

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIALS PACKAGES**

1. a. CERTIFICATE NUMBER 9186	b. REVISION NUMBER 5	c. PACKAGE IDENTIFICATION NUMBER USA/9186/AF	d. PAGE NUMBER 1	e. TOTAL NUMBER PAGES 4
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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)
U.S. Department of Energy
Division of Naval Reactors
Washington, DC 20585

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
Safety Analysis for Shipping S8G Power Units
in the S-6213 Container, Rev. 7, dated
June 16, 1975, as supplemented.

c. BOOKET NUMBER
71-9186

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.: S-6213 Power Unit Shipping Container
- (2) Description

A power unit shipping container (PUSC) for shipment of a power unit complete with control rods and control rod drive mechanisms installed.

The PUSC consists of a carbon steel cylindrical shell approximately 9-1/4 feet in outside diameter by 39-1/2 feet long, including hemispherical steel end impact limiters, with 10-3/4-foot outside diameter central flanges joining the barrel and cover halves. A power unit is supported in the PUSC by a centrally located thick circular steel plate (PU head) which is clamped between the central mating flanges of the PUSC and fastened by 94, 2-inch diameter high strength studs. The upper and lower extremities of the power unit cantilever into the barrel and cover halves without additional support except for the longest control rod drive mechanisms (S8G Power Unit Type B only). A lower support adapter is installed in the barrel end of the container during shipment of the S6W prototype power unit.

The PUSC is shipped in the horizontal position on a support frame which is secured to a specially built flatbed rail car. The PUSC, including frame and contents, weighs approximately 490,000 pounds for shipments of Type A and B, S8G power units.

The weight of the PUSC, including frame and contents is approximately 438,900 pounds for shipment of the S6W prototype power unit.

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5. (a) Continued

(3) Drawings

The Model No. S-6213 PUSC is constructed in accordance with the Drawing Nos. specified in the attachment to this certificate.

(b) Contents

(1) Type and form of material

(i) Unirradiated Naval Reactors Type A or B S8G power unit as described in Chapter 5 of the application and containing uranium enriched in the U-235 isotope.

(ii) Unirradiated S6W prototype power unit as described in Chapter 6 of "S6W Prototype Power Unit in S-6213 Power Unit Shipping Container Safety Analysis Report", WAPD-REO(c)1219, Revision 1, and containing uranium enriched in the U-235 isotope.

(2) Maximum quantity of material per package

(i) One Type A or Type B S8G power unit.

(ii) One S6W prototype power unit.

(c) Fissile Class

III

Maximum number of packages per shipment

One (1)

6. All control rods shall be restrained in the power unit fuel cells by the control rod holddown latches.
7. In addition to the requirements of Subpart G of 10 CFR Part 71, a determination shall be made, for each shipment, of the "g" forces that the package or packaging has been subjected to during transport.
- (a) A nondestructive examination of the entire length of both inner and outer surfaces of the four tie-down support bracket-to-container wall butt welds shall be conducted:
- (1) if the packaging (with or without contents) has been subjected to "g" forces in excess of 2 g's in any direction through the center of gravity of the package since the last inspection, and
 - (2) following the fourth shipment,* and
 - (3) after every second shipment* following the fourth shipment.

* This requirement shall not be construed to require an inspection if the previous shipment had been inspected in accordance with (7(a)(1)) above.

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7. Continued

(b) The nondestructive examination in accordance with a written procedure may be by either:

(1) The liquid penetrant method in accordance with:

- (i) Article 6, Section V, ASME Code, or
- (ii) MIL-STD-271E, "Nondestructive Testing Requirements for Metals," Section 5, October 31, 1973, or
- (iii) NAVSHIPS 250-1500-1, "Welding Standard," Section 12.5

(2) or the magnetic particle method in accordance with:

- (i) Article 7, Section V, ASME Code (Yoke Technique; Dry Particle Method; direct or rectified current), or
- (ii) MIL-STD-271E, Section 4; specifically 4.3.1 (General) and 5.6.1 (coatings), 4.3.3 (Dry Powder), 4.3.3.3.6 (Continuous), and 4.3.3.3 (Procedure) as excepted by using direct or rectified current, 4.3.3.3.3 (Yoke Technique), 4.3.2.5 (sensitivity and cleaning), and 4.3.1.3 (smoothness), or
- (iii) NAVSHIPS 250-1500-1, Section 12.4, 12.4.1 (General), 12.4.3 (Dry powder), 12.4.3.3.2.1 (Yoke Technique) using direct or rectified current.

(c) If any indications, as defined in accordance with either:

- (i) Paragraph UA-93(a), Appendix VI, Division 1, Section VIII, ASME Code (with 7(b)(2)(i), above), or
- (ii) Paragraphs UA-72 and UA-73, Appendix VI, Division 1, Section VIII, ASME Code (with 7(b)(2)(i), above), or
- (iii) Class 1 acceptance criteria of NAVSEA 0900-LP-003-8000, "Surface Inspection Acceptance Standards for Metal," with Change 2, July 1, 1974 (with 7(b)(1)(ii) or 7(b)(2)(ii), above), or
- (iv) NAVSHIPS 250-1500-1, Section 10.3.2 (with 7(b)(1)(iii) or 7(b)(2)(iii), above), as noted,

are detected, the packaging shall be repaired and reinspected prior to use and shall be inspected prior to each shipment thereafter. Any defects shall be reported in accordance with 10 CFR Part 71.95.

8. Expiration date: July 31, 1992

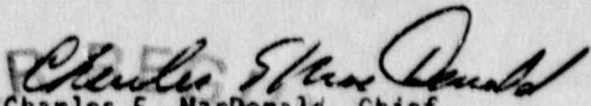
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REFERENCES

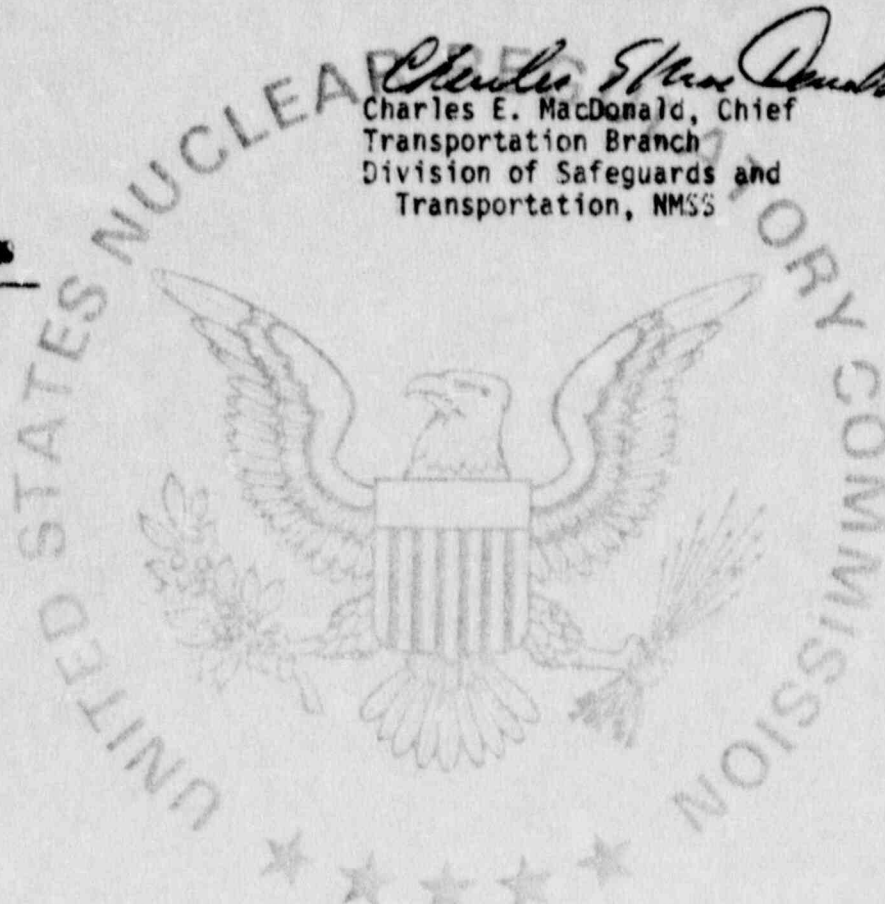
U.S. Naval Reactors application dated July 24, 1975.

Supplements dated: June 3, 1977; July 24, 1978 and Naval Reactor letter G/C89-2838, dated May 22, 1989.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION


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

Date: OCT 10 1986



ATTACHMENT

The packaging is constructed in accordance with Bingham-Willamette Co. Drawing Nos.:

F-358, Sh. 1 of 1, Rev. A
F-372, Sh. 1 of 1, Rev. A
F-373, Sh. 1 and 2 of 2, Rev. A
F-374, Sh. 1 of 1, Rev. A
F-376, Sh. 1 of 1, Rev. A
F-377, Sh. 1 of 1, Rev. A
F-404, Sh. 1 of 1, Rev. J
F-406, Sh. 1 of 1, Rev. J
F-408, Sh. 1 of 1, Rev. K
F-409, Sh. 1 of 1, Rev. J
F-424, Sh. 1 of 1, Rev. J
F-425, Sh. 1 of 2, Rev. L
F-425, Sh. 2 of 2, Rev. H
F-494, Sh. 1 of 2, Rev. J
F-495, Sh. 1 of 2, Rev. M
F-495, Sh. 2 of 2, Rev. M
F-496, Sh. 1 of 1, Rev. N

The SBG power unit contents are as shown in Royal Industries, Inc., Drawing No. 130J039, Sh. 1 of 2 Rev. M and General Electric Drawing Nos.:

127D9647, Sh. 1 and 2 of 4, Rev. C
284E809, Rev. 0
291E201, Sh. 1 through 3 of 3, Rev. F
291E234, Rev. C
291E246, Sh. 1 and 2 of 2, Rev. C
291E258, Rev. C
291E284, Rev. C
294E810, Sh. 1 of 2, Rev. C
294E811, Sh. 1 of 2, Rev. C
294E812, Rev. C
294E902, Sh. 1 of 4, Rev. N
294E902, Sh. 2 of 4, Rev. M
294E902, Sh. 3 of 4, Rev. K
294E902, Sh. 4 of 4, Rev. N
294E912, Sh. 1 and 2 of 2, Rev. J
294E930, Sh. 2 of 2, Rev. 0

ATTACHMENT (Continued)

294E963, Sh. 1 through 3 of 3, Rev. B
 294E966, Sh. 2, 4, 5, and 8 of 8, Rev. B
 296E204, Rev. B
 296E261, Sh. 2 of 2, Rev. C
 299E411, Rev. B
 299E412, Rev. D
 7543E10, Rev. J
 7543E23, Sh. 1 of 2, Rev. D
 7543E27, Sh. 1 and 2 of 4, Rev. C
 7543E29, Sh. 1 and 2 of 3, Rev. C
 7543E30, Rev. A
 7543E65, Rev. E
 7543E68, Rev. O
 7543E83, Rev. O

The S6W prototype power unit contents are shown in Westinghouse Electric Corporation Drawings Nos.:

3D39624, Rev. B
 3D39627, Rev. A
 1480J01, Rev. C
 1480J63, Sheets 1 through 12, Rev. B
 1755E07, Sheets 1 through 4, Rev. O
 1755E08, Sheets 1 through 6, Rev. O
 1927E02, Rev. A
 2501F02, Rev. O
 2501F12, Rev. O
 2501F13, Rev. O
 2501F14, Rev. O
 8418C26, Rev. O
 8418C27, Rev. O
 8418C28, Rev. O