NRC FORM 618
(8-2000)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9330	0	71-9330	USA/9330/AF-96	1	OF	4

2. PREAMBLE

a. This certificate is issued to certify that the package (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)*

U.S. Department of Energy
Washington, DC 20585

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

U.S Department of Energy application dated April 1, 2008, as supplemented.

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.: ATR FFSC

(2) Description

An insulated stainless steel package for the transport of unirradiated research reactor fuel, including intact fuel elements or fuel plates. The packaging consists of: (1) a body; (2) a closure lid; and (3) inner packaging internals. The approximate dimensions and weights of the package are:

Overall package outer width and height	8 inches
Overall package length (including handle)	72 inches
Cavity diameter	5-3/4 inches
Cavity length	68 inches
Packaging weight (without internals)	240 pounds
Maximum package weight (including internals and contents)	290 pounds

The body is composed of two thin-walled, stainless steel shells. The outer shell is a square tube with an 8-inch cross section, a 72-inch length, and a 3/16 inch wall thickness. The inner shell is a round tube with a 6-inch diameter and a 0.120-inch wall thickness. The inner tube is wrapped with ceramic fiber thermal insulation, overlaid with a stainless steel sheet. At the bottom end, the shells are welded to a 0.88-inch thick stainless steel base plate. At the top end (closure end), the shells are welded to a 1.5-inch thick stainless steel flange.

5.(a)(2) Description (Continued)

The closure is composed of circular stainless steel plates with ceramic fiber insulation. The closure engages the top end flange by way of four bayonets that are rotated and secured by two spring pins. The closure is equipped with a handle, which may be removed during transport. The closure does not have a gasket or seal.

The package internals consist of either a Fuel Handling Enclosure for intact fuel elements, or a Loose Plate Basket Assembly for loose fuel plates.

(3) Drawings

The packaging is constructed and assembled in accordance with the following Areva Federal Services, LLC, or Packaging Technology, Inc., Drawing Nos.:

60501-10, Sheets 1-5, Rev. 2	ATR Fresh Fuel Shipping Container SAR Drawing
60501-20, Rev. 1	Loose Plate Basket Assembly
60501-30, Rev. 1	Fuel Handling Enclosure

(b) Contents

(1) Type and form of material

Unirradiated Mark VII Advanced Test Reactor (ATR) fuel. The fuel material is composed of uranium aluminide (UAl_x). The uranium is enriched to a maximum 94 weight percent U-235; the maximum U-234 content is 1.2 weight percent; and the maximum U-236 content is 0.7 weight percent. The fuel is contained in aluminum-clad fuel plates. The fuel meat thickness is a nominal 0.02 inch, and the fuel meat width ranges from approximately 1.5 inches to 3.44 inches. The active fuel length is approximately 48 inches.

For intact fuel elements: Elements are composed of 19 curved plates fitted within aluminum side plates, and the maximum channel thickness between fuel plates is 0.085 inch. The maximum mass of U-235 per intact fuel element is 1200 grams. The fuel element must be contained within the Fuel Handling Enclosure, as specified in 5.(a)(3).

For loose fuel plates: Loose plates may be flat or curved and may be banded or wire-tied in a bundle, and dunnage plates may be included. The fuel plates must be contained within a Loose Plate Basket Assembly, as specified in 5.(a)(3).

5.(b) Contents (Continued)

(2) Maximum quantity of material per package

The maximum total weight of contents and internals, including dunnage and other secondary packaging, is 50 lbs. Radioactive contents not to exceed a Type A quantity

For intact fuel elements: One fuel element.

For loose fuel plates: A maximum of 600 grams U-235.

(c) Criticality Safety Index (CSI) 4.0

6. Fuel elements and fuel plates may be bagged or wrapped in polyethylene.

7. Air transport of fissile material is not authorized.

8. In addition to the requirements of 10 CFR Subpart G:

(a) The package must be loaded and prepared for shipment in accordance with the Package Operations in Section 7 of the application.

(b) The package must be tested and maintained in accordance with the Acceptance Tests and Maintenance Program in Section 8 of the application.

9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

10. Expiration date: July 31, 2013.

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REFERENCES

U.S. Department of Energy application dated April 1, 2008.

Supplement dated: June 24, 2008.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Eric J. Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
And Safeguards

Date: 7/22/08