Westinghouse Electric Company
Nuclear Fuel
Columbia Fuel Site
P.O. Drawer R
Columbia, South Carolina 29250
USA

Attn: Document Control Desk
Director, Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Direct tel: (803) 647-3167
Direct fax: (803) 695-4164
e-mail: vescovpj@westinghouse.com

Your ref: Docket No. 71-9297
Our ref: LCPT-10-15

June 10, 2010

SUBJECT: Event Report - Docket 71-9297, Certificate of Compliance USA/9297/AF-96, TRAVELLER Shipping Package

Dear Mrs. Vonna Ordaz:

A written report is hereby submitted in compliance with 10 CFR 71.95. The written report is for an instance in which a condition of approval in the Certificate of Compliance for Model **TRAVELLER** (USA/9297/AF-96) was not observed in making a shipment.

Background

The approved contents as specified in condition 5.(b)(1)(i) Parameters for 16x16 Fuel Assemblies, includes four Fuel Assembly Types for the 16 x16 fuel assembly description. The fuel assembly types are W-STD, CE, NGF, and ATOM. The NGF fuel assembly type in the Certificate of Compliance (CoC) is a fuel design for Westinghouse plants. The CE fuel assembly type evaluated in the application is specifically a CE16NVA. In addition to the CE16NVA, there are two other 16X16 CE fuel assembly designs that are identified as CE16VA and CE16NFG.

Approval of the 16X16 CE fuel assembly is specified as follows in the Certificate of Compliance:

5. (b) Contents (Type and Form of Material)

(1) Fuel Assembly

(i) Unirradiated PWR uranium dioxide fuel assemblies with a maximum uranium-235 enrichment of 5.0 weight percent. The parameters of the fuel assemblies that are permitted are as follows:

*** Electronically approved records are authenticated in the Electronic Document Management System.**

Parameters for 16 x 16 Fuel Assemblies

Fuel Assembly Description	16 x 16	16 x 16	16 x 16	16 x 16
Fuel Assembly Type	W-STD	CE	NGF	ATOM
No. of Fuel Rods per Assembly	235	236	235	236
No. of Non-Fuel Rods	21	20	21	20
Nominal Guide Tube Wall Thickness	0.046 cm (0.018 in.)	0.102 cm (0.040 in.)	0.041 cm (0.016 in.)	0.057 cm (0.023 in.)
Nominal Guide Tube Outer Diameter	1.196 cm (0.471 in.)	2.489 cm (0.980 in.)	1.204 cm (0.474 in.)	1.354 cm (0.533 in.)
Nominal Pellet Diameter	0.819 cm (0.323 in.)	0.826 cm (0.325 in.)	0.784 cm (0.309 in.)	0.914 cm (0.360 in.)
Nominal Clad Outer Diameter	0.950 cm (0.374 in.)	0.970 cm (0.382 in.)	0.914 cm (0.360 in.)	1.075 cm (0.423 in.)
Nominal Clad Thickness	0.057 cm (0.023 in.)	0.064 cm (0.025 in.)	0.057 cm (0.023 in.)	0.072 cm (0.029 in.)
Clad Material	Zirconium alloy	Zirconium alloy	Zirconium alloy	Zirconium alloy
Nominal Assembly Envelope	19.72 cm (7.76 in.)	20.63 cm (8.12 in.)	19.72 cm (7.76 in.)	22.95 cm (9.03 in.)
Nominal Lattice Pitch	1.232 cm (0.485 in.)	1.285 cm (0.506 in.)	1.232 cm (0.485 in.)	1.430 cm (0.563 in.)

The difference in fuel rod dimensions between the CE16NVA and CE16VA (0.0005 inch) is not considered significant enough to change basis for demonstration of maximum reactivity in the application. The CE16NGF fuel rod dimensions are the same as the 17X17 OFA fuel rod dimension, however the lattice arrangement differs significantly. The CE16NGF is not evaluated in the application and as such is not an approved contents for the Traveller package.

Fuel Assembly Type	Pellet OD	Fuel Rod ID	Fuel Rod OD	Fuel Rod Pitch	Active Fuel Length
CE16NVA	0.3250	0.3320	0.382	0.506	150.00
CE16VA	0.3255	0.3320	0.382	0.506	150.00, 136.70
CE16NGF	0.3225	0.3290	0.3740	0.506	150.00

Event Description

The applicant failed to recognize that the Traveller package did not include the fuel parameters for the CE16NGF fuel design. All CE 16X16 fuel assembly types were previously approved for transport in the ABB 927 PWR fuel package. The ABB 927 had been used to ship all CE fuel prior to decertification of this package in October 2008. The Traveller replaced the ABB 927 and is now used to transport 16X16 fuel assemblies to Combustion Engineering plants. The omission of the CE16NGF fuel assembly type was discovered on or about April 15, 2010, during a review of a planned shipment to the Palo Verde nuclear plant in June 2010. Prior to this discovery, the CE16NGF fuel assemblies were transported to two power plants during the period between June 22, 2009 and September 17, 2009. Eighty nine (89) fuel assemblies were

*** Electronically approved records are authenticated in the Electronic Document Management System.***

transported to Arkansas Nuclear Unit 2 and 117 fuel assemblies were transported to Waterford Unit 3 during this period of four months in 2009.

Safety Significance

The fuel designs are evaluated in the application for the Traveller by comparing the reactivity of isolated fuel assemblies. The demonstration of the maximum reactivity for the Traveller package reveals that the 17X17 fuel lattice designs are the most reactive. The reactivity of the CE16NGF fuel assembly is similar to the other 16X16 CE fuel assembly types. The safety significance of this event is low, and this event did not result in any exposure of individuals to radiation or to radioactive materials beyond that expected for routine transportation conditions.

Corrective Action

A request was submitted to the NRC to add the CE16NFG fuel parameters to the approved contents by letter dated April 30, 2010, from Westinghouse Electric Company. In addition to the corrective action taken to revise the package application and approval certificate, a causal analysis will be done to determine if there are additional actions required to reduce the probability of similar events in the future.

Please contact Peter Vescovi at 803 647-3167 for any additional information about this event.

Sincerely,

** Electronically approved*

Peter J. Vescovi
WESTINGHOUSE ELECTRIC COMPANY, LLC
NF Global Supply Chain Management
Global Logistics/Licensing, Compliance and Package Technology

cc

Brian Bayley, Director, Global Logistics
Norman Kent, Manager, Licensing, Compliance and Package Technology
Mark Rosser, Manager, Environment, Health, and Safety
Cary Alstadt, Operations Manager, Columbia Fuel Fabrication Facility
Michele Sampson, Project Manager, NRC NMSS/SFST