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DOE Packaging Certification Program

**Safety Evaluation Report
for
Amendment of Certificate of Compliance No. 9516
Model 9516 Package Design**

Docket No. 21-01-9516

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Date: 2021.04.12 12:56:58 -04'00'

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This Safety Evaluation Report (SER) documents the U.S. Department of Energy (DOE) Packaging Certification Program (PCP) independent review of the Safety Analysis Report for Packaging (SARP) submitted by the Idaho National Laboratory (INL) on behalf of the DOE Idaho Operations Office (ID) for amendment of DOE Certificate of Compliance (CoC) Number 9979 for the Model 9516 package design.

Evaluation

By email ^[1] dated September 29, 2020, as supplemented ^[2-4] November 12 and December 2, 2020, and April 6, 2021, the DOE CoC 9516 certificate holder, ID, requested an amendment of the CoC to authorize minor design changes to the Personnel Shield in Drawing 756179, Revision 3, and a change to the material specification of the Personnel Shield base tubing in SARP Revision 2, Table 2-4, *Material Specifications for the 9516 Package*. The drawing changes are needed for clarifications, improvements, and to correct minor errors and omissions to the Personnel Shield design. The material specification change is needed to authorize use of welded tubing as an alternative to seamless tubing for the same ASTM A-500 material and grade. Both changes are necessary to complete fabrication of Personnel Shields for additional 9516 packaging.

The applicant (INL) identified 15 items to the Personnel Shield design for clarification, improvement, or correction on Drawing 756179, Revision 3, and provided sufficient technical justification and basis ^[5-7] to support these changes. DOE PCP staff reviewed these changes and concurs that the changes to the Personnel Shield design are consistent with the SARP and do not affect the safety performance of the package or its technical evaluation.

The applicant discovered that the ASTM A-500 Grade B seamless structural tubing specified in the SARP Chapter 2, Table 2-4 was not readily available for purchase and proposed use of welded tubing as an acceptable alternative to seamless tubing. DOE PCP staff concurs that use of welded tubing in lieu of seamless tubing for the same type and grade of material does not affect the safety performance of the Personnel Shield, the package, or its technical evaluation in the SARP. Staff confirmed by review of the ASTM standard for A-500 Grade B tubing (A500/A500M) ^[8] that the material specifications and properties of welded and seamless tubing are identical.

DOE PCP staff confirmed that drawing and SARP Table 2-4 changes do not affect Package Operations, Acceptance Testing and Maintenance Program, or the Quality Assurance requirements for the package.

Based on the statements and representations contained in SARP Revision 3, DOE PCP staff independently confirmed by document review that the package design has been adequately described and evaluated in the SARP for proposed changes. Therefore, staff has reasonable assurance that the regulatory requirements of 10 CFR Part 71, have been met and recommends amendment of the CoC by the DOE Headquarters Certifying Official (HCO).

Conditions of Approval

The following changes to the CoC are required to implement the modifications evaluated in this SER.

- Section 5(a)(3), Drawings:
 - Update 756179 to Revision 5.
- Section 5(d), Conditions: Revise (10) to “Revision 6 of this certificate may be used until April 30, 2022.”
- Section 5(e), Supplements – Add (2) “ Safety Analysis Report for Packaging (SARP), for the 9516 Package, R1033-0062-ES, Rev. 3, April , 2021.”

Conclusion

Based on the statements and representations contained in the SARP and the conditions listed above, DOE PCP staff concludes that the package design has been adequately described and evaluated and the Model 9516 continues to meets the requirements of 10 CFR Part 71.

References

- [1] *9516 Shipping Package Amendments Request*, Email Carl Friesen to Shuler, September 29, 2020.
- [2] *Safety Analysis Report for Packaging (SARP), for the 9516 Package*, R1033-0062-ES, Rev. 3a page changes, January 2020.
- [3] *Safety Analysis Report for Packaging (SARP), for the 9516 Package*, R1033-0062-ES, Rev. 3b page changes, January 2020.
- [4] *Safety Analysis Report for Packaging (SARP), for the 9516 Package*, R1033-0062-ES, Rev. 3, April 2021.
- [5] *Technical Justification for 9516 Certificate of Compliance Amendment*, TEV- 4119, Rev. 0a, November 16, 2020 (effective date).
- [6] *Technical Justification for 9516 Certificate of Compliance Amendment*, TEV- 4119, Rev. 1, December 1, 2020 (effective date).
- [7] *Technical Justification for 9516 Certificate of Compliance Amendment*, TEV- 4119, Rev. 2, February 11, 2021 (effective date).
- [8] *Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes*, ASTM A500/A500M-21, January 21, 2021