NRC FORM 618
(6-86)
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 |
|---|---|---|---|---|
| 9108 | 8 | USA/9108/A | 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)

Chem-Nuclear Systems, Inc.
220 Stoneridge Drive
Columbia, SC 29210

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Chem-Nuclear Systems, Inc., application dated May 31, 1983, as supplemented.

c. DOCKET NUMBER 71-9108

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.: CNS 6-75

(2) Description

The packaging is a steel encased, lead shielded right circular cylinder for low specific activity radioactive material. The outside dimensions are 62 inches in diameter by 86-5/8 inches long and the cavity dimensions are 53 inches in diameter by 74-1/2 inches long. The 3-1/4-inch annulus between the outer 3/4-inch and inner 1/2-inch steel shells is filled with lead. The base plate consists of a 64-3/4-inch square 1-inch outer plate, 3 inches of lead and a 1/4-inch outer plate. The cover consists of a 1-inch steel outer and a 1/2-inch thick steel inner plate with 2-7/8 inches of lead shielding. A secondary cover, plugging the 20-inch central opening in the cover, is constructed of a 1/4-inch outer plate, 1-1/2 inches of lead, a 1/2-inch plate, 1-3/4 inches of lead and a 1/4-inch inner plate. The covers are Neoprene gasketed and secured by sixteen, 3/4-inch and eight, 5/8-inch bolts, respectively. The cavity is vented through a 1/8-inch plugged tube through the cover and drained through a 1/2-inch plugged tube at the bottom. Three lugs on the cask sides, cover ribs and secondary cover are provided for lifting. Four lugs on the cask shell are used for tie-down. Package gross weight is about 41,300 pounds.

(3) Drawing

The packaging is fabricated according to Chem-Nuclear Systems, Inc., Drawing No. 1036-D-01, Sheets 1 and 2, Revision M.

5. (b) Contents

(1) Type and form of material

Dewatered or solidified waste meeting the requirements of low specific activity material in secondary containers.

5. (b) Contents (Continued)

(2) Maximum quantity of material per package

Greater than Type A quantity of radioactive material with the weight of the contents, secondary containers and shoring not exceeding 10,300 pounds. The decay heat load shall not exceed 20 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.

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

8. The cover lifting lugs must not be used for lifting of the cask and must be plugged or covered in transit.

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

(a) Prior to each shipment, the packaging lid seals, if opened (or if security seal is broken), must be inspected. The seals must be replaced with new seals if inspection shows any defects or every twelve months, whichever occurs first. A determination must be made that closure seal replacement is current with the seal replacement schedule. Cavity drain line and vent connections must be sealed with appropriate sealant applied to the pipe threads.

9. (Continued)

   (b) The packaging must be maintained in accordance with the Maintenance Program of Section 5.0 of the application. In addition, the cask must be leak tested at least once every twelve months in accordance with Subsection 5.2.5 of the application.

   (c) The package shall be prepared for shipment and operated in accordance with the operating procedures of Section 4.0 of the application.

10. Fabrication of additional packaging after October 31, 1983 is not authorized.

11. The package authorized by this certificate must be transported on a motor vehicle, railroad car, aircraft, inland water craft, or hold or deck of a sea-going vessel assigned for sole use of the licensee.

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

13. Expiration date: September 30, 1993.

REFERENCES

Chem-Nuclear Systems, Incorporated, application dated May 31, 1983.

Supplements dated: September 9, 1983; January 27, 1984; and August 26, 1988.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

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

Date: SEP 19 1988

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

Transportation Branch
Approval Record
Model No. CNS 6-75
Docket No. 71-9108
Revision No. 8

By application dated August 26, 1988, Chem-Nuclear Systems, Inc. requested renewal of Certificate of Compliance No. 9108. In conjunction with the renewal request the applicant submitted revised operating and maintenance procedures which reflect current conditions. The revised pages provide a more detailed description of the operations pertaining to the removal and reinstallation of the cask on the trailer and of the maintenance requirements.

The certificate of compliance has been conditioned to require the packaging to be operated and maintained in accordance with Section 4.0 and 5.0 of the application.

The certificate of compliance has been renewed for a five year term which expires September 30, 1993.

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

Date: SEP 19 1988