submittal results.
4. Confirm that the correct Ir-194 isotope is used in the shielding analyses. NRC had asked about this in a previous phone call, and Croft committed to investigate this; however, no explanation or follow-up was provided by Croft in the latest supplement to explain why the chosen Ir-194 isotope is the correct one to use.
5. Provide the source for the TBq/g information for Tb-161 and Kr-79. These two nuclides are not included in the Appendix A tables of Part 71, 49 CFR 173 or IAEA's SSR-6.
6. Justify the Important to Safety categories assigned to packaging components, particularly the items relied upon for shielding: the depleted uranium, the shielding inserts, steel for the CV and keg, etc.
7. The vibration test report refers to manufacturing drawings. Do the specifications for the packaging used in the vibration test meet the CoC drawings for the keg, all the cork, the CV, and the inserts?
8. Staff finds the pass/fail criterion for the shielding acceptance test unclear. Based upon previous discussions and information provided, staff believes the following safety analysis report (SAR) text, taken from the 2nd sentence of the 2nd paragraph in Section 8.1.6. with bolded text added by staff, correctly identifies the shielding test acceptance criteria:

“The measured dose rates are compared to the dose rates **calculated for the surface of the containment vessel lid and body with the** minimum dimensions and the minimum density of the DU and stainless steel, as well as the chemical composition, specified in the CoC drawings.”

If so, staff suggests revising the SAR accordingly.

9. Many of the proposed nuclide limits in the SAR, particularly for the lighter tungsten insert, increased by a factor of two without a basis being given. Therefore, to facilitate issuing the original certificate of compliance, staff will calculate the nuclide limits using the logic provided to date. Changes to the nuclide limits will be allowed in future revisions of the certificate of compliance.