

**CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIALS PACKAGES**

1. CERTIFICATE NUMBER	2. REVISION NUMBER	3. PACKAGE IDENTIFICATION NUMBER	4. PAGE NUMBER	5. TOTAL NUMBER PAGES
6386	12	USA/6386/R(U)F	1	4

**2. PREAMBLE**

- a. This certificate is issued to certify that the 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)
- b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

U.S. Department of Energy  
Division of Naval Reactors  
Washington, DC 20585

Safety Analysis Report for 235R001  
Shipping Container dated August 11, 1970,  
as supplemented.

c. DOCKET NUMBER 6386

**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.: 235R001

(2) Description

The 235R001 shipping container structure is horizontal, having an oblong cross section and is fabricated from 0.104-inch thick carbon sheet steel. The container is 313 inches long and has a maximum weight of 4,640 pounds, empty. The oblong cross section dimensions are approximately 35.5 inches high by 33.0 inches wide. The container was originally designed to ship unirradiated fuel modules of the A1G/A4W type. Subsequently, the container has been adapted to ship A1W-3 fuel modules using a strongback, partial A1W-R3 fuel modules using module support assemblies, standard size or partial S8G fuel modules by use of a special frame assembly and cradle clamps, S3G-3 refueling modules using cell support assemblies, rodged or unrodged D1G fuel modules, rodged A<sup>2</sup>4PP fuel cells and rodged or unrodged D2W fuel cells. The loaded container maximum weight is 12,421 pounds.

(3) Drawings

The packaging is constructed in accordance with Container Research Corporation Drawing Nos. 235R001, Rev. C, 235R004, Rev. C, and 235R005, Rev. 0, and Westinghouse Electric Corporation Drawing Nos. 973D425, Rev.1, 903E693, Rev. 3, Sheet 1, 2 and 3 of 3, and 947J076, Rev. 0.

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(b) Contents

(1) Type and form of material

Unirradiated fuel assemblies of the following type,

- (i) A1G and A4W reactor cell without upper mechanism and with control rod, leadscrew and shipping fixture installed on rodded type modules.
- (ii) A4W Reactor Test Assembly (RTA).
- (iii) A1W-3 module without upper mechanism and with control rod, leadscrew, and control rod holddown device installed on rodded type modules.
- (iv) A1W-R3 Partial Lower Module.
- (v) Standard size S8G reactor cluster with regular or substitute support adapters and regular control rods or Boral poison rods with control rod holddown devices installed. If only one cell is shipped per container, a dummy load shall be installed for balance.
- (vi) Partial size S8G reactor cluster with regular or substitute support adapters and regular control rods or Boral poison rods with control rod holddown devices installed. If only one cell is shipped per container, a dummy load shall be installed for balance.
- (vii) S3G-3 refueling cells, with a maximum of one 0-1 reactor cell assembly per container.
- (viii) D1G fuel module, rodded.
- (ix) D1G removable fuel assembly (RFA), unrodded.
- (x) A1G fuel cluster, fueled end only of full A1G reactor cell, rodded.
- (xi) ASNPP fuel cell with control rod, and control rod holddown device installed.
- (xii) D2W side or central fuel cells with control rod and control rod holddown device.
- (xiii) D2W corner fuel cells, unrodded.
- (xiv) STC fuel cells, unrodded.
- (xv) D2W fuel cell and shear block with control rod inserted in rodded fuel cell.

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- (2) Maximum quantity of material per package
- (i) One fuel assembly as described in 5(b)(1)(i), 5(b)(1)(ii), 5(b)(1)(iii), 5(b)(1)(xi), or 5(b)(1)(xv).
  - (ii) Two fuel assemblies as described in 5(b)(1)(iv), 5(b)(1)(v), 5(b)(1)(vi), 5(b)(1)(vii), 5(b)(1)(viii), 5(b)(1)(x), 5(b)(1)(xii), 5(b)(1)(xiii), or 5(b)(1)(xiv).
  - (iii) Four fuel assemblies as described in 5(b)(1)(ix).

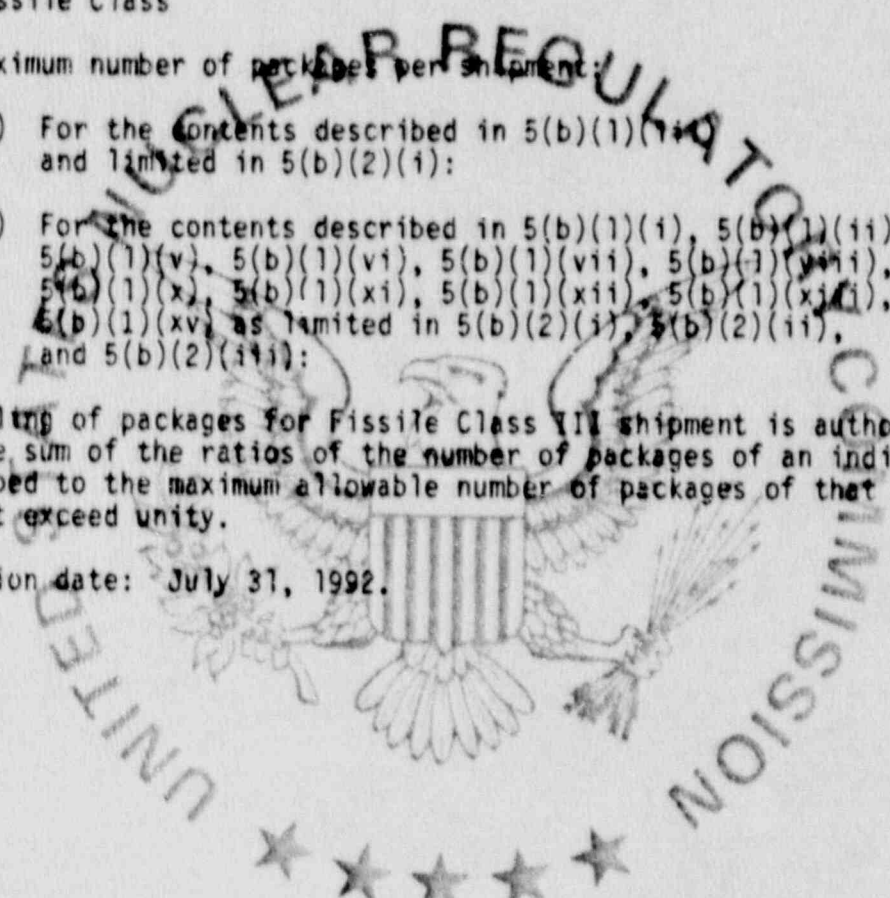
(c) Fissile Class

III

Maximum number of packages per shipment:

- (1) For the contents described in 5(b)(1)(i) and limited in 5(b)(2)(i): 18
- (2) For the contents described in 5(b)(1)(ii), 5(b)(1)(iv), 5(b)(1)(v), 5(b)(1)(vi), 5(b)(1)(vii), 5(b)(1)(viii), 5(b)(1)(ix), 5(b)(1)(x), 5(b)(1)(xi), 5(b)(1)(xii), 5(b)(1)(xiii), 5(b)(1)(xiv), 5(b)(1)(xv) as limited in 5(b)(2)(i), 5(b)(2)(ii), and 5(b)(2)(iii): 4

6. Commingling of packages for Fissile Class III shipment is authorized provided that the sum of the ratios of the number of packages of an individual type to be shipped to the maximum allowable number of packages of that type per shipment does not exceed unity.
7. Expiration date: July 31, 1992.



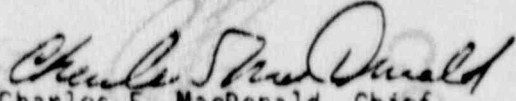
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REFERENCES

Safety Analysis Report for 235R001 Shipping Container, WAPD-OP(R)RD-357 dated August 11, 1970.

Supplements: Knolls Atomic Power Laboratory letter AIG 25-159, dated October 2, 1970. Bettis Atomic Power Laboratory letters WAPD-OP(R)RD-444, dated October 9, 1970; WAPD-OP(R)RD-476, dated October 26, 1970; and WAPD-OP(R)RD-488, dated October 30, 1970. Knolls Atomic Power Laboratory letters AIG 25-181, dated April 9, 1971; and AIG 25-191, dated May 11, 1971. Bettis Atomic Power Laboratory letters WAPD-OP(R)C-94, dated May 16, 1972; WAPD-OP(R)C-199, dated December 13, 1972; and WAPD-OP(R)C-229, dated March 6, 1973. Naval Reactors letters G#5078, dated January 26, 1976; G#5776, dated September 8, 1977; G#5905, dated January 23, 1978; G#5923, dated February 22, 1978; G#6095, dated August 17, 1978; G#6208, dated March 8, 1979; G#6373, dated September 4, 1979; G#6813, dated October 17, 1980; G#C85-0467, dated July 17, 1985; G#C88-8112, dated October 18, 1988; and G#90-03655, dated August 10, 1990.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

  
Charles E. MacDonald, Chief  
Transportation Branch  
Division of Safeguards and  
Transportation, NMSS

Dated: \_\_\_\_\_

SEP 20 1990



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20545

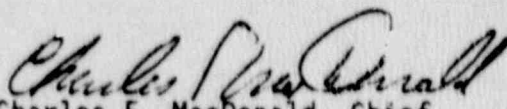
APPROVAL RECORD

Model No. 235R001  
Certificate of Compliance No. 6386  
Revision No. 12

By letter dated August 10, 1990, the Division of Naval Reactors, U.S. Department of Energy requested that Certificate of Compliance No. 6386 be amended to designate the Model No. 235R001 shipping container as a "B(U)" package for the shipment of a single D2W fuel cell.

The D2W fuel cell is one of many authorized contents for the Model No. 235R001. The containment and basic fuel geometry are provided by the contents and are not susceptible to brittle fracture. The primary parts of the packaging are fabricated from thin material and are not susceptible to a brittle failure.

Based on considerations for brittle fracture, it is concluded that the Model No. 235R001 may be designated as a Type B(U), with additional fabrication authorized after August 31, 1986.

  
Charles E. MacDonald, Chief  
Transportation Branch  
Division of Safeguards  
and Transportation, NMSS

SEP 20 1990

Date: \_\_\_\_\_