

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIALS PACKAGES

1. CERTIFICATE NUMBER	2. REVISION NUMBER	3. PACKAGE IDENTIFICATION NUMBER	4. PAGE NUMBER	5. TOTAL NUMBER PAGES
9221	1	USA/9221/B()F	1	3

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 for Radioactive Material
Shipping Cask NRBK-41, 42 and 43 dated
March 11, 1968 as supplemented.

c. DOCKET NUMBER 71-9221

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.: NRBK-41

(2) Description

Top loading cylindrical lead shielded 304L stainless steel clad casks for the shipment of irradiated test specimens. The cask has an outside diameter of 27.16 inches and is 40 inches high. The outer shell is 1/2-inch thick stainless steel. The cask cavity is 5 inches in diameter by 16 inches deep and is provided with a bottom drain. The cavity shell is 1/4-inch thick stainless steel and is shielded by 10 inches of lead. The cask is closed by a lead-filled flanged plug fitted with an elastomer O-ring gasket and bolted closure. The cask has a seal-welded, 1/4-inch thick, stainless steel outer thermal shield which provides a 1/16-inch air gap between the outer surface of the cask outer shell and the inside surface of the thermal shield. A one-inch thick stainless steel plate is welded to the bottom of cask. A second one-inch thick stainless steel plate with a 1/8-inch deep, 25.5-inch diameter recess is welded to the first plate to provide a thermal shield for the bottom surface of the cask. The cask is bolted to a 48-inch square, all welded, "1" beam skid. Gross weight of the package is approximately 9,000 pounds.

(3) Drawings

The packaging is constructed in accordance with Battelle Memorial Institute Drawing No. 41-0001, Sheet 1, Rev. A and Sheet 2 of 2, Rev. B and Westinghouse Electric Corporation Drawing No. 1755E01, Rev. A.

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5. (b) Contents

(1) Type and form of material

Byproduct and special nuclear material in solid form, contained within the MIN-41 product container. The MIN-41 container is constructed in accordance with Westinghouse Electric Corporation, Drawing No. 2D77456.

(2) Maximum quantity of material per package

The fissile contents of the package must be limited to a maximum of 350 equivalent grams of U-235. The number of equivalent grams of U-235 is determined by the equation: $1.0 \times \text{grams U-235} + 1.4 \times \text{grams U-233} + 1.6 \times \text{grams plutonium}$. The maximum decay heat load per package must not exceed 900 Btu/hr for an exclusive use shipment or 250 Btu/hr for a non-exclusive use shipment.

(c) Fissile Class

6. In addition to the requirements of Subpart G of 10 CFR Part 71:

(a) The MIN-41 container must be tested for leak tightness within one year prior to use to a minimum sensitivity of 10^{-7} atm-cm³/sec.

(b) Prior to each shipment, the MIN-41 container must be leak tested after assembly to a minimum sensitivity of 10^{-5} atm-cm³/sec.

7. The NRBK-41 shipping container may be covered with a wrapping of polyvinyl chloride (PVC) during shipment provided the shipment is made in a closed vehicle. The applicable requirements of 10 CFR §71.87 must be satisfied prior to wrapping the shipping container.

8. Expiration date: January 31, 1996.

REFERENCES*

Safety Analysis for Radioactive Material Shipping Cask No. NRBK-41, 42 and 43 dated March 11, 1968.

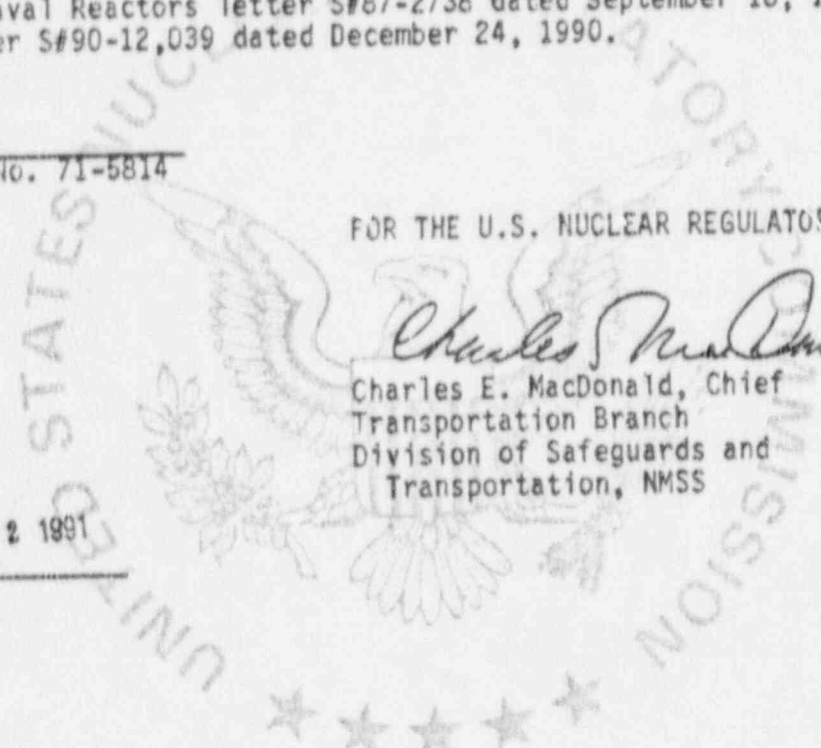
Supplements: Division of Naval Reactors letters S# 1458 dated June 19, 1968; S# 1570 dated September 19, 1968; S# 1597 dated September 9, 1968; S# 1658 dated October 22, 1968; S# 1681 dated November 7, 1968; S# 1690 dated November 22, 1968; S# 1903 dated March 19, 1969; S# 2000 dated June 2, 1969; S# 2509 dated June 10, 1970, and Bettis Atomic Power Laboratory letter WAPD-CL(IH)-733, dated October 10, 1968, and Division of Naval Reactors letters Z# 85-1605 dated April 1, 1985; S# 86-3305 dated February 3, 1986; and S# 86-3332 dated June 16, 1986, and Bettis Atomic Power Laboratory letter WAPD-D(PAS)-526 dated June 20, 1986; and Division of Naval Reactors letter S#87-2738 dated September 18, 1987; and Naval Reactors letter S#90-12,039 dated December 24, 1990.

* See Docket No. 71-5814

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

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

Date: FEB 12 1991





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

APPROVAL RECORD
Model No. NRBK-41
Certificate of Compliance No. 9221
Revision No. 1

By letter dated December 24, 1990, (S#90-12,039), Naval Reactors requested renewal of NRC Certificate of Compliance No. 9221 for the Model No. NRBK-41 shipping container. The application stated there has been no container modification or operational experience which would preclude certification of the container. However, the inner container was modified to include the use of lock nuts, and the head bolts are lockwired as a precaution against the loosening of threaded fasteners.

The use of lock nuts and lock wires should not have any adverse effects on the package. Thus, based on the statements in the application the staff concludes that the package meets the requirements of 10 CFR Part 71. Accordingly, the Certificate of Compliance has been renewed for a five year period which expires January 31, 1996.

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

Date: FEB 12 1991