

July 19, 2005

Mr. P. C. Gregory, Manager
Packaging Engineering
Washington TRU Solutions, LLC
P.O. Box 2078
Carlsbad, NM 88221-2078

SUBJECT: CERTIFICATES OF COMPLIANCE FOR MODEL NOS. TRUPACT-II AND
HALFPACT PACKAGES

Dear Mr. Gregory:

As requested by your application dated October 4, 2004, as supplemented March 4 and June 8, 2005, enclosed are Certificate of Compliance No. 9218, Revision No. 18, for the Model No. TRUPACT-II package and Certificate of Compliance No. 9279, Revision No. 3, for the Model No. HalfPACT package. These certificates supersede, in their entirety, Certificate of Compliance No. 9218, Revision No. 17, dated August 23, 2004, and Certificate of Compliance No. 9279, Revision No. 2, dated August 23, 2004. These Certificates of Compliance have been issued to the U.S. Department of Energy (DOE) as requested. Changes made to the enclosed certificates are indicated by vertical lines in the margin. The staff's Safety Evaluation Reports are also enclosed.

Those on the attached list have been registered as users of the packages under the general license provisions of 10 CFR 71.17 or 49 CFR 173.471 and these conditions. These approvals constitute the authority and conditions to use these packages for shipment of radioactive material and for the packages to be shipped in accordance with the provisions of 49 CFR 173.471. Registered Users may request by letter to remove their names from the Registered Users List.

P. C. Gregory

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If you have any questions regarding these certificates, please contact me or Meraj Rahimi of my staff at (301) 415-8500.

Sincerely,

/RA/

Michael T. Markley, Acting Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Docket Nos. 71-9218 & 71-9279
TAC Nos. L23774 & L23775

Enclosures: 1. Certificate of Compliance No. 9218, Rev. No. 18
2. Safety Evaluation Report for TRUPACT-II
3. Certificate of Compliance No. 9279, Rev. No. 3
4. Safety Evaluation Report for HalfPACT

cc w/encl: R. Boyle, Department of Transportation
J. M. Shuler, Department of Energy
RAMCERTS
Registered Users

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RAMCERTS
Registered Users

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SAFETY EVALUATION REPORT
Docket No. 71-9218
Model No. TRUPACT-II Package
Certificate of Compliance No. 9218
Revision No. 18

SUMMARY

By application dated October 4, 2004, as supplemented March 4 and June 8, 2005, Washington TRU Solutions, LLC, on behalf of the Department of Energy, requested an amendment to Certificate of Compliance No. 9218, Revision No. 17, for the Model No. TRUPACT-II package. The amendment request included the following changes:

SAFETY ANALYSIS REPORT:

- Changing the revision number from Revision 20 to Revision 21, and the date.

CH-TRAMPAC:

- Changing the revision number from Revision 1 to Revision 2, and the date.
- Revising Page xiv to update the title of Appendix 6.12.
- Revising Section 1.1, Page 1–1 to reflect the revised scope of Appendix 6.12.
- Revising Section 2.2.1, Page 2.2-1 to clarify that empty 55-gallon drums(s) can be used as dunnage container(s) to complete a payload of pipe overpacks.
- Revising Table 3.1-1, Page 3.1-4 to remove Ten-Drum Overpack (TDOP) as authorized payload container for HalfPACT.
- Revising Section 5.0, Page 5.1-1 for referencing Appendix 6.12 of CH-TRU Payload Appendices to which Content Code SQ 154 has been added.
- Revising Section 6.0, Page 6.1-1 for referencing Appendix 6.12 of CH-TRU Payload Appendices to which Content Code SQ 154 has been added.

CH-TRU PAYLOAD APPENDICES:

- Changing the Revision number from Revision 0 to Revision 1 and the date.
- Revising Page ii to update the title of Appendix 6.12.
- Correcting a typographical error in Page 2.2-9 for the resistance factor for the SWB overpack with a filter type of 7.4×10^{-6} moles/second/mole fraction.
- Correcting a typographical error in the equation for Y_{ICL} on Page 3.9-18.
- Correcting typographical errors in Equations (5) and (6) on Page 3.10-3 and Equation (20) on Page 3.10-6.
- Revising Appendix 6.12 to extend the methodology previously approved for CH-TRU waste from Technical Area 54 at Los Alamos National Laboratory (LANL) to the shipment of high-wattage CH-TRU waste from any DOE site.

Based on the statements and representations in the application, the staff agrees that the changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

1. GENERAL INFORMATION

The changes applicable to this section are related only to the contents and drawings.

1.1 Contents

The following paragraphs describe the major changes with respect to the contents of the TRUPACT-II packaging and the staff evaluation of these changes. The editorial and correctional changes made to the Safety Analysis Report (SAR), CH-TRAMPAC, and CH-TRU Payload Appendices by the applicant are not discussed.

CH-TRAMPAC

Most of the changes made to CH-TRAMPAC have been editorial, correctional, and for clarification purposes. The remaining changes were due to adding the reference to CH-TRU Payload Appendix 6.12 for content codes SQ 154 in specifying the compliance with the gas generation requirements.

The staff agrees with the editorial, correctional, and clarifying changes made to CH-TRAMPAC. Furthermore, the staff agrees with changes made to CH-TRAMPAC in order to reference CH-TRU Payload Appendix 6.12 for content codes SQ 154 compliance with the gas generation requirements.

CH-TRU Payload Appendices, Revision No. 1, Appendix 6.12

The proposed amendment extends the use of the methodology described in CH-TRU Payload Appendix 6.12 for the shipment of high-wattage CH-TRU waste to other DOE sites whose waste can be classified under Content Code SQ 154. Previously, only waste generated at the Los Alamos National Laboratory and classified as Content Code LA 154 could be shipped under these specific conditions and controls. The payload containers and packaging configurations for Content Codes LA 154 and SQ 154 are provided in Section 6.12.10 of the CH-TRU Payload Appendices, Appendix 6.12.

Based on operational experience at LANL with the evacuation process, the limits for content code LA 154 have been reevaluated, assuming a final evacuation pressure of 2 torr. Previously, a final pressure of 50 mtorr was considered. As a consequence, the flammable gas generation rate and decay heat limits for content code LA 154 have been reduced. Due to the geographical proximity between LANL and the WIPP site, a 5-days shipping time is still assumed. The new values are shown in the following table:

Content Code LA 154 Flammable Gas Generation Rate and Decay Heat Limits

Content Code	Flammable Gas Generation Rate Limit per Drum (moles/second)	Decay Heat Limit per Drum (watts)
LA 154A	2.0581E-7	1.8219
LA 154B	2.7172E-7	2.4053
LA 154C	1.8936E-7	1.6762
LA 154D	2.3173E-7	2.0513

For Content Code SQ 154, a shipping time of 10 days is assumed, based on a previously approved study of controlled shipments from different DOE labs to the WIPP site, as outlined in Appendix 3.6 of the CH-TRU Payload Appendices. Considering the 12-hour minimum evacuation process in order to bring the ICV vacuum pressure down to less than or equal to 2 torr, the following limits are then derived:

Content Code SQ 154 flammable Gas Generation Rate and Decay Heat Limits

Content Code	Flammable Gas Generation Rate Limit per Drum (moles/second)	Decay Heat Limit per Drum (watts)
SQ 154A	1.0924E-7	0.9670
SQ 154B	1.6075E-7	1.4230
SQ 154C	1.2298E-7	1.0886
SQ 154D	1.4949E-7	1.3233
SQ 154E	9.8873E-8	0.8752
SQ 154F	2.6261E-7	2.3247
SQ 154G	1.0633E-7	0.9412

In addition, all payloads comprised of containers belonging to Content Codes LA 154 and SQ 154 still must meet the design limit of 40 watts per TRUPACT-II.

Mixing of shipping categories is allowed only within containers of a single content code (e.g., all containers within a payload must belong to Content Code LA 154). Limits applicable under mixing

of shipping categories are addressed in Section 6.12.9 of the CH-TRU Payload Appendices, Appendix 6.12, where flammability indexes (FI) are defined. A payload is qualified for shipment only if the FI of each payload container is a non-negative number less than or equal to 50,000.

Section 5.0 of the CH-TRAMPAC was revised to indicate that compliance with the gas generation requirements for Content Code SQ 154, in addition to Content Code LA 154, is described in Appendix 6.12 of CH-TRU Payload Appendices.

Section 6.0 of the CH-TRAMPAC was revised to indicate that compliance with the payload certification requirements for Content Codes SQ 154, in addition to Content Code LA 154, is described in Appendix 6.12 of CH-TRU Payload Appendices.

The staff agrees with the applicant's conclusion that the package meets the requirements of 10 CFR Part 71 when the allowable contents are limited as described in the CH-TRAMPAC document and related Sections of the CH-TRU Payload Appendices document.

No other changes were made to the SAR, the TRAMPAC, or the Payload Appendices.

Conclusion

The applicant adequately described the amended contents of the Model No. TRUPACT-II package as required by 10 CFR 71.33(b). In addition, the applicant evaluated the amended contents with respect to potential for flammable gas generation, and the potential presence of flammable VOCs. The staff agrees with the applicant's conclusion that the package meets the requirements of 10 CFR Part 71 when the contents are limited as described in the CH-TRAMPAC document and related sections of the CH-TRU Payload Appendices document.

CONDITIONS

Condition No. 5(c) of the certificate was revised to delete the wording "Minimum transport index to be shown on label for nuclear criticality control" and leave the wording "Criticality Safety Index" as defined in 10 CFR 71.4 that became effective October 1, 2004 (69 FR 3698).

Condition No. 12 of the certificate was revised to clarify that the package is approved for use under the general license provisions of 10 CFR 71.17. This change is due to a revision in the numbering of the sections in 10 CFR Part 71 that became effective on October 1, 2004 (69 FR 3698).

CONCLUSION

The Certificate of Compliance has been revised to reference Revision No. 21 of the SAR with associated changes. The changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9218, Revision No. 18, on July 19, 2005.