

April 1, 2010

Mr. Todd Sellmer
Packaging Integration
Washington TRU Solutions LLC
P.O. Box 2078
Carlsbad, New Mexico 88221-2078

SUBJECT: APPLICATION FOR REVISION TO CERTIFICATE OF COMPLIANCE NO. 9212
FOR THE MODEL NO. RH-TRU 72-B PACKAGING, DOCKET NO. 71-9212 –
SUPPLEMENTAL INFORMATION NEEDED

Dear Mr. Sellmer:

By letter dated February 12, 2010, you submitted an application for revision to Certificate of Compliance (CoC) No. 9212 for the Model No. RH-TRU 72-B packaging. The application proposes to add two new payload canisters which incorporate neutron shields. NRC staff performed an acceptance review of your application to determine if the application contains sufficient technical information in scope and depth to allow the staff to complete the detailed technical review.

This letter is to advise you that based on our acceptance review, the application does not contain sufficient technical information. The information needed to continue our review is described in the enclosure to this letter as Requests for Supplemental Information (RSIs). NRC staff included observations to allow you to start earlier on items containing the potential to be asked at a later date. Responses to observations are not required for staff to begin a detailed technical review. Observations are not the result of a detailed technical review and may be resolved once staff begins a detailed review. In order to schedule our technical review, the RSI responses should be provided by April 16, 2010. If the RSI responses are not received by this date, the application may not be accepted for review. This letter confirms our phone call on April 1, 2010, with respect to the supplemental information needed and the projected date for your submittal on April 16, 2010. If you have any questions regarding this matter, please contact Chris Staab of my staff at (301) 492 - 3321 or me at (301) 492 - 3294.

Sincerely,

/RA/

Eric Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material
Safety and Safeguards

Docket No. 71-9212

Enclosure: Request for Supplemental Information
and Observations

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WASHINGTON TRU SOLUTIONS LLC

DOCKET NO. 71-9212

REQUESTS FOR SUPPLEMENTAL INFORMATION (RSI) AND OBSERVATIONS

RELATED TO THE PROPOSED RH-TRU 72-B AMENDMENT

Structural

RSI-1: Provide justification for the continued applicability and the use of computer codes CASKDROP, SCANS, and SLAPDOWN. Also provide discussions of deviations from the guidelines delineated in ISG-21 "Use of Computational Modeling Software."

The applicant has used computer codes CASKDROP, SCANS, and SLAPDOWN, to demonstrate the adequacy of the impact limiters of the package during the regulatory drop evaluations under NCT and HAC of transportation. The applicant has not justified deviations from staff's guidance provided in ISG-21. Include in the explanations why more accurate and current computer codes, such as LS-DYNA, was not used to demonstrate the adequacy of the impact limiters of the package during the regulatory drop evaluations under NCT and HAC of transportation.

This information is required by the staff to verify the compliance with 10 CFR 71.71 and 10 CFR 71.73 regulations.

RSI-2: Provide reference JSP-7953-01, Revision 1, August 2009, and describe the applicability of the reference to the information contained in Chapter 2 of the SAR

JSP-7953-01 has been referenced at various places throughout Chapter 2 of the SAR.

This information is required by the staff to verify compliance with 10 CFR 71.31.

Thermal

RSI-1: Provide justification that the neutron-emitting RH waste does not generate pressures beyond the maximum allowable pressure.

The neutron-emitting RH waste necessitated the need for the shielded canister design. There was no discussion or analysis that indicated the neutron-emitting RH waste is bounded by the calculation found on pages 3.4-7 and 3.4-8, RH-TRU 72-B SAR, Rev. 5, February 2010.

This information is needed for staff to perform a technical review, per NUREG-1609, Section 3.5.4.2.

RSI-2: Provide the procedures in the SAR that ensure the selection of waste will not generate decay heat and pressures beyond the allowable values.

Procedures are not found in the SAR to ensure that the waste placed within the package will not generate decay heat and pressure beyond the allowable values.

This information is needed for staff to perform a technical review, per NUREG-1609, Section 3.5.4.2.

RSI-3: Provide the CDROM containing the SINDA/Thermal Desktop input and output files that are necessary for analysis.

The files listed on page 33 of 52, Thermal Analysis of RH Shielded Canisters in RH-TRU 72-B Cask, Section 7.2, should be provided.

This information is needed for staff to perform a technical review, per NUREG-1609, Section 3.5.3.1.

RSI-4: Provide the heat transfer coefficient calculations that are used in the thermal analyses.

Page 36 of 52, Thermal Analysis of RH Shielded Canisters in RH-TRU 72-B Cask, Section 7.4, states that heat transfer coefficients were not calculated as a function of local conditions. How were the heat transfer coefficients calculated, if not based on local conditions (e.g., local surface temperatures are not known *a priori*)? What is the certainty that the coefficients are conservative? Heat transfer coefficient calculations for the models should be provided (NCT, HAC, etc.).

This information is needed for staff to perform a technical review, per NUREG-1609, Section 3.5.3.1.

RSI-5: Provide the validation reference that shows the validity of using a mixture of lumped-parameter and 'solids' modeling.

A combined 'lumped-parameter' and 'solids' modeling approach is new for this package. Page 39 of 52, Thermal Analysis of RH Shielded Canisters in RH-TRU 72-B Cask, Section 7.5, indicates that an evaluation was conducted on the NS15 and NS30 shielded insert containers. This reference should be provided.

This information is needed for staff to perform a technical review, per NUREG-1609, Section 3.5.3.1.

Observation-1: Per NUREG-1609, the thermal evaluation period of one year is used to calculate Maximum Normal Operating Pressure (MNOP). Provide justifications for using 60 days to calculate MNOP.

Containment

RSI-1: Provide information on the sensitivity and accuracy of the pressure rise test based on the actual volume (not the assumed volume), test pressures, and temperatures over the course of the test.

In regards to pages 7.4.1-1 and 7.4.1-2, Section 7.4.1.1, the sensitivity and accuracy of the pressure rise test should be provided based on the actual volume (not the assumed volume), test pressures, and expected temperatures over the course of the test.

This information is needed for staff to perform a technical review, per NUREG-1609, Section 4.5.5.

Criticality

Observation 1: Table 6.1-2, Case A, should be updated with the numbers from the new analysis of the shielded canisters. The new fissile mass limits should also be included.

Observation 2: The applicant did not discuss the effect of non-fissile neutron emitters in the criticality analysis.

Shielding

RSI-1: Include doses resulting from loads reconfiguring under NCT to the maximum credible extent and a justification of that extent.

Provide similar tables to Tables 5.5.5-1, 5.5.6-1, and 5.5.6-2, in the current revision of the SAR, for the requested amendment. Provide an analysis of NCT and HAC doses for the RH-TRU 72-B with the NS15 and NS30 shielded canisters. Because HAC based limits do not usually bound NCT limits, it is important to ensure that the loads will not reconfigure under NCTs (shaking, speed bumps, potholes, etc.) and result in dose rates higher than allowed under 10 CFR 71.47(b). Include in this analysis a justification, beyond that contained in SAR Section 5.5.3, that neutron emitting isotopes are bounded by the limits in RH-TRAMPAC Table 3.2-2.

This information is needed for staff to proceed with a technical review to confirm that the package design meets 10 CFR 71.47(b).

Observation 1: The SAR should be updated with the new analysis, and a table containing the new HAC activity limits for the various radionuclides should be added.

Observation 2: The density of lead and stainless steel used in the shielding analysis is slightly higher than that from the SCALE Standard Composition Library, but is still within the range of normal lead values. There is a discrepancy in the densities in Table 5.3-1 versus those in Table 5.5.5-2 and 5.5.5-3.

Observation 3: When the mass attenuation coefficients were extracted from ANSI/ANS 6.4.3-1991 they were rounded. The direction of rounding was not always conservative.

Observation 4: The applicant did not discuss the method used to identify "source matrices not bounded by the UO₂ assumption," or if such wastes were actually transported.

Observation 5: Justify using 30% polyethylene and 70% water as a moderator and reflector results in a bounding dose rate from neutron multiplication. No justification was provided that this is a bounding composition.

Observation 6: The applicant's shielding analysis used the point source approximation and did not consider line sources. However, if the extent of the source is large compared to the distance from the detector then the point source approximation can be non-conservative.