

**Safety Evaluation Report for the  
NAC-LWT Legal Weight Truck Cask System,  
Revision LWT/DOE-10D, October 2010**

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This Safety Evaluation Report (SER) summarizes the results of the Department of Energy (DOE) Packaging Certification Program (PCP) Staff's review of the Safety Analysis Report for Packaging (SARP) for the NAC-LWT Legal Weight Truck Cask System, Revision LWT/DOE-10D, October 2010<sup>[1]</sup>. The safety performance of the NAC-LWT with the intended payloads meets the requirements of 10 CFR 71<sup>[2]</sup>.

Revision 6 of the DOE Certificate of Compliance (CoC) USA/9225/B(U)F-96 (DOE) was issued based on the Safety Analysis Report for Packaging (SARP) for the NAC-LWT Legal Weight Truck Cask System, Revision LWT/DOE-10B, submitted in May 2010<sup>[3]</sup>.

The applicant submitted Revision LWT/DOE-10C of the SARP to DOE, but it was subsequently withdrawn. The applicant submitted Revision LWT/DOE-10D of the SARP to DOE in October 2010 for options to use:

- A larger Viton® GLT/GLT-S O-ring, #AS-568-255, in the 6-inch diameter Containment Vessel Short (6CVS) to improve the closure seal performance
- An approved alternate leakage test method to meet the ANSI N14.5 leaktight criteria for acceptance and annual leakage testing of the 6CVS containment boundary
- An approved Argonne National Laboratory (ANL) supplier to perform acceptance tests of the 6CVS.

These changes were implemented in the SARP as follows:

Chapter 1 - Drawing 314-40-154 was revised (Rev 3) to add the new 6CVS O-ring size (#AS-568-255).

Chapter 3 - Revised to update the safe operating range data from 500 to 1000 hours for Viton® GLT/GLT-S O-rings and the reference to the Parker O-Ring Handbook from year 2001 to 2007.

Chapters 4, 7, and 8 - Revised to specify Viton® GLT/GLT-S for the 6CVS O-rings, rather than a general reference. These changes improved the consistency and specificity of the SARP component requirement.

Chapter 8 - Revised to allow an option to use an approved alternate leakage test method to meet the ANSI N14.5 leaktight criteria for acceptance and annual leakage testing of the 6CVS containment boundary.

Appendix 10A, Table 10A-1b (List of ANL Content Related License Drawings) - Revised to show the revision to Drawing 314-40-154.

Appendix 10B - Revised to allow the option to use an approved ANL supplier to perform acceptance tests of the 6CVS.

The DOE PCP staff reviewed these SARP changes and concludes that the safety performance of the NAC-LWT with the intended payloads meets the requirements of 10 CFR 71.

## References

[1] NAC International, Safety Analysis Report for Packaging for the NAC-LWT Legal Weight Truck Cask System, Revision LWT/DOE-10D, October 2010.

[2] Title 10, Code of Federal Regulations, Part 71 (10 CFR 71), Packaging and Transportation of Radioactive Materials.

[3] NAC International, Safety Analysis Report for Packaging for the NAC-LWT Legal Weight Truck Cask System, Revision LWT/DOE-10B, May 2010.