NRC FORM 618
(3-96)
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
9089	13	USA/9089/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)*

Molten Metal Technology, Inc.
1009 Commerce Park Drive
Oak Ridge, TN 37830

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION:

Westinghouse Hittman Nuclear, Inc.
Application dated October 28, 1988,
as supplemented.

c. DOCKET NUMBER

71-9089

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.: HN-194S

(2) Description

The cask is a steel annulus 84-1/4 inches high by 81-5/8 inches in diameter. The cavity is 75-1/2 inches high by 75-5/8 inches in diameter. The side walls consist of two plys of 1-1/2-inch steel. The 3-inch steel base is integrally welded to the cylinder. The lid is a 3-inch steel plate, stepped to mate with the upper flange of the cylinder. A centrally located shield plug is similarly constructed. The lid and plug are attached with stud-bolts and nuts and sealed with Buna N O-ring gaskets. A plugged drain line and/or optional vent/test in the secondary lid connection is provided. Four skewed lugs welded to the outer shell are used for tie down. There are three cask lifting lugs, three lid lifting lugs, and one shield plug lifting lug. The package gross weight is approximately 43,000 pounds.

(3) Drawings

The packaging is fabricated in accordance with Westinghouse Hittman Nuclear, Inc. Drawing Nos.: STD-02-078, Rev. 1 and STD-02-079, Rev. 0.

5. (b) Contents

(1) Type and form of material.

Process solids, either dewatered, solid or solidified, 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 which may contain fissile material provided the fissile material does not exceed the limits in 10 CFR §71.53. The weight of the contents, secondary containers, and shoring must not exceed 17,000 pounds and the internal decay heat load must not exceed 2 thermal 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:

   (1) 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 .053 g-moles/ft^3 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.

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

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

9. Packagings without a drain line must be provided with the optional vent/test connection in the cask secondary lid.

10. The drain line and optional vent/test connection must be appropriately plugged and sealed prior to transport.

11. Prior to each shipment, the packaging lid seals, if opened (or if the 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.

12. The packaging must be leak tested at least once every twelve months in accordance with Leak Test Procedure STD-P-02-002, Rev. 3, dated August 18, 1989. Each cask which has been damaged or repaired in the area of a seal must also be tested prior to subsequent use; normal gasket maintenance does not require a subsequent test.

13. Packagings fabricated after November 30, 1983, must be constructed of A-516, Grade 70 carbon steel.

14. 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 license.

15. The packaging shall be prepared for shipment and operated in accordance with the Operating Procedures of Section 7.0 of the application.

16. Each package must meet the Acceptance Tests and Maintenance Program of Section 8.0 of the application.

17. Packaging fabricated in accordance with Hittman Nuclear & Development Corporation Drawing Nos. C001-5-9128, Rev. 5 and C001-5-9129, Rev. 3 are not authorized after April 1989.

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

19. Expiration date: April 1, 1999. This certificate is not renewable.

REFERENCES

Westinghouse Hittman Nuclear, Incorporated application dated October 28, 1988.

Supplements dated: January 26, 1989; December 22, 1993; and October 10, 1997.

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: December 8, 1997

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

APPROVAL RECORD
Model No. HN-194S
Certificate of Compliance No. 9089
Revision No. 13

By letter dated October 10, 1997, Scientific Ecology Group, Inc., and Molten Metal Technology, Inc., requested that the certificate holder for Certificate of Compliance No. 9089 for the Model No. HN-194S package be changed from Scientific Ecology Group, Inc., to Molten Metal Technology, Inc. Molten Metal Technology, Inc., has accepted responsibility for the completeness and accuracy of the statements and representations of the previous certificate holder. Molten Metal Technology, Inc., will be responsible for maintenance of the certificate, the safety analysis report for the package design, and the quality assurance records in accordance with 10 CFR §71.91(c). Molten Metal Technology, Inc., stated that the records required by 10 CFR §71.91(c) for the package design will be maintained at their document control center in Oak Ridge, Tennessee. Molten Metal Technology, Inc., has been issued Quality Assurance Program Approval for Radioactive Material Packages No. 0870, under Subpart H of 10 CFR Part 71.

The Certificate has been revised to show Molten Metal Technology, Inc., as certificate holder. These changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Cass R. Chappell

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

Date: December 8, 1997