

U.S. NUCLEAR REGULATORY COMMISSION
CERTIFICATE OF COMPLIANCE
For Radioactive Materials Packages

1.(a) Certificate Number 9079	1.(b) Revision No. 9	1.(c) Package Identification No. USA/9079/A	1.(d) Pages No. 1	1.(e) Total No. Pages 3
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2. PREAMBLE

- 2.(a) This certificate is issued to satisfy Sections 173.393a, 173.394, 173.395, and 173.396 of the Department of Transportation Hazardous Materials Regulations (49 CFR 170-129 and 14 CFR 103) and Sections 146-19-10a and 146-19-100 of the Department of Transportation Dangerous Cargoes Regulations (46 CFR 146-149), as amended.
- 2.(b) The packaging and contents described in item 5 below, meets the safety standards set forth in Subpart C of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."
- 2.(c) 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—

3.(a) Prepared by (Name and address): Nuclear Packaging, Incorporated 815 South 28th Street Tacoma, WA 98402	3.(b) Title and identification of report or application: Nuclear Packaging, Incorporated, application dated November 29, 1982, as supplemented.
	3.(c) Docket No. 71-9079

4. CONDITIONS

This certificate is conditional upon the fulfilling of the requirements of Subpart D of 10 CFR 71, as applicable, and the conditions specified in item 5 below.

5. Description of Packaging and Authorized Contents, Model Number, Fissile Class, Other Conditions, and References:

(a) Packaging

- (1) Model Nos.: NUPAC 14D-2.0, HN-100 Series 2 and HN-100 Series 2A
- (2) Description

Steel encased, lead shielded casks for low specific activity material. The casks are right circular cylinders 81-1/2 inches high by 81-3/4 inches in diameter. The cask cavities are 73-3/8 inches high by 75-1/2 inches in diameter. The cask side walls consists of a 3/8-inch thick inner steel shell, a 1-3/4-inch lead shell, and a 7/8-inch thick outer steel shell. Each base is comprised of two, 2-inch thick steel plates welded together to form a 4-inch thick base which is integrally welded to the inner and outer steel shells of the side wall. A steel flange is welded to the inner and outer steel shells of the side wall at the top. The lid is comprised of two (2), 2-inch thick steel plates, which are stepped and welded together to mate with the steel flange. The cask closures are sealed by a Neoprene gasket located between the lid and steel flange, positive closure of the lid is accomplished by eight ratchet binders. The lid contains a centrally located shield plug comprised of two (2), 2-inch thick steel plates and one, 1-inch thick steel plate stepped and welded. The shield plug is sealed by a Neoprene gasket, and eight, 3/4-inch studs and nuts are used to provide positive closure.

5.(a) (2) Description (continued)

Tie-down is accomplished by four tie-down lugs welded to the cask body. There are four cask lifting lugs, three lid lifting lugs, and one shield plug lifting lug. The package gross weight is approximately 48,000 pounds.

(3) Drawings

The Model No. NUPAC 14D-2.0 packaging is fabricated in accordance with Nuclear Packaging, Incorporated Drawing No. X-20-215D, Revision B; or

The Model Nos. HN-100 Series 2 and HN-100 Series 2A packaging is fabricated in accordance with Hittman Nuclear & Development Corp. Drawing Nos.: C001-5-9122, Rev. 3; C001-5-9123, Rev. 3; and C001-5-9124, Rev. 2. The Model No. HN-100 Series 2 is constructed of A-36 carbon steel. The Model No. HN-100 Series 2A is constructed of A-516, Grade 70, carbon steel.

(b) Contents

(1) Type and form of material

Process solids, either dewatered, solid or solidified, meeting the requirements for low specific activity radioactive material as defined in 10 CFR §71.4(g), in secondary containers.

(2) Maximum quantity of material per package

Greater than Type A quantities of radioactive material which may contain fissile material provided the fissile material does not exceed the limits in 10 CFR §71.7. The weight of the contents and secondary containers shall not exceed 14,000 pounds and the internal decay heat load shall not exceed 7 watts.

6. Except for close fitting contents shoring must be placed between secondary containers and the cask cavity to prevent movement during normal conditions of transport.
7. The lid and shield plug lifting lugs must not be used for lifting the cask, and shall be covered in transit.

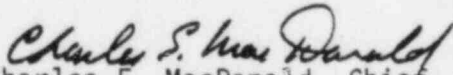
8. In addition to the requirements of Subpart D of 10 CFR Part 71:
 - (i) Prior to each shipment, the packaging lid seals, if opened (or if security seal is broken), must be inspected. The seals must be replaced with new seals if inspection shows any defects or every twelve (12) months, whichever occurs first. Cavity drain line 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 4.0 of the application. In addition, the cask must be leak tested at least once every twelve (12) months in accordance with Appendix 4.3.2 of the application.
9. The cask body and each cask lid shall be marked in accordance with 10 CFR §71.53(c).
10. The package 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.
11. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12(b).
12. Expiration date: April 30, 1988.

REFERENCES

Nuclear Packaging, Incorporated application dated November 29, 1982.

Supplements dated: March 3 and April 8, 1983.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION


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

Date: APR 18 1983

U.S. Nuclear Regulatory Commission
Transportation Certification Branch
Approval Record

Model Nos. NUPAC 14D-2.0, HN-100 Series 2, and HN-100 Series 2A
Docket No. 71-9079

By application dated November 29, 1982, as supplemented on March 3 and April 8, 1983, Nuclear Packaging Incorporated requested renewal of Certificate of Compliance No. 9079. The Certificate of Compliance was originally issued on the basis of an application prepared by Hittman Nuclear and Development Corporation. In the absence of a renewal request from Hittman Nuclear and Development Corporation, a consolidated application for renewal was submitted by Nuclear Packaging Incorporated. The consolidated application incorporated all supplemental information previously referenced by the Certificate of Compliance.

A review of the consolidated application and the packaging drawing confirmed that all appropriate supplement information has been incorporated.

On February 16, 1983, Hittman Nuclear and Development Corporation subsequently submitted a request to have the HN-100 Series 2 casks be included as authorized packaging in the Certificate of Compliance. In support of this request, an updated set of packaging drawings were submitted along with a response to the NRC questions raised on the Nuclear Packaging application for renewal. Since the questions were directed at the Nuclear Packaging application and a satisfactory response was received from Nuclear Packaging, the Hittman supplement was not considered other than adding the drawings and model numbers to the Certificate of Compliance.

A review of the Hittman drawings confirmed that the drawings are essentially the same drawings listed in the present Certificate of Compliance. The updating of the drawings consisted primarily of the addition of drawing notes which satisfy the comments made on the Nuclear Packaging renewal application. There is a difference in material specification requirements on the pins which attach the ratchet binders to the cask and cover lugs. The Hittman drawing specifies S.A.E. Gr. 5 and the NUPAC drawing specifies ASTM A-320. Based on the yield strength quoted from the 1971 S.A.E. Handbook, Standard J429, the use of S.A.E. Gr. 5 material results in a positive margin of safety. The staff concludes that either material may be used for these pins.

The Certificate of Compliance has been conditioned to require an annual leak test of the packaging to assure that conditions have not developed which may not be obvious from a visual examination (required by Condition No. 8) that would prevent making a seal.

We have clarified Condition No. 6 to require shoring between the secondary containers and the cask cavity only when the contents are not close fitting in order to minimize movement during normal conditions of transport. Also, we have limited the decay heat load to 7 watts which is approximately twice the shielding capability of the cask. This will help ensure the maximum contents are limited by shielding considerations.

No changes have been made to the packaging since approval of the last supplement dated June 22, 1982.

The staff concludes that the consolidated application, as supplemented, satisfies the requirement for renewal of the Certificate of Compliance.

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

Date: APR 18 1983