

**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
6601	26	USA/6601/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)

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

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION:

Chem-Nuclear Systems, Inc. application
dated August 23, 1985, as supplemented.

c. DOCKET NUMBER

71-6601

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 8-120A

(2) Description

The packaging is a steel-encased, lead shielded shipping cask which weighs approximately 70,000 pounds when loaded. The cask is 73.5 inches in diameter by 92 inches high, with an effective cavity 62 inches in diameter by 75 inches long. Gamma shielding equivalent to 4.5 inches of lead is provided by lead and steel. The outer shell is fabricated of two, 3/4-inch thick steel plates and the inner shell of 1/2-and 1/4-inch thick plates. The cavity is closed and sealed by thirty-two, 1-3/4-inch bolts and a silicone O-ring within a recessed groove on the flange of the cask. A steel collar encircles the outer shell in the lid area. Shackles are used for lifting the packaging and the lid. Tie-down is accomplished through a steel structure which is not attached to the package. The lid provides several threaded and sealed access plugs and the base has a drain line.

(3) Drawings

The package is constructed in accordance with Chem-Nuclear Systems, Inc. Drawing No. 29008-1, Sheet 1 Rev. 2, and Drawing No. 29008-1, Sheet 2, Rev. 2.

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5. (b) Contents

(1) Type and form of material

Process solids, either dewatered, solid, or solidified, or solid reactor components, in secondary containers, and limited to the following:

- (i) Materials in which the radioactivity is essentially uniformly distributed and in which the estimated average concentration per gram of contents does not exceed:

0.0001 millicurie of radionuclides for which the A_2 quantity in Appendix A of 10 CFR Part 71 is not more than 0.05 curie;

0.005 millicurie of radionuclides for which the A_2 quantity in Appendix A of 10 CFR Part 71 is more than 0.05 curie, but not more than 1 curie; or

0.3 millicurie of radionuclides for which the A_2 quantity in Appendix A of 10 CFR Part 71 is more than 1 curie.

- (ii) Objects of nonradioactive material externally contaminated with radioactive material, provided that the radioactive material is not readily dispersible and the surface contamination, when averaged over an area of 1 square meter, does not exceed 0.0001 millicurie (220,000 disintegrations per minute) per square centimeter of radionuclides for which the A_2 quantity in Appendix A of 10 CFR Part 71 is not more than 0.05 curie, or 0.001 millicurie (2,200,000 disintegrations per minute) per square centimeter for other radionuclides.

(2) Maximum quantity of material per package

Greater than Type A quantity of radioactive material, not to exceed 2,000 times a Type A quantity, 40 thermal watts, and 20,000 pounds including weight of the contents, secondary container(s) and shoring. The contents may include fissile materials provided the mass limits of 10 CFR §71.53 are not exceeded.

6. Except for close fitting contents, wood shoring must be placed between the secondary container(s) (or activated components) and the cask cavity to prevent movement during normal conditions of transport.
7. Prior to each shipment, the lid gasket must be inspected. The gasket must be replaced if inspection shows any defect or every 12 months which ever occurs first.
8. Prior to each shipment, a determination must be made that closure seal replacement is current with the seal replacement schedule in Section 8.2.2 of the application.

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9. The packaging must be leak tested once every 12 months in accordance with Section 8.1.3 of the application.
10. The drain line and access plugs must be appropriately plugged and sealed prior to transport.
11. (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:
 - (1) The hydrogen generated must be limited to a molar quantity that would be no more than 5% 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/ft³ at 14.7 psia and 70°F); or
 - (2) 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.
12. 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 seagoing vessel assigned for sole use of the licensee.
13. In addition to the requirements of Subpart G of 10 CFR Part 71:
 - (a) Each packaging must meet the Acceptance Tests and Maintenance Program of Chapter 8 of the application; and
 - (b) The package must be operated and prepared for shipment in accordance with the Operating Procedures of Chapter 7 of the application.
14. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.
15. Expiration date: April 1, 1999. This certificate is not renewable.

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REFERENCES

Chem-Nuclear Systems, Inc., application dated August 23, 1985.

Supplements dated: December 30, 1985, January 16, 1991, October 29, 1991, January 7, 1992, and January 29 and March 19, 1996.

Northeast Nuclear Energy Company supplement dated: February 9, 1984.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Cass R. Chappell

Cass R. Chappell, Chief
Package Certification Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Date: 01/30/97



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

APPROVAL RECORD
Model No. CNS 8-120A
Certificate of Compliance No. 6601
Revision No. 26

Chem-Nuclear Systems, Inc. identified a typographical error in Certificate of Compliance No. 6601, Revision No. 26. The typographical error was an extra "not" in the third paragraph of Condition 5(b)(1)(i). As a result of the error, the concentration limit for certain radionuclides was not clear. The Certificate has been revised to correct the typographical error.

Cass R. Chappell

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Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Date 01/30/97