

U.S. NUCLEAR REGULATORY COMMISSION
CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIALS PACKAGES

1. a. CERTIFICATE NUMBER	9788	b. REVISION NUMBER	4	c. PACKAGE IDENTIFICATION NUMBER	USA/9788/B(U)	d. PAGE NUMBER	1	e. TOTAL NUMBER PAGES	3
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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

Deactivated S5W Reactor Compartment Safety
Analysis Report for packaging dated July 1981,
as supplemented.

c. DOCKET NUMBER 71-9788

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.: S5W Reactor Compartment
- (2) Description

The package consists of a deactivated and defueled S5W Reactor Compartment which has been separated from the remainder of the submarine hull and prepared for shipment by sealing all openings and attaching structural pads for handling and tiedown. The package is between 35 and 45 feet long and approximately cylindrical with a maximum diameter of 33 feet. The reactor compartment itself is between two containment bulkheads which are added to the package before shipping. The ship's hull and the containment bulkheads define the package containment boundary. The forward containment bulkhead may include existing ship structure which has been sealed to form a watertight bulkhead. There is an overhang of the hull structure beyond the containment bulkheads at both ends of the package. The hull is constructed of HY-80 steel and the containment bulkheads are HT or HS steel. The maximum weight of the package is 2,160,000 pounds. The deactivated reactor plant remains in place within the compartment during shipment. The plant is defueled and drained except for small inaccessible pockets of water. Potentially radioactively contaminated components and piping from other locations in the ship may be placed within the package and secured.

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CONDITIONS (continued)

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5. (a) (3) Drawings

The package is constructed in accordance with the drawings, figures, and sketches included in the application (see Reference, below).

(b) Contents

Activated structural components associated with the reactor and plant piping, ion exchange resin, and other miscellaneous components contaminated with radioactive corrosion products (crud). Approximately 230 gallons of contaminated water may also be present in the package. Ion exchange resins with up to 3.1 curies of Co-60 may be shipped in the package.

6. The aft containment bulkheads and stiffeners, horizontal divider plate, and any structure between the pressure hull and the outer non-pressure hull must be recessed at least 7.0 inches from the aft end of the package. The forward containment bulkhead and stiffeners, existing stiffeners, deck structure, and horizontal girder must be recessed at least 15.0 inches from the forward end of the package.
7. The Lowest Service Temperature (LST) must be determined for each package. The package shall not be shipped unless its LST is less than or equal to the normal daily minimum temperature expected during the shipment of the package.
8. The minimum waiting time from final reactor shutdown until shipment shall be in accordance with Table 5.3 of the application, and shall not be less than 185 days.
9. Additional shielding may be provided on the exterior of the package by steel plates securely welded to the package surface so as to remain in place under the hypothetical accident conditions in 10 CFR Part 71.
10. In addition to the requirements of Subpart G of 10 CFR Part 71:
 - (a) Each package must be prepared for shipment and operated in accordance with the procedures described in Chapter 7.0, "Operating Procedures", of the application.
 - (b) Each package must be tested and maintained in accordance with the procedures described in Chapter 8.0, "Acceptance Tests and Maintenance Program", of the application.

Expiration date: December 31, 1992

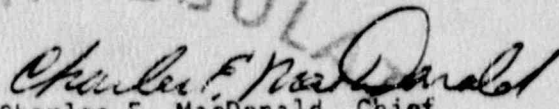
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REFERENCES

Deactivated S5W Reactor Compartment Safety Analysis Report for Packaging,
WARD-REO(c)-250, dated July 1981.

Supplement: Naval Reactors Memorandum Z#C90-14, 416 dated March 29, 1990 and
supplement dated July 6, 1990. Naval Reactors Memorandum Z # C90-14456 dated
August 30, 1990.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION


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

SEP 07 1987

Date: _____



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

APPROVAL RECORD

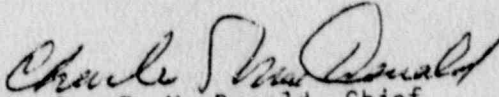
Model S5W Reactor Compartment Shipping Package
Certificate of Compliance No. 9788
Revision 4

By application dated August 30, 1990, the Division of Naval Reactors, U.S. Department of Energy requested an amendment to Certificate of Compliance No. 9788 to allow as much as 230 gallons of contaminated water to be retained in the package.

The water, which is retained in plant components and piping systems, contains only crud associated with the plant components. The total amount of radioactivity in this water is less than 0.1% of the crud sources in the package and thus, will not have any significant effects on the radioactive source assumed for shielding calculations.

The application performed an analysis to show that even if all 230 gallons of water in the package vaporized as a result of the hypothetical fire accident, the total internal pressure would not exceed the structural limits of the package.

The staff agrees with the applicant's conclusion that the addition of water in the package will not affect significantly the capability of the package to meet the requirements of 10 CFR Part 71.


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

Date: SEP 07 1990