Allen, William

From: Mike Rose <MikeR@ir100.com>
Sent: Monday, August 17, 2015 1:27 PM
To: Allen, William
Cc: Mike Rose
Subject: [External_Sender] RE: RE: Op-100 Shielding Questions

Mr. Allen,

- **OP-100 SAR:** Table 5-1 reports the maximum measured radiation levels for the CTUs that contained **EITHER** a IR-50 or IR-100 payload, measured from the source exit port end. All measurements were obtained on the IR-50 or IR-100 test units outside of the OP-100 drum (additional conservatism). The strengths of the source were 110 Ci (pre-test) and 83 Ci (post-test). The reported pre-test surface and 1-m values are for CTU-1, which was a IR-50 package. The reported post-test 1-m value is for CTU-4, which was also a IR-50 package. All reported values were measured from the source exit port end, which has the minimum shielding from the source capsule. The "1" in the "Measured[1] mrem/hr (mSv/hr" column is missing, and should state were the measurements were taken, i.e., "Measured from the source exit port end").
- **IR-100 SAR:** The reported values in Table 5-1 are only for the IR-100 package only, so no direct comparison to the reported measured values for the OP-100 with the IR-50 test units can be made. For added conservatism, the NCT values are reported for the HAC post-test test units, as noted in Note 1 of Table 5-1. The source strength for the IR-100 package was 108 Ci. I could not locate the test report for the IR-100 CTUs, so I could not review the pre- and post-test data sheets.

If you have any questions or concerns please do not hesitate to contact me at the information below.

Regards,

Mike Rose
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From: Allen, William [mailto:William.Allen@nrc.gov]
Sent: Sunday, August 16, 2015 6:45 PM
To: Mike Rose
Subject: RE: RE: Op-100 Shielding Questions

The question wasn't about the dose rate date in the IR-100 SAR. The question was about the dose rate data in the OP-100 SAR.

The dose rates presented in Table 5-1 for the OP-100 SAR are greater than the dose rates presented in Table 5-1 for the IR-100 SAR. Any shielding reviewer will tell you that fact does not make sense because your source (the IR-100) is the same, but the detector is farther from the source for the OP-100.

The shielding reviewer was hoping that someone could explain this inconsistency. Let me know on Monday if things are still confusing, and I'll give you a call.

Chris

From: Mike Rose [mailto:MikeR@ir100.com]
Sent: Friday, August 14, 2015 5:10 PM
To: Allen, William
Subject: [External_Sender] RE: Op-100 Shielding Questions

Mr. Williams,

Question (1) Are the dose rate data presented in the SAR, page 79, the measurements outside the IR-100 (the content, which is the radiography device) or OP-100 (the packaging)?

Answer : There is no dose data present in the SAR on page 79 for the IR100 there is a reference to the max payload.

1. Question (2) The dose rates presented in Table 5-1 of the OP-100 package SAR are inconsistent with the results of the IR-100 measurement results [Ref. SAR of IR-100, NRC Docket No. 71-9157).

   Answer: There is no dose data present in the SAR on page 79 for the IR100 there is a reference to the max payload.

If you have any questions or concerns please do not hesitate to contact me at the information below.

Regards,

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From: Allen, William [mailto:William.Allen@nrc.gov]
Sent: Friday, August 14, 2015 1:25 PM
To: Mike Rose
Subject: Op-100 Shielding Questions

Can you address the questions below raised by the shielding reviewer? Thanks, Chris Allen

1. Are the dose rate data presented in the SAR, page 79, the measurements outside the IR-100 (the content, which is the radiography device) or OP-100 (the packaging)?
2. The dose rates presented in Table 5-1 of the OP-100 package SAR are inconsistent with the results of the IR-100 measurement results [Ref. SAR of IR-100, NRC Docket No. 71-9157).