NRC FORM 618
(8-2000)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9239	20	71-9239	USA/9239/AF	1	OF	5

2. PREAMBLE

a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. ISSUED TO *(Name and Address)*

Westinghouse Electric Company, LLC
Columbia Fuel Fabrication Facility
5801 Bluff Road
Hopkins, SC 29061

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Westinghouse Electric Company, LLC, application, Revision No. 13, dated October 28, 2011, as supplemented.

CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model Nos.: MCC-3, MCC-4, and MCC-5

(2) Description

The MCC packages are shipping containers for unirradiated uranium oxide fuel assemblies. The packagings consist of a steel fuel element cradle assembly equipped with a strongback and an adjustable fuel element clamping assembly. The cradle assembly is shock mounted to a 13-gauge carbon steel outer container by shear mounts. The MCC-3 container is closed with thirty ½-inch T-bolts. The MCC-4 and MCC-5 containers are closed with fifty ½-inch T-bolts.

The MCC-3 and MCC-4 containers are permanently equipped with vertical Gd_2O_3 neutron absorber plates that are mounted on the center wall of the strongback. Additional horizontal Gd_2O_3 neutron absorber plates, mounted on the underside of the strongback, are required for the contents as specified.

The MCC-5 container is permanently equipped with both the vertical and horizontal Gd_20_3 neutron absorber plates. Additional vee-shaped, guided Gd_20_3 neutron absorber plates are required for the contents as specified.

Approximate dimensions of the MCC-3 packaging are 44½ inches O.D. by 194½ inches long. The gross weight of the packaging and contents is 7,544 pounds. The maximum weight of the contents is 3,300 pounds.

5. (a)(2) Packaging (continued)

Approximate dimensions of the MCC-4 packaging are 44½ inches O.D. by 226 inches long. The gross weight of the packaging and contents is 10,533 pounds. The maximum weight of the contents is 3,870 pounds.

Approximate dimensions of the MCC-5 packaging are 44½ inches O.D. by 226 inches long. The gross weight of the packaging and contents is 10,533 pounds. The maximum weight of the contents is 3,700 pounds.

(3) Drawings

The MCC-3 packaging is constructed in accordance with Westinghouse Electric Corporation Drawing No. MCCL301, Sheets 1, 2, 3, and 4, Rev. 6.

The MCC-4 packaging is constructed in accordance with Westinghouse Electric Corporation Drawing No. MCCL401, Sheets 1, 2, 3, 4, and 5, Rev. 9.

The MCC-5 packaging is constructed in accordance with Westinghouse Electric Corporation Drawing No. MCCL501, Sheets 1 through 10, Rev. 6.

(b) Contents

(1) Type and form of material

Unirradiated PWR uranium dioxide fuel assemblies with a maximum uranium-235 enrichment of 5.0 weight percent with the following exceptions: 15x15 BW fuel assemblies have a maximum enrichment of 4.65 wt%, and VVER-1000 fuel assemblies have a maximum enrichment of 4.80 wt%.

5. (b) (1) Contents (continued)

The fuel assemblies shall meet the specifications given in Westinghouse Drawing No. 6481E15, Rev. 6, and in the following tables of Appendix 1-5 of the application:

Table 1-5.1, Rev. 13	Fuel Assembly Parameters 14x14 Type Fuel Assemblies†
Table 1-5.2, Rev. 13	Fuel Assembly Parameters 15x15 Type Fuel Assemblies‡
Table 1-5.3, Rev. 13	Fuel Assembly Parameters 16x16 Type Fuel Assemblies**
Table 1-5.4, Rev. 13	Fuel Assembly Parameters 17x17 Type Fuel Assemblies**
Table 1-5.5, Rev. 13	Fuel Assembly Parameters VVER-1000 Type Fuel Assembly***

** 16x16 CE fuel assemblies and the 17x17 W-STD/XL fuel assemblies shall be shipped only in the Model No. MCC-4 package.

*** VVER-1000 fuel assemblies shall be shipped only in the Model No. MCC-5 package.

† 14x14 Type fuel assemblies' annular pellet zone length is not restricted and may exceed 6-inches.

‡ 15x15 (Type B) OFA fuel assemblies may be modified by replacing seven fuel rods in locations O10 through O15 and N15 with solid stainless steel.

(2) Maximum quantity of material per package

Two (2) fuel assemblies

(c) Criticality Safety Index 0.4

6. (a) For shipments of 14x14, 15x15, 16x16, and 17x17 OFA fuel assemblies with U-235 enrichments of over 4.65 wt% and up to 5.0 wt%, horizontal Gd_2O_3 neutron absorber plates shall be positioned underneath each assembly. The horizontal absorber plates shall be placed horizontally on the underside of the strongback, as specified in the respective drawings in Condition 5(a)(3) for the MCC-3 and MCC-4 models.

6. (b) For shipments of 17x17 STANDARD lattice fuel assemblies (17x17 STD and 17x17 XL) with U-235 enrichments of over 4.85 wt% and up to 5.0 wt%, horizontal Gd_2O_3 neutron absorber plates shall be positioned underneath each assembly. The horizontal absorber plates shall be placed horizontally on the underside of the strongback, as specified in the respective drawings in Condition 5(a)(3) for the MCC-3 and MCC-4 models.

7. Shipments of VVER-1000 fuel assemblies are authorized with U-235 enrichments up to 4.80 wt%.

8. Each fuel assembly must be unsheathed or must be enclosed in an unsealed plastic sheath which may not extend beyond the ends of the fuel assembly. The ends of the sheath may not be folded or taped in any manner that would prevent flow of liquids into or out of the sheathed fuel assembly.

9. The dimensions, minimum Gd_2O_3 loading and coating specifications, and acceptance testing of the neutron absorber plates shall be in accordance with the "Gd_2O_3 Neutron Absorber Plates Specifications," Appendix 1-7, Rev. 12, of the application, as supplemented. The minimum Gd_2O_3 coating areal density on the vertical and horizontal neutron absorber plates shall be 0.054 g-Gd_2O_3/cm². The minimum Gd_2O_3 coating areal density on guided neutron absorber plates shall be 0.027 g-Gd_2O_3/cm².

10. In addition to the requirements of Subpart G of 10 CFR Part 71:

    (a) Each package shall be prepared for shipment and operated in accordance with the “Routine Shipping Container Utilization Summary Operating Procedures,” in Chapter 7 of the application; and

    (b) Each package shall be tested and maintained in accordance with the “Acceptance Tests, Maintenance Program, and Recertification Program,” in Chapter 8 of the application, and as specified in the respective drawings in Condition 5(a)(3) for the MCC-3, MCC-4, and MCC-5 models.

11. Transport by air of fissile material is not authorized.

12. Fabrication of new packagings is not authorized.

13. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

14. Revision No. 19 of this certificate may be used until March 31, 2022.

15. Expiration date: March 31, 2027.

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REFERENCES

Westinghouse Electric Company, LLC, “Application For Approval of Packaging Of Fissile Radioactive Material (MCC Shipping Containers)”, Revision No. 13, dated October 2011.

Supplement dated March 28, 2013, Revision No. 14, August 9, 2016, and March 3, 2022.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

White, Bernard signing on behalf of Diaz-Sanabria, Yoira on 03/09/22

Yoira K. Diaz-Sanabria, Chief
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety and Safeguards

Date: March 9, 2022

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

SAFETY EVALUATION REPORT

Docket No. 71-9239
Model No. MCC-3, MCC-4, and MCC-5
Certificate of Compliance No. 9239
Revision No. 20

SUMMARY

By application dated March 3, 2022, Westinghouse Electric Company LLC (Westinghouse or the applicant) submitted a renewal request for Certificate of Compliance (CoC) No. 9239 for the Model Nos. MCC-3, MCC-4, and MCC-5 packages. The certificate holder did not request any changes to the package design, operating procedures, acceptance tests, nor maintenance program for the package. The certificate has been renewed for a five year term.

CONCLUSION

By application dated March 3, 2022, Best Theratronics requested renewal of Certificate of Compliance No. 9239 for the Model Nos. MCC-3, MCC-4, and MCC-5 packages. The applicant did not request any changes to the package design or authorized contents. The staff reviewed the documents referenced in the certificate and determined that the documentation was available and complete. The staff also reviewed the operating and maintenance procedures for the package and found them to be adequate. In addition, the certificate of compliance is revised to update the revision number, remove unnecessary change bars, and make editorial changes.

The certificate has been renewed for a five year term that expires on March 31, 2027. This change does not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9239, Revision No. 20.