

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1 a. CERTIFICATE NUMBER 9791	b. REVISION NUMBER 10	c. DOCKET NUMBER 71-9791	d. PACKAGE IDENTIFICATION NUMBER USA/9791/B(U)-85	PAGE 1	PAGE OF 3
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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*)
U.S. Department of Energy
Division of Naval Reactors
Washington, DC 20585
- b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
PWR-2 Lower Core Barrel Safety Analysis Report
for Packaging dated January 1982,
as supplemented

4. 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 No.: PWR-2 Lower Core Barrel Shipping and Disposal Container

(2) Description

The PWR-2 Lower Core Barrel Shipping and Disposal Container package consists of an inner burial container and a reusable outer container. The inner container is loaded with an S8G prototype pressure vessel assembly. The package weighs approximately 400,000 pounds.

The outer container is a 4-inch thick steel cylinder, 127 inches in outside diameter, 212 inches long, with two 6-inch thick end plates. The bottom end plate is welded to the cylinder with a full penetration weld and the top end plate is bolted with 107, 2-inch diameter fasteners.

The package is equipped with two 2.5-inch thick by 10-inch long circumferential impact limiter rings on the side, two concentric impact limiter rings on the ends, and aluminum honeycomb crush blocks in the top and bottom spaces between the inner and outer containers.

The container is supported horizontally on the railroad car by eight gussets attached to two horizontal plates. Each plate is bolted to the top flange of an I-beam. The bottom flange of the I-beam is bolted to a 300-ton railroad car.

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5. (a) Packaging (continued)

S8G-Prototype Advanced Fleet Reactor Core Barrel Disposal Container

The core barrel disposal container (CBDC) is comprised of an HY-80 steel upper cylinder and an A737 steel lower (body) cylinder joined by a 4.5-inch thick HY-80 steel transition ring with full penetration welds. The upper cylinder has a thickness that varies from 1.35 inches to 4.5 inches thick and a maximum outside diameter of 117.7 inches. The body cylinder has a thickness that varies from 5.25 inches to 6 inches and an outside diameter of 104 inches. Attached to the body cylinder are two additional pieces of A737 steel shielding components. The lower shielding has a thickness of 3.25 inches and the upper shielding has a thickness of 2 inches. The A737 steel bottom plate is 7 inches thick and has an outside diameter of 108 inches. The bottom plate is welded to the lower (body) cylinder. Two, 5-inch thick HY-80 steel guide bars are welded to the outside diameter of the bottom plate with an outside diameter of 116.6 inches to create a load path for the CBDC through the PWR-2 shipping container support rings. A 3.25-inch thick HY-80 steel closure cover is welded to the inside of the top of the upper cylinder CBDC to seal the CBDC. The closure cover is attached to the container with a 3.1-inch thick closure weld. The outside diameters of the guide bars and upper cylinder of the CBDC establish a relatively close fit with the outer container to limit radial movement during shipment.

(3) Drawings

The packaging is constructed in accordance with Westinghouse Drawing Nos. 1575E12, 1574E96, and KAPL, Inc., Drawing Nos. 108E6847 and 108E6846, as supplemented.

(b) Contents

(1) Type and form of material

An irradiated S8G-Prototype Advanced Fleet Reactor core barrel assembly. In addition, the contents may include surface contamination in the form of activated corrosion products and 5.3 gallons of residual water and must have a minimum decay time of 300 days.

(2) Quantity of material in package

One irradiated S8G-Prototype Advanced Fleet Reactor core barrel assembly.

6. The package shall be operated in accordance with the procedures described in Chapter 7 of the application and in accordance with Naval Reactors letter G#C98-10723 dated February 13, 1998, as supplemented. The package shall be tested and maintained in accordance with the procedures in Chapter 8 of the application and in accordance with Naval Reactors letter G#C98-10723 dated February 13, 1998, as supplemented.

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7. Fabrication of packages must have been completed by December 31, 2006, in accordance with 10 CFR 71.19(c).
8. Expiration date: July 31, 2022.

REFERENCES

PWR-2 Lower Core Barrel Safety Analysis Report for Packaging, WAPD-LP(CES)CS-670 dated January 1982.

Supplements: Naval Reactors letters G#7241 dated December 2, 1982; G#84-452 dated March 28, 1984; G#C92-03331 dated January 29, 1992; G#92-03546 dated June 5, 1992; G#92-03589 dated July 2, 1992; G#97-053513 dated June 11, 1997; G#C97-03596 dated August 28, 1997; G#C98-10723 dated February 13, 1998; G#98-10801 dated May 5, 1998; G#02-0688 dated January 16, 2002; G#07-00297 dated January 18, 2007; G#12-00635 dated January 30, 2012; G#16-05556 November 29, 2016 G#C18-00214 dated January 25, 2018; and G#19-00603 dated February 25, 2019.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

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

Date: 4/5/19