



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 18, 2019

Ms. Tanya Sloma-DeLosier
Licensing, Compliance and
Package Technology
Nuclear Fuel Transport
Westinghouse Electric Company, LLC
5801 Bluff Road
Hopkins, SC 29061

SUBJECT: REVISION NO. 11 OF CERTIFICATE OF COMPLIANCE NO. 9297 FOR THE
MODEL NOS. TRAVELLER STD, TRAVELLER XL, AND TRAVELLER VVER
PACKAGES

Dear Ms. Sloma-DeLosier:

As requested by your letter dated March 26, 2019, enclosed is Certificate of Compliance No. 9297, Revision No. 11, for the Model Nos. Traveller STD, Traveller XL, and Traveller VVER packages. Changes made to the certificate are indicated by vertical lines in the margin. The staff's safety evaluation report is enclosed.

The approval constitutes authority to use the package for shipment of unirradiated fissile material and for the package to be shipped in accordance with the provisions of Title 49 of the *Code of Federal Regulations* (49 CFR) 173.471. Those on the attached list have been registered as users of the package under the general license provisions of 10 CFR 71.17 or 49 CFR 173.471.

Upon removal of Enclosure 3, this
document is uncontrolled

T. Sloma-DeLosier

- 2 -

If you have any questions regarding this certificate, please contact me or Pierre Saverot of my staff at 301-415-7505.

Sincerely,

/RA/

John McKirgan, Chief
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9297

EPID No. L-2019- RNW-0009

Enclosures:

1. Certificate of Compliance
No. 9297, Rev. No. 11
2. Safety Evaluation Report
3. Registered Users

cc w/encls 1 & 2: R. Boyle, Department
of Transportation
J. Shuler, Department
of Energy, c/o L. F. Gelder
Registered Users

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T. Sloma-DeLosier

- 3 -

SUBJECT: REVISION NO. 11 OF CERTIFICATE OF COMPLIANCE NO. 9297 FOR THE MODEL NOS. TRAVELLER STD, TRAVELLER XL, AND TRAVELLER VVER PACKAGES, DOCUMENT DATE: April 18, 2019

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SAFETY EVALUATION REPORT
Docket No. 71-9297
Model Nos. Traveller STD, Traveller XL and Traveller VVER
Certificate of Compliance No. 9297
Revision No. 11

SUMMARY

By letter dated March 26, 2019, Westinghouse Electric Company, LLC (Westinghouse or the applicant) requested a timely renewal of Certificate of Compliance (CoC) No. 9297 for the Model Nos. Traveller STD, Traveller XL and Traveller VVER packages.

Westinghouse did not request any changes to the package design, or operating procedures, acceptance tests and maintenance program of the package. The certificate has been renewed for an additional five-year period.

EVALUATION

In support of the certificate renewal request, Westinghouse submitted a consolidated application, Revision No. 14, incorporating the previous revision dated March 2017 and supplements dated May 2017, while providing also clarifications of existing analyses and procedures that had been requested from foreign competent authorities. Editorial corrections were also made in this Revision No. 14 of the application.

This consolidated application, Revision No. 14, is written in accordance with NUREG-1886, "Joint Canada - United States Guide for Approval of Type B(U) and Fissile Material Transportation Packages," as it was also the case for Revision No. 13. The staff determined that the documentation was available and complete and that the revisions made by the applicant did not result in a change of the packaging design or contents and that there were no changes to any technical analysis.

No changes were made to Chapter Nos. 2, 3, 4, and 5 of the application. Revisions made in Chapter Nos. 1, 7, and 8 of the consolidated application, Revision No. 14, were minor in nature, consisting of clarifications to the existing text. Revisions made in Chapter No. 6 corrected a polyethylene packing material penalty discrepancy in Section 6.4.2, which resulted in a reduction in the maximum k_{eff} ; this correction and revision did not result in a change of any technical analysis of the application or of any condition of the certificate.

In Chapter 1, editorial corrections were made for clarity purposes: "10CFR71" was changed to "10 CFR 71", "Strong back" of Clamshell was changed to "base" for consistency, "fuel Rod Pipe" was corrected to "Rod Pipe", the description of the BORAL plates was modified from "each axial side" to "each lateral side", etc. The applicant also clarified that the containment system for the Traveller is the zirconium alloy clad and end plugs of the fuel rods, that "grid assemblies are mechanically fastened to the guide thimbles" and that the package must be up-ended for the "loading and unloading of contents". Descriptions were also added to the drawing numbers.

The applicant noted that, in the previous revision of the application, the PWR fuel assembly single package criticality analyses, for hypothetical accident conditions (HAC), credited higher masses of polyethylene packing materials than the 2 kg polyethylene packing material limit referenced in Condition Nos. 5.(b)(1)(vi), 5.(b)(2)(vi), and 5.(b)(3)(vi) of the certificate of compliance, and this for all three PWR Groups. The consolidated application, Revision No. 14, was thus revised to credit the 2 kg polyethylene packing material limit for the PWR fuel assembly HAC single package analyses. This change resulted in a reduction of the maximum k_{eff} for all the PWR Groups 1, 2, and 3 single package analyses for hypothetical accident conditions. However, the applicant noted that the results of the single package analysis remain below the upper subcritical limit (USL). The staff reviewed Revision No. 13 of the application and confirmed that (i) the penalties taken for polyethylene packing materials for the single package analyses were for masses greater than the 2 kg limit on the package, (ii) in Revision No.14 of the application, the penalty taken for polyethylene packing materials was changed to 2 kg for consistency with the limit set on the package, as determined in the HAC package array analyses. The staff also noted that several sections of this Chapter were already identifying the polyethylene packing material limits to 2.0 kg. The staff confirmed that the clarifications and changes made by the applicant did not result in any change of the technical analyses that had been previously approved by staff. The staff also agreed that such modifications were made for consistency reasons, i.e., having the same penalty assessed for the 2 kg polyethylene packing material limit for all PWR Group safety cases.

Editorial corrections made in Chapter No. 7 include: “axial restraint and axial spacers” to “axial restraint(s) and axial spacer (as needed)”, “unirradiated definition” to “unirradiated uranium’ definition”, “assembly” or “fuel” to “contents” or “fuel contents”, respectively. The applicant clarified that that there may be more than one axial restraint and that the axial spacer is not always needed; the applicant added metric torque values and clarified how many stacked packages may be lifted at the same time.

Additions made in Chapter No. 8 include statements about (i) the Traveller’s procurement under an NRC-approved QA program meeting 10 CFR 71 Subpart H, (ii) non-destructive examination procedures and standards from ASME Code, Section III, Subsection NF-5000, (iii) the fact that the Traveller packaging is not pressurized and that pressure testing is not required, and (iv) compliance of the UHMW polyethylene with ASTM D4020.

CONDITIONS

The following changes have been made to the certificate:

Item No. 3(b), “Title and Identification of Report or Application,” has been updated to reference the latest consolidated application, Revision No. 14, dated March 2019.

Condition No. 9 has been modified to allow the previous revision of the certificate to be used for a period of approximately one year.

Condition No. 10 was updated with the new expiration date of the certificate.

The references section has been updated to include Revision No. 14 of the application.

CONCLUSION

Based on the statements and representations contained in the application and the conditions listed above, the staff concludes that the Model Nos. Traveller STD, Traveller XL, and Traveller VVER packages meet the requirements of 10 CFR Part 71 and the guidance on format and content in NUREG-1886 for joint approval in the U.S. and Canada. The certificate has been renewed for a five-year term.

Issued with Certificate of Compliance No. 9297, Revision No. 11,

on April 18, 2019