

December 23, 2010

MEMORANDUM TO: Doug Weaver, Deputy Director
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

FROM: Chris Staab, Project Manager **/RA/**
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

SUBJECT: SUMMARY OF DECEMBER 9, 2010, MEETING WITH THE
DEPARTMENT OF ENERGY AND WASHINGTON TRU SOLUTIONS

Background. On December 9, 2010, the NRC held a meeting with the Department of Energy (DOE) and Washington TRU Solutions (WTS) to provide clarification regarding a Request for Supplemental Information (RSI) pertaining to a proposed amendment to the RH-TRU 72B Certificate of Compliance. No regulatory decisions were made at the meeting. Enclosure 1 is the list of meeting attendees. Enclosure 2 is the agenda. Enclosure 3 is the presentation materials.

Discussion. The following three RSI(s) were discussed:

Thermal RSI: Update the NS15 and NS30 thermal analyses presented in the Safety Analysis Report (SAR) to reflect the recently provided Normal Conditions of Transport (NCT) and Hypothetical Accident Conditions (HAC) thermal analyses. The response from the Request for Additional Information (RAI) teleconference (9/27/10) provided three shielded NS15/NS30 thermal analyses that do not use bulk spatial and temporal-averaged insolation boundary conditions. As a result of the analyses, the applicant mentions that the RH-TRU 72-B SAR design decay heat limit will be changed from 300 W to 50 W per canister. In addition, the new modeling methodology and the higher temperatures of the components found as a result of the updated NS15 and NS30 analyses should be incorporated in the appropriate sections of the SAR, such as Appendix 5.1 of the RH-TRU Payload Appendices. This information is requested by staff to determine compliance with 10 CFR 71.71 and 71.73.

Shielding RSI-1: Provide an analysis of the effect of lead slump on the HAC dose rates. The applicant provided some discussion on this subject, indicating that slumping will not occur. However, staff does not find the basis for this conclusion to be applicable. Thus, a shielding analysis should be provided for lead slump, as predicted using the method in the "Cask Designers Guide" document. The analysis should also account for any void between the top of the lead shielding and the outer cask top flange resulting from package fabrication. The analysis should account for the assumed 2% of the source escaping the canister's neutron shield insert and lodging as close to the slump area as allowed by the package HAC configuration. The remainder of the source should likewise be positioned as near as possible to the slump zone while remaining within the canister's neutron shield insert. Using analyses for a

few radionuclide contents (e.g., Co-60), the applicant may demonstrate that the dose rates for the puncture HAC configuration bound those for the lead slump configuration. This information is needed to confirm compliance with 10 CFR 71.51 and 71.73.

Shielding RSI-2: Provide sufficient detail regarding the pre-shipment dose rate measurements and results of previous measurements to demonstrate the acceptability of this method for use to meet the requirements of 10 CFR 71.35(a) and 71.47. Per 10 CFR 71.35(a), an application for a Part 71 Certificate of Compliance (CoC) must include a demonstration that the package containing the proposed contents at the proposed quantity limits satisfies, among other things, the requirements in 10 CFR 71.47. The current amendment application seeks to use pre-shipment dose rate measurements to meet this requirement. While pre-shipment measurements are normally not accepted as fulfilling this requirement, they may be found acceptable in the current case with certain additional conditions. Package operations descriptions in Chapter 7, "Package Operations," of the SAR should be modified to incorporate these conditions. In addition to the measurement descriptions currently provided by the applicant, descriptions should be included that explicitly state that the neutron and gamma dose rate measurements are performed on the package surface and at 2 meters from the package surface. A statement should be added that clearly states both gamma and neutron dose rate measurements are always performed and they are done with appropriate instruments of appropriate/adequate dose rate ranges. The descriptions should also include a grid is established for the entire package surface with squares no larger than a few inches (4 inches for example) on a side, with measurements taken at every grid location. Similarly, a description of how the 2-meter dose rate measurements are comprehensive is also needed. To justify the use of measurements in this case, the applicant should provide the results of representative cases from the measurements performed on previous shipments. This information is needed to confirm compliance with 10 CFR 71.35(a) and 71.47.

Next Steps:

Thermal RSI: Textual descriptions regarding analysis conclusions will be provided in the SAR regarding the proposed new canisters to resolve the RSI in the short term. Comprehensive analysis and conclusions will be provided in the SAR during the renewal request for all canisters.

Shielding RSI-1: Detailed discussions and a justification for the Cask Designer's Handbook formula will be provided in the SAR to resolve the RSI in the short term. The applicant will provide a detailed analysis in the SAR during the renewal request.

Shielding RSI-2: Adequate detailed methodology and comprehensive data regarding pre-shipment dose rate measurements will be provided in the SAR to resolve the RSI in the short term. The applicant will provide a detailed analysis during the renewal request.

The applicant will respond to the RSI(s) by January 17, 2011.

TAC No. L24419

Enclosures: 1. Attendees
 2. Agenda
 3. Presentation Materials

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Shielding RSI-2: Provide sufficient detail regarding the pre-shipment dose rate measurements and results of previous measurements to demonstrate the acceptability of this method for use to meet the requirements of 10 CFR 71.35(a) and 71.47. Per 10 CFR 71.35(a), an application for a Part 71 Certificate of Compliance (CoC) must include a demonstration that the package containing the proposed contents at the proposed quantity limits satisfies, among other things, the requirements in 10 CFR 71.47. The current amendment application seeks to use pre-shipment dose rate measurements to meet this requirement. While pre-shipment measurements are normally not accepted as fulfilling this requirement, they may be found acceptable in the current case with certain additional conditions. Package operations descriptions in Chapter 7, "Package Operations," of the SAR should be modified to incorporate these conditions. In addition to the measurement descriptions currently provided by the applicant, descriptions should be included that explicitly state that the neutron and gamma dose rate measurements are performed on the package surface and at 2 meters from the package surface. A statement should be added that clearly states both gamma and neutron dose rate measurements are always performed and they are done with appropriate instruments of appropriate/adequate dose rate ranges. The descriptions should also include a grid is established for the entire package surface with squares no larger than a few inches (4 inches for example) on a side, with measurements taken at every grid location. Similarly, a description of how the 2-meter dose rate measurements are comprehensive is also needed. To justify the use of measurements in this case, the applicant should provide the results of representative cases from the measurements performed on previous shipments. This information is needed to confirm compliance with 10 CFR 71.35(a) and 71.47.

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**Meeting Attendees on December 9, 2009
Between Nuclear Regulatory Commission,
Department Of Energy, and Washington TRU Solutions
Regarding RH-TRU 72B Amendment Application**

Neil Day	Nuclear Regulatory Commission (NRC)
Meraj Rahmi	NRC
Mike Call	NRC
Joe Borowsky	NRC
Chris Staab	NRC
David Haar	Washington TRU Solutions (WTS)
Robert Johnson	WTS
Brad Day	WTS
Todd Sellmer	WTS
Mike Brown	Department of Energy (DOE)
James Rhoades	DOE

Agenda
Meeting between Department of Energy,
Washington TRU Solutions, and Nuclear Regulatory Commission
December 9, 2010

- 15 min Introductions and Overview
- 45 min Discussion of Thermal RSI-1
- 45 min Discussion of Shielding RSI-1
- 60 min Discussion of Shielding RSI-2
- 10 min Discussion of the RSIs in the context of prior NRC packaging
 amendment approvals
- 5 min Final Remarks and Adjourn