



June 22, 2021

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk / Mr. Pierre Saverot - STLB
Director, Division of Fuel Management – DFM
Office of Nuclear Material Safety and Safeguards - NMSS
11555 Rockville Pike
One White Flint North
Rockville, MD 20852

SUBJECT: AOS REQUEST TO AMEND CERTIFICATE OF COMPLIANCE 9316

USNRC Reference: EPID L-2021-LLA-0071, Docket No. 71-9316

AOS Reference: FM9006.1-062021-004

Mr. Saverot:

Alpha-Omega Services, Inc. (AOS) would like to request the amendment of Certificate of Compliance No. 9316. In addition to our previous amendment request dated April 28, 2021 we propose the attached minor change, as described below.

1. Revise the title to paragraph 7.1.3.3 Test B to read, "Helium Mass Spectrometer Leak Test: For Normal Form Contents ..."; and to include reference to test method A.5.3 or A.5.4 from ANSI N14.5-2018 to the description of the leak test of the containment system.

Attached for your review are the revised pages from SAR FM9054 Revision J-2.

Best Regards,

A handwritten signature in blue ink, appearing to read "Troy Hedger", is written over a horizontal line.

Troy Hedger, President

Alpha-Omega Services, Inc.

Attachments:

SAR AOS-FM9054 Rev J-2 (3 pages)

Radioactive Material Transport Packaging System Safety Analysis Report

for Model AOS-025, AOS-050, and AOS-100 Transport Packages

**Prepared by
Alpha-Omega Services, Inc.
Bellflower, CA**

Revision	Date	Description of Changes
J	January 31, 2021	<ul style="list-style-type: none"> • Consolidation of Revisions H – H7 (Revision I intentionally skipped) • Subsection 1.2.2 and Section 7.1 – Clarified that the shoring materials are structural • Paragraphs 2.5.3.1.2 through 2.5.3.1.4 – Calculations revised to correct minor errors and typos • Subsection 2.6.7 – Removed stale note created in Revision H-5 • Figures 3-18 through 3-20 – Replaced thermal transient plots for AOS Model-025 fire condition • Figure 4-3 – Changed port cover torque requirement • Chapter 9 – Updated with current requirements, approval letter, and certificate • Updated <i>ANSI N14.5</i> references to 2014 edition • Applied miscellaneous corrections (table of changes included with cover page of the submittal)
J-1	April 20, 2021	<ul style="list-style-type: none"> • Revised Subsection 1.2.2 (added discussion related to cask loading temperature and backfilling pressure) • Revised Subsection 2.2.3 (expanded discussion related effects of radiation), Paragraph 2.6.1.1 (revised initial conditions for NCT pressure calculations), Table 2-31 and Table 2-54 (omitted footnotes b and c, respectively; updated calculated pressures); added new Reference [2.35] • Revised Subsection 3.2.2 (update calculated NCT pressures and elaborate on initial conditions and mechanisms that can increase internal cask pressure) • Revised Table 4-6 and Table 4-7 (omitted footnotes b and c, respectively; revised pressure calculations based on updated initial conditions) • Revised Paragraph 7.1.3.1 (revised instructions for wet-loading cask), Figure 7-4 (updated to reflect current equipment), and Paragraph 7.1.3.3 (revised leak testing procedure) • Revised Table 8-1 footnote (clarified test procedure sensitivity), Subsection 8.1.4 (revised fabrication leak testing requirements), Section 8.2 (removed statement regarding pre-shipment leak testing because this belongs in Chapter 7), Subsection 8.2.2 (updated leak testing requirements)
J-2	June 22, 2021	<ul style="list-style-type: none"> • In Paragraph 7.1.3.3, changed title of “Test B – Tracer Gas: ...” to “Test B – Helium Mass Spectrometer Leak Test: ...” • In Paragraph 7.1.3.3, Test B, step a, changed “The cask lid seal, and vent and drain threaded pipe plugs must be leak-tested in accordance with ANSI N14.5-2014 [7.8].” to “The cask lid seal, and vent and drain threaded pipe plugs must be leak-tested in accordance with test method A.5.3 or A.5.4 from ANSI N14.5-2014 [7.8].”

Test A2 – Gas Pressure Drop: For *Special Form* Contents (Tests: Cask Lid(s), Vent and Drain Ports)

To perform a pre-shipment verification of the elastomeric lid seal:

- a. Perform the test by pressurizing the space between the cask lid seal's elastomeric O-Ring seals, –or– the cavities outside the cask vent and drain ports, and then measuring the pressure drop.

Notes: *The cask vent port and cask drain port need to be leak tested only if the ports have been opened since they were last tested.*

The Gas Pressure Drop Leak test is performed using a test manifold, isolation valve, pressure gauge, and pressure supply. Use the test apparatus described in the test procedure or equivalent.

- b. Connect the test manifold to the test port. Evacuate the test volume to the required level and then close the isolation valve.
- c. Disconnect the pressure supply and then wait for the prescribed test time. After the test time, the acceptance criterion is a pressure drop that corresponds to no detectable leakage.

Test B – Helium Mass Spectrometer Leak Test: For *Normal Form* Contents (Tests: Lid (Cask Lid Seal), Vent and Drain Ports)

To leak test the containment system:

- a. The cask lid seal, and vent and drain threaded pipe plugs must be leak-tested in accordance with test method A.5.3 or A.5.4 from *ANSI N14.5-2014* [7.8]. The acceptance criteria is 1×10^{-7} ref-cm³/sec air at an upstream pressure of a minimum of 1 atmosphere and downstream pressure of 0.01 atmosphere absolute or less. The test procedure sensitivity must be one-half of the reference air leakage rate (i.e., 5×10^{-8} ref-cm³/sec of air) or less.