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Your ref: Docket No. 71-9297
Our ref: LTR-LCPT-15-26

Subject: Supplements for Application USA/9297/AF-96 for Model No. Traveller Standard and XL Packages September 24, 2015

References: [1] Application Request Letter, LTR-LCPT-15-11, dated May 1, 2015

On May 1, 2015, an application request was submitted with regards to amend the application USA/9297/AF-96 for Model No. Traveller Standard and XL Packages [Reference 1]. This amendment was submitted to amend the license with new VVER fuel assembly contents in a new Traveller VVER package design.

As a result of the ongoing fabrication of the Traveller VVER packages, some licensing drawing revisions have been necessary. The drawing changes are also applicable to the Traveller XL and STD for future manufacturing improvement. Traveller SAR license drawings 10004E58 (XL and STD) and 10037E43 (VVER) currently specify ASTM B209/B221 6005-T5 aluminum alloy for the Clamshell base material, as well the all of the Clamshell doors. This material has become difficult to obtain in large quantities to support Traveller package manufacture, so the current supplier has identified a more readily available alloy.

Westinghouse has approved the use of ASTM B221 6005A-T61 aluminum alloy as a substitute. The technical disposition resulted in a material waiver, which approves the use ASTM B221 6005A-T61 aluminum alloy as an acceptable alternative material to current specification of ASTM B209/B221 6005-T5 aluminum alloy. Drawing changes are defined in Appendix A of this letter. Appendix A of this letter also further explains the justification of the equivalent alloy acceptance.

There has been no change to the technical evaluations of the SAR safety case. Attached are the following changed pages for SAR Revision 12:

- 1.4.2 Engineering Drawings for Packaging (no page change included)
 - 10004E58, Rev. 9 (Sheets 1-9)
 - 10037E43, Rev. 3 (Sheets 1-8)
- List of Effective Pages, Page 1 of 6

One copy of the supplement information is submitted electronically via EIE system and another copy emailed to the application Project Manager, John Vera. Additional copies or electronic submissions are available upon request. Should you have any questions, or require additional information, Please feel free to contact any of us, as needed: myself or the Nuclear Fuel Transport Director, Wes Stilwell at 1-803-647-3438 or stilwewe@westinghouse.com. We note that this is late change, and are available to review the

changes, so that the NRC staff review time is minimized and the application approval is promptly issued as we know the NRC staff were ready to approve the certificate within the past few weeks.

Sincerely,

Electronically Approved*

Tanya Sloma
Licensing, Compliance, and Package Technology
Nuclear Fuel Transport
Westinghouse Electric Company LLC

Attachment:

1. SAR Revision 12 change pages (18 pages total)
 - List of Effective Pages, Page 1 of 6
 - 10004E58, Rev. 9 (Sheets 1-9)
 - 10037E43, Rev. 3 (Sheets 1-8)

cc w/o attachment: W.E. Stilwell, Director, Nuclear Fuel Transport

*Electronically approved records are authenticated in the Electronic Document Management System.

Appendix A: Licensing Drawing Revision

Drawing Change Justification

The technical disposition resulted in a material waiver, which approved the use ASTM B221 6005A-T61 aluminum alloy as an acceptable alternative material to ASTM B221 6005-T5 aluminum alloy.

The mechanical properties are identical for each alloy as shown in ASTM B221, Table 2;

- 35 ksi minimum tensile yield and
- 38 ksi minimum ultimate tensile strength

The Safety Analysis Report, Section 2.2, specifies these mechanical properties and those are used in all mechanical analysis demonstrating a robust structural design. There is a slight variation in the chemical composition of the two aluminum alloys. From ASTM B221, Table 1, those variances are listed in the Table 1 below.

Table 1. Aluminum Alloy Composition

Element	Composition Fraction	
Alloy	6005	6005A
Silicon	0.6-0.9	0.50-0.9
Iron	0.35	0.35
Copper	0.1	0.3
Manganese	0.1	0.5
Magnesium	0.40-0.6	0.40-0.7
Chromium	0.1	0.3
Zinc	0.1	0.2
Titanium	0.1	0.1
Other Elements	0.05	0.05
Total	0.15	0.15
Aluminum	Remainder	Remainder

For all Traveller designs, the Outerpack is fabricated of 304 stainless steel resulting in dissimilar metals between the Outerpack and Clamshell. However, the Clamshell does not contact the Outerpack directly, thus no galvanic reactions are expected under normal operations. There are stainless steel fasteners in the Clamshell, which contact the aluminum alloy. Although the galvanic potential difference between these two dissimilar metals is too high to completely preclude any galvanic interaction, the surface of the aluminum is much greater than that of the fasteners. As a result, the cathode-to-anode ratio is very small, and significant degradation of the aluminum will be precluded.

Based upon the identical mechanical properties and the galvanic compatibility, it is concluded that ASTM B221 6005A-T61 aluminum alloy is an acceptable alternative material to ASTM B209/B221 6005-T5 aluminum alloy. SAR license drawings 10004E58 and 10037E43 are updated to include a note permitting

Appendix A

this material as an acceptable substitute. It is noted that other non-technical changes are being incorporated with this update, and are provided in the below drawing change notes.

Drawing 10004E58 Changes

Sheet 1 of 9

1. New Note F is being added to permit the use of ASTM B221 6005A-T61 aluminum alloy as an acceptable substitute for ASTM B209/B221 6005-T5 aluminum alloy.
2. In the BoM, Item 156 is being changed from “3/4-10” to “3/4” to accurately reflect the washer size description.

Drawing 10037E43 Changes

Sheet 1 of 8

1. New Note E is being added to permit the use of ASTM B221 6005A-T61 aluminum alloy as an acceptable substitute for ASTM B209/B221 6005-T5 aluminum alloy.
2. In the BoM, Item 105 is being changed from “1.0” to 7/8” to reflect the final reference size length of bolt (rather than the full length bolt that was to be machined shorter).
3. In the BoM, Item 96 Reference information column, “6005-T5 or 6005A-T61 aluminum” are being added to completely describe the VVER base assembly metals.
4. In the BoM, Item 136 (Axial Holddown Bolt) is being added for consistency with the Product Specification list of safety related items.

Sheet 4 of 8

1. In Zone E4, balloon Item 105 is being changed to item 126 for consistency with the BoM call-out.
2. In Zone E5, Item 96 balloon is being relocated to Zone C4/C5 to be consistent with the BoM call-out.

Sheet 6 of 8

1. In Zone F5/F6, balloon Item 66 is being added for consistency with the BoM call-out.

Sheet 7 of 8

1. In Zone G7/H8, balloon Item 136 is being added for consistency with the new item 136 added on the BoM.
2. In Zone D7, Item 99 arrow is being moved to point to the Latch handle directly.