CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9292	3	71-9292	USA/9292/AF-85	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)*

Westinghouse Electric Company, LLC
P.O. Box 355
Pittsburgh, PA 15230-0355

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Westinghouse Electric Company, LLC application dated September 16, 2004, 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.: PATRIOT

(2) Description

A shipping container for unirradiated fuel assemblies. The package consists of a right rectangular metal inner container and a wooden outer container, with cushioning material between the inner and outer containers.

The metal inner container is approximately 11-1/4 inches high by 18-1/8 inches wide by 179-3/4 inches long. There are two channel sections within the inner container, and each channel section holds one BWR fuel assembly. The inner container is equipped with a lid and an end cap that are closed by 18 bolts and fastening lugs. The overall dimensions of the wooden outer container are approximately 30-1/4 inches wide by 31-3/4 inches high by 207-1/2 inches long. The cushioning material between the inner and outer containers is phenolic impregnated honeycomb and ethafoam. The inner container may be positioned on a series of vibration dampers mounted on the inside bottom of the wooden outer container.

The maximum weight of the package, including contents, is 2,988 pounds.

(3) Drawings

The packaging is constructed and assembled in accordance with Westinghouse Electric Company, LLC Drawing Nos.:

10014E27, Rev. 1, and
10014E28, Sheets 1 and 2, Rev. 1.

5.(b) Contents

(1) Type and form of material

The package is designed to hold two unirradiated BWR fuel assemblies, comprised of UO_2 fuel rods in a 10 x 10 square array. The fuel cross-sectional area is 25 square inches.

(i) Description of Assembly Type #1

Each assembly is made up of 96 full-length fuel rods having a maximum active fuel length of 150 inches. The fuel pellet diameter is 0.819 ± 0.002 cm, encapsulated in 0.063 cm zirconium alloy cladding. There is a 0.0085 cm gap between the pellets and the cladding. The maximum U-235 enrichment of any fuel rod is 5.0 weight percent. Each assembly contains water holes in the four center rod positions of the assembly. Three different fuel package loadings have the following specifications:

(A) Maximum average U-235 enrichment is 4.0 weight percent within any axial zone of the assembly; Maximum U-235 content is 3.25 weight percent of any gadolinia-urania rod or axial zone of any gadolinia-urania fuel rod; Maximum number of fuel rods per assembly containing 5.0 weight percent U-235 enriched pellets is 36; Maximum U-235 enrichment is 4.0 weight percent for all edge rods, and 3.5 weight percent for all corner rods; Each assembly must include at least eight fuel rods with a minimum gadolinia content of 2.5 weight percent in all axial regions with enriched pellets. The eight gadolinia rods are arranged with two rods in each quadrant of the fuel assembly. The two gadolinia rods within each quadrant must be symmetric about the geometric diagonal of the fuel assembly, and must not be in an edge or corner rod location. Other fuel rods containing gadolinia may be present.

(B) Maximum average U-235 enrichment is 4.725 weight percent within any axial zone of the assembly; Maximum U-235 content is 4.2 weight percent of any gadolinia-urania rod or axial zone of any gadolinia-urania fuel rod; Maximum number of fuel rods per assembly containing 5.0 weight percent U-235 enriched pellets is 52; Maximum U-235 enrichment is 4.5 weight percent for all edge rods, and 4.0 weight percent for all corner rods; Each assembly must include at least eight fuel rods with a minimum gadolinia content of 5.3 weight percent in all axial regions with enriched pellets. The eight gadolinia rods are arranged with two rods in each quadrant of the fuel assembly. The two gadolinia rods within each quadrant must be symmetric about the geometric diagonal of the fuel assembly, and must not be in an edge or corner rod location. Other fuel rods containing gadolinia may be present.

(C) Maximum average U-235 enrichment is 4.858 weight percent within any axial zone of the assembly; Maximum U-235 content is 4.2 weight percent of any gadolinia-urania rod or axial zone of any gadolinia-urania fuel rod; Maximum number of fuel rods per assembly containing 5.0 weight percent U-235 enriched pellets is 80; Maximum U-235 enrichment is 4.0 weight percent for all corner rods; Each assembly must include at least twelve fuel rods with a minimum gadolinia content of 2.4 weight percent in all axial regions with enriched pellets. The twelve gadolinia rods are arranged with three rods in each quadrant of the fuel assembly. The three gadolinia rods within each quadrant must be symmetric about the geometric diagonal of the fuel assembly, and must not be in an edge or corner rod location. Other fuel rods containing gadolinia may be present.

5.(b)(1) Contents (continued)

(ii) Description of Assembly Type #2

Each assembly is made up of 96 fuel rods having a maximum active fuel length of 150 inches. Each assembly contains four one-third length fuel rods and eight two-thirds length fuel rods. The four one-third length fuel rods are located on the outside corners of the assembly. The eight two-thirds length fuel rods, arranged as two rods in each quadrant of the assembly, are located on the geometric diagonal toward the center of the assembly. The fuel pellet diameter is 0.848 cm nominal, encapsulated in 0.061 cm nominal zirconium alloy cladding. There is a 0.0075 cm gap between the pellets and the cladding. The maximum U-235 enrichment of any fuel rod is 5.0 weight percent. Each assembly contains water holes in the four center rod positions of the assembly. The fuel assembly must be transported in channels. The specifications for each one-third length axial section of the fuel assembly are as follows:

(A) Upper section must contain 84 fuel rods, arranged as 21 rods per quadrant. Maximum U-235 enrichment of any rod is 5.0 weight percent. This section of the assembly must include at least eight fuel rods with a minimum gadolinia content of 4.0 weight percent in all axial regions with enriched pellets. The eight gadolinia rods are arranged with two rods in each quadrant of the fuel assembly, arranged symmetrically along the geometric diagonal of the assembly, and must not be in an edge or corner rod location. The section must contain 12 water holes, arranged as three water holes in each quadrant of the assembly. One of the three water holes within each quadrant must be located on the outside corner location of the assembly, and the other two water holes must be located on the geometric diagonal of the fuel assembly. Other fuel rods containing gadolinia may be present.

(B) Middle section must contain 92 fuel rods, arranged as 23 rods per quadrant. Maximum U-235 enrichment of any rod is 5.0 weight percent. This section of the assembly must include at least ten fuel rods with a minimum gadolinia content of 4.0 weight percent in all axial regions with enriched pellets. The ten gadolinia rods must be arranged symmetrically along the geometric diagonal of the assembly, and must not be in an edge or corner rod location. The section must contain four water holes, arranged as one water hole in each quadrant of the assembly. Each water hole within each quadrant must be located on the outside corner location of the assembly. Other fuel rods containing gadolinia may be present.

(C) Lower section must contain 96 fuel rods, arranged as 24 rods per quadrant. Maximum U-235 enrichment of any rod is 5.0 weight percent. This section of the assembly must include at least twelve fuel rods with a minimum gadolinia content of 4.0 weight percent in all axial regions with enriched pellets. The twelve gadolinia rods must be arranged symmetrically along the geometric diagonal of the assembly, and must not be in an edge or corner rod location. Other fuel rods containing gadolinia may be present.

5.(b)(2) Maximum quantity of material per package

Two fuel assemblies. The total weight of contents not to exceed 1,320 pounds.

5.(c) Criticality Safety Index: 1.0

6. Each fuel assembly must be unsheathed or must be enclosed in an unsealed, polyethylene sheath which may not extend beyond the ends of the fuel assembly. The ends of the sheath may not be folded or taped in any manner that would prevent the flow of liquids into, or out of, the sheathed fuel assembly.

7. For the contents described in 5.(b)(1)(i), polyethylene inserts may be positioned between rods within the fuel assemblies. The quantity of polyethylene must not exceed 18.33 g polyethylene per centimeter length of the fuel assembly, and must not exceed a total of 6.99 kg per fuel assembly. The polyethylene may be borated. No polyethylene inserts may be used for the contents described in 5.(b)(1)(ii).

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

   (a) The package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of the application.

   (b) Each packaging must be acceptance tested and maintained in accordance with the Acceptance Tests and Maintenance Program in Chapter 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: August 31, 2010.

REFERENCES

Westinghouse Electric Company, LLC consolidated application dated: September 16, 2004.

Supplements dated: April 14, June 14, and August 9, 2005.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Robert Lewis, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Date 31 Aug 2005