NRC FORM 618
(5-86)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIALS PACKAGES

1.a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. PACKAGE IDENTIFICATION NUMBER	d. PAGE NUMBER	e. TOTAL NUMBER PAGES
9176	5	USA/9176/A	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*)

Nuclear Packaging, Inc.
1010 South 336th Street
Federal Way, WA 98003

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

NUPAC application dated October 29, 1982, as supplemented.

c. DOCKET NUMBER 71-9176

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 Nos.: NUPAC 14/210L, NUPAC 14/210H, CNSI 14-215H Series A, NUS 14-195L, and NUS 14-195H

(2) Description

Steel encased lead shielded casks for low specific activity material. The casks are right circular cylinders with a 77.25-inch ID by 80.25-inch IH cavity. The walls of the casks contain a lead thickness ranging from 1.25 to 1.88 inches encased in 0.38-inch thick inner steel shell and 0.88-inch thick outer steel shell. The top cover and cask bottom are made up of two steel plates with thickness of 2.0 inches. The primary cask lid is secured to the cylindrical cask body by eight, 1-1/4-inch rachet binders. An optional secondary lid is centered in the primary lid and is secured to the primary lid with eight, 3/4-inch studs and nuts. Each lid is provided with a Neoprene gasket seal. The casks may be provided with an optional 12 gauge stainless steel liner (seal welded along all edges), an optional lid vent line with pipe plug, and an optional 3/4-inch drain line and pipe plug. The casks are provided with four equally spaced lifting/tie-down devices. The primary lid is provided with three lifting lugs and the optional secondary lid is provided with one lifting lug. The casks gross weights range from 51,600 to 58,400 pounds.

Model Number	OD, inches	Lead Tk, inches	Top Tk, inches	Bottom Tk, inches	Gross Wt, pounds
NUPAC 14/210L, NUS 14-195L	82.25	1.25	4.0	4.0	51,600
NUPAC 14/210H, NUS 14-195H	83.5	1.88	4.0	4.0	58,400
CNSI 14-215H Series A	83.8	1.85	4.0	4.0	58,400

5. (a) (3) Drawings

Model Nos. NUPAC 14/210L and NUPAC 14/210H

The packages are fabricated in accordance with Nuclear Packaging, Inc. Drawing No. X-20-204D, Sheets 1 and 2, Rev. No. E.

Model Nos. CNSI 14-215H

The package is fabricated in accordance with Chem-Nuclear Systems, Inc. Drawing Nos. 24500-08, Sheets 1 and 2, Rev. 2; and 24500-05, Rev. 2.

Model Nos. NUS 14-195L and NUS 14-195H

The packages are fabricated in accordance with NUS Corporation Drawing No. 5025-M-2005; Sheet 1, Revision No. C; and Sheet 2, Revision No. E.

(b) Contents

(1) Type and form of material

(i) Dewatered, solids, or solidified waste, meeting the requirements for low specific activity material, in secondary containers; or

(ii) Activated solid components meeting the requirements for low specific activity material, in secondary containers.

(2) Maximum quantity of material per package

Greater than Type A quantity of radioactive material which may contain fissile material provided the fissile material does not exceed the limits in 10 CFR §71.53. The decay heat load is limited to 9 watts.

6. (a) For any package containing water and/or organic substances which could radiolytically generate combustible gases, determination must be made by tests and measurements or by analysis of a representative package such that the following criteria are met over a period of time that is twice the expected shipment time:

(i) The hydrogen generated must be limited to a molar quantity that would be no more than 5% by volume (or equivalent limits for other inflammable gases) of the secondary container gas void if present at STP (i.e., no more than 0.063 g-moles/ft^3 at 14.7 psia and 70°F); or

(ii) The secondary container and cask cavity must be inerted with a diluent to assure that oxygen must be limited to 5% by volume in those portions of the package which could have hydrogen greater than 5%.

For any package delivered to a carrier for transport, the secondary container must be prepared for shipment in the same manner in which determination for gas generation is made. Shipment period begins when the package is prepared (sealed) and must be completed within twice the expected shipment time.

6. (b) For any package shipped within 10 days of preparation, or within 10 days after venting of drums or other secondary containers, the determination in (a) above need not be made, and the time restriction in (a) above does not apply.

7. Maximum gross weight of the contents, secondary containers, and shoring is limited to 20,000 pounds.

8. Except for close fitting contents, shoring must be placed between secondary containers and the cask cavity to minimize movement during normal conditions of transport.

9. The lid and shield plug lifting lugs must not be used for lifting the cask, and must be covered in transit.

10. The cask must be provided with either (or both) a drain line or a lid vent line as shown in the drawing in order to provide a method to leak test the package.

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

    (i) Prior to each shipment, the packaging Neoprene lid seals must be inspected. The seals must be replaced with new seals if inspection shows any defects or every twelve (12) months, whichever occurs first. Cavity drain and vent lines must be sealed with appropriate sealant applied to the pipe plug threads.

    (ii) Each cask must meet the Acceptance Tests and Maintenance Program of Section 8.0 of the application. Maintenance and Gamma Scanning May be in accordance with NUS Process Services Procedures WM-026, Rev. A and WM-013, Rev. E. In addition, the cask must be leak tested at least every twelve (12) months in accordance with Appendix 8.4 of the application or NUS Process Services Procedure WM-011, Rev. E.

12. The ratchet binders on the cask lid must be torqued to 100±10 ft-lbs.

13. The cask body and each cask lid must be marked in accordance with 10 CFR §71.85(c).

14. The packages authorized by this certificate must be transported on a motor vehicle, railroad car, aircraft, inland watercraft, or hold or deck of a seagoing vessel assigned for the sole use of the licensee.

15. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.

16. Expiration date: March 31, 1988.

REFERENCES

Nuclear Packaging, Inc. application dated October 29, 1982*.

Supplements dated: February 18 and March 24, 1983*; and January 27, 1986.

Chem-Nuclear Systems, Inc. supplement dated: January 24, 1985.

NUS supplements dated: December 14, 1984; and May 14 and November 22, 1985.

* See Docket No. 71-9159

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

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

Date: FEB 19 1986

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

Transportation Certification Branch
Approval Record
Docket Nos. 71-9159, 71-9176, 71-9177, 71-9178, and 71-9179

C of C No.	NUPAC Designation
9159	NUPAC 14/190 (L, M and H)
9176	NUPAC 14/210 (L and H)
9177	NUPAC 10/140
9178	NUPAC 7/100
9179	NUPAC 6/100 (L and H)

By application dated January 27, 1986, Nuclear Packaging, Inc. (NUPAC) requested changes to their referenced package designs to reflect field experience. The ratchet binder torque is increased from 50 ft-lbs to 100±10 ft-lbs and the primary lid gasket thickness may be 0.38 through 0.50-inch thickness. It was stated that these changes will result in a more reliable seal. The above certificates have been revised to require the higher torque value and permit the range in gasket thickness.

The above changes will not effect the ability of the casks to meet the requirements of 10 CFR Part 71.

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

Date: FEB 19 1986

UNITED STATES
NUCLEAR REGULATORY COMMISSION
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Transportation Certification Branch
Approval Record
Docket Nos. 71-9159, 71-9176, 71-9177, 71-9178, and 71-9179

C of C No.	NUS Designation
9159	NUS/14-170 (L, M and H)
9176	NUS 14-195 (L and H)
9177	NUS 10-135A
9178	NUS 7-100
9179	NUS 6-80 (L and H)

By application dated December 14, 1984, as supplemented on May 14 and November 22, 1985, NUS Process Services Corporation (NUS) requested amendments to the above certificates. The changes involve component and material changes and redesignation of the cask model numbers for packages constructed to the drawings provided by NUS. Each cask must meet the Acceptance Tests and Maintenance Program of Section 8.0 of the Nuclear Packaging, Inc. application. In addition, revised Operating, Maintenance, Gamma Scanning, and Leak Testing Procedures applicable to the NUS packages were provided and may be used as applicable and in lieu of pertinent parts of Section 8.0 of the Nuclear Packaging. Inc. application. As a result of operating experience with similar packages, the ratchet binders on the cask lid must be torqued to 100±10 ft-lbs.

The above changes will not effect the ability of the casks to meet the requirements of 10 CFR Part 71.

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

Date: FEB 19 1986