

U.S. NUCLEAR REGULATORY COMMISSION
CERTIFICATE OF COMPLIANCE
For Radioactive Materials Packages

1.(a) Certificate Number 9186	1.(b) Revision No. 2	1.(c) Package Identification No. USA/9186/AF	1.(d) Pages No. 1	1.(e) Total No. Pages 4
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2. PREAMBLE

- 2.(a) This certificate is issued to satisfy Sections 173.393a, 173.394, 173.395, and 173.396 of the Department of Transportation Hazardous Materials Regulations (49 CFR 170-189 and 14 CFR 103) and Sections 146-19-10a and 146-19-100 of the Department of Transportation Dangerous Cargoes Regulations (46 CFR 146-149), as amended.
- 2.(b) The packaging and contents described in item 5 below, meets the safety standards set forth in Subpart C of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."
- 2.(c) 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—

3.(a) Prepared by (Name and address):
U.S. Department of Energy
Division of Naval Reactors
Washington, DC 20545

3.(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.

3.(c) Docket No. 71-9186

4. CONDITIONS

This certificate is conditional upon the fulfilling of the requirements of Subpart D of 10 CFR 71, as applicable, and the conditions specified in item 5 below.

5. Description of Packaging and Authorized Contents, Model Number, Fissile Class, Other Conditions, and References:

(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 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 (Power Unit B only).

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.

5. (a) Cont'd

(3) Drawings

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

(b) Contents

(1) Type and form of material

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

(2) Maximum quantity of material per package

One Type A or Type B 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 D 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.

7. Cont'd

(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, Sections 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 VIII, Division 1, Section VIII, ASME Code (with 7(b)(1)(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 Metals," 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 71.61.

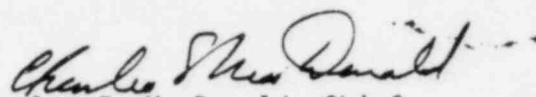
8. Expiration date: August 31, 1987.

REFERENCES

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

Supplements dated: June 3, 1977 and July 24, 1978.

FOR THE U. S. NUCLEAR REGULATORY COMMISSION


Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and
Material Safety

Date: AUG 25 1982

ATTACHMENT

The packaging is constructed in accordance with Bingham-Willamette Co. Drawings 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-405, Sh. 1 of 1, Rev. G
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-494, Sh. 2 of 2, Rev. P
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 contents are as shown in Royal Industries, Inc., Drawing No. 130J039, Sh. 1 of 2, Rev. M and General Electric Drawings 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

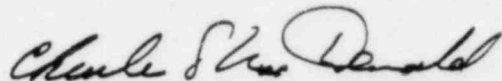
ATTACHMENT (Cont'd)

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
7548E27, 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

U.S. Nuclear Regulatory Commission
Transportation Certification Branch
Approval Record
Model No. S-6213 Power Unit Shipping Container
Docket No. 71-9186

By application dated July 27, 1982, U.S. Department of Energy requested renewal of Certificate of Compliance No. 9186. No changes have been authorized to the package design since approval of latest supplement dated July 24, 1978.

The staff concludes that the statements of the original application, as supplemented, satisfies the requirement for renewal of the Certificate of Compliance.



Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and
Material Safety, NMSS

Date: AUG 25 1982