

CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIALS PACKAGES

U.S. NUCLEAR REGULATORY COMMISSION

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. PACKAGE IDENTIFICATION NUMBER	d. PAGE NUMBER	e. TOTAL NUMBER PAGES
9262	1	USA/9262/A	1	2

## 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)

Yankee Atomic Electric Company  
580 Main Street  
Bolton, MA 01740-1398

## b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Yankee Atomic Electric Company  
application dated March 23, 1995,  
as supplemented.

## c. DOCKET NUMBER

71-9262

## 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.: YNPS RPV

(2) Description

A reactor pressure vessel contained within a cylindrical steel outer packaging, which is welded closed and filled with concrete. The reactor vessel is an open, cylindrical, eight-inch thick carbon steel vessel with a hemispherical bottom head. The outer diameter of the reactor vessel is approximately 10 feet, 5 inches, and the length of the reactor vessel is approximately 26 feet, 10 inches. The reactor vessel main coolant nozzles are closed with shielded plugs. The reactor vessel is surrounded with three-inch thick thermal insulation. The reactor vessel contains an inner waste container, and is filled with concrete.

The outer packaging is composed of a three-inch thick cylindrical shell welded to a four-inch thick bottom plate, and is constructed of A516, Gr. 70 carbon steel. The four-inch thick top plate is attached to the reactor vessel flange by the existing reactor head studs, and is welded to the packaging outer shell. Caps are welded over the head studs. The region between the reactor vessel and the outer packaging is filled with concrete. The overall dimensions of the package are approximately 13 feet, 2 inches outer diameter, and 28 feet, 3 inches outer length, excluding the head studs and caps which extend beyond the top plate. The maximum weight of the package is 656,000 pounds.

(3) Drawings

The package is constructed and assembled in accordance with the following Yankee Atomic Electric Company Drawings:

YR-B-90-005, Rev. 3  
YR-B-90-006, Rev. 1  
YR-B-90-007, Rev. 0  
YR-B-90-008, Rev. 1  
YR-B-90-009, Rev. 0

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5.(b) Contents

(1) Type and Form of Material

Irradiated steel reactor pressure vessel, containing radioactive contamination and waste in solidified concrete, meeting the requirements of low specific activity radioactive material.

(2) Maximum Quantity of Material per Package

Greater than a Type A quantity of radioactive material contained in an irradiated reactor pressure vessel and associated contamination and solidified waste. Fissile material may be present provided the fissile material meets the exemption standards of 10 CFR §71.53.

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

- (a) The Federal Energy Regulatory Commission must specifically approve the adequacy of the Sherman Dam and spillway bridge for transport of the Model No. YNPS RPV package.
- (b) The Massachusetts Highway Department must specifically approve the adequacy of the roadway, including slope stability and roadway culverts, from the Yankee Nuclear Power Station to the rail line, for transport of the Model No. YNPS RPV package.
- (c) The package must be prepared for shipment and must be transported in accordance with Chapters 7 and 8 of the application.

- 7. This certificate authorizes a one-time shipment of a single package from the Yankee Nuclear Power Station to a disposal facility.
- 8. The package authorized by this certificate must be transported on a motor vehicle and on a railroad car assigned for the sole use of the licensee.
- 9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.
- 10. Expiration date: January 31, 2001.

REFERENCES

Yankee Atomic Electric Company application dated March 23, 1995.

Supplements dated: March 31, August 30, and December 15, 1995; November 14, 1996; and January 15, 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 01/30/97



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

APPROVAL RECORD  
Model No. YNPS RPV Package  
Certificate of Compliance No. 9262  
Revision No. 1

By application dated November 14, 1996, as supplemented January 15, 1997, Yankee Atomic Electric Company requested an amendment to Certificate of Compliance No. 9262, for the Model No. YNPS RPV package. The request was to modify the density of the concrete used to fill the reactor pressure vessel and the region between the reactor pressure vessel and the outer packaging. The modification was primarily due to weight restrictions for the rail transport of the package.

The package design originally specified a low density concrete (25-30 pcf) within the reactor vessel, and a normal density concrete (140-150 pcf) in the region between the reactor vessel and the outer packaging. The applicant provided a revised drawing of the package that shows the concrete densities that were actually achieved in preparing the reactor vessel package. The concrete density ranged from 25.7 to 74.2 pcf within the reactor vessel, and the average concrete density was 41.3 pcf in the region between the reactor vessel and the outer packaging. The maximum package weight was revised from 363.5 tons to 328 tons.

The applicant provided revised structural analyses, thermal analyses, and radiation analyses to show that the changes in concrete density would not affect the performance of the package. Since the structural analyses considered the weight of the concrete, but did not take structural credit for the concrete strength, the reduction in the concrete density did not affect the structural performance of the package. The applicant recalculated the package temperatures under the normal condition heat test using the revised thermal conductivity of the concrete. The temperatures were acceptable. The applicant revised the radiation analyses to consider the reduced shielding effects of the lower concrete density. In addition, the applicant reported that the radiation measurements on the outside of the package as prepared for transport which were within the limits specified in 10 CFR §71.47.

The package was approved for transport of low specific activity radioactive material under the provisions of 10 CFR Part 71 in effect at the time of the original application. Authorization for continued use of the package is subject to the provisions of 10 CFR §71.52.

The change in concrete densities does not affect the ability of the package to meet the requirements of 10 CFR Part 71.

*Cass R. Chappell*

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Package Certification Section  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Date 01/30/97