



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

December 8, 2009

Mr. Peter J. Vescovi  
Westinghouse Electric Company, LLC  
Columbia Fuel Site  
P.O. Drawer R  
Columbia, South Carolina 29250

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF THE  
CERTIFICATE OF COMPLIANCE NO. 9239, REVISION FOR THE MODEL  
NOS. MCC-3, MCC-4, AND MCC-5 PACKAGINGS (TAC NO. L24390)

Dear Mr. Vescovi:

By application dated October 28, 2009, Westinghouse Electric Company, LLC (Westinghouse) requested an amendment to Certificate of Compliance (CoC) No. 9239 for the Model Nos. MCC-3, MCC-4, and MCC-5 packagings. Westinghouse requested the addition of a modified unirradiated 15x15 (Type B) OFA fuel assembly with seven (7) of the fuel rods replaced with solid stainless steel rods to the contents for the CoC, and also requested a change in the annular pellet zone length specified in the CoC.

In connection with our review, we need the information identified in the enclosure to this letter. To assist us in scheduling staff review of your response and to meet your identified shipping needs, we request that you provide this information by December 17, 2009. If you are unable to provide a response by that date, our review may be delayed.

Please reference Docket No. 71-9239 and TAC No. L24390 in future correspondence related to this request. The staff is available to meet to discuss your proposed responses. If you have any questions regarding this matter, I may be contacted at (301) 492-3292.

Sincerely,

A handwritten signature in black ink, appearing to read "Michele M. Sampson".

Michele M. Sampson, Senior Project Manager  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 71-9239  
TAC No. L24390

Enclosure: Request for Additional Information

cc w/encl: E. Redmond, NEI

**Request for Additional Information**  
**Westinghouse Electric Company, LLC**  
**Docket No. 71-9239**  
**Certificate of Compliance No. 9239**  
**Model Nos. MCC-3, MCC-4, and MCC-5**

By application dated October 28, 2009, Westinghouse Electric Company, LLC (Westinghouse) requested an amendment to Certificate of Compliance (CoC) No. 9239 for the Model Nos. MCC-3, MCC-4, and MCC-5 packagings. Westinghouse requested the addition of a modified unirradiated 15x15 (Type B) OFA fuel assembly with seven (7) of the fuel rods replaced with solid stainless steel rods to the contents for the CoC, and also requested a change in the annular pellet zone length specified in the CoC.

This request for additional information (RAI) identifies information needed by the U.S. Nuclear Regulatory Commission staff in connection with its review of the application. The requested information is identified by enclosure number from the October 28, 2009, application. NUREG-1609, "Standard Review Plan for Transportation Packages for Radioactive Material," was used by the staff in its review of the application.

Each individual RAI describes information needed by the staff for it to complete its review of the application and to determine whether the applicant has demonstrated compliance with regulatory requirements.

**Enclosure 2 – 15x15 Modified Assembly**

2-1: Clarify whether the  $k_{eff}$  values in Table 1 include bias and uncertainty adjustments.

The applicant only gives a single value in Table 1 and it is unclear what all the value encompasses. As stated in Section 6.5.1.2 of NUREG-1609, "Standard Review Plan for Transportation Packages for Radioactive Material," (SRP), the application should show that the sum of the  $k_{eff}$  from the code, two standard deviations, and the bias adjustment, should not exceed 0.95. If Table 1 does not give a  $k_{eff}$  with the bias and uncertainty, please provide them and demonstrate that the acceptance criterion in the SRP is met.

This clarification is needed to determine compliance with 10 CFR 71.55.

2-2: Provide a benchmark analysis for the code calculations used to demonstrate compliance with the acceptance criterion in the SRP as discussed in RAI 2-1 above.

The benchmark analysis needs to establish a bias adjustment that is applicable to the methodology used and the system being evaluated (including the code, cross sections, code options, modeling approach and the system's components, geometry and constituents). The applicant should use the same methodology throughout the entire application. Section 6.5.7 of the SRP and NUREG/CR-6361 provide guidance on appropriate benchmarking evaluations.

This additional information is needed to determine compliance with 10 CFR 71.55.

- 2-3: Justify how the modified assembly is subcritical in the package.

The application gives the  $k_{\text{eff}}$  for the modified assembly surrounded by water but does not discuss how the packaging may affect criticality. The staff requests a demonstration showing that the modified assembly is subcritical when considering packaging or a demonstration showing that the modified assembly is still bounded by the Type B evaluation in the application.

This justification is needed to determine compliance with 10 CFR 71.55.

### Enclosure 3 – Annular Pellet Blanket

- 3-1: Clarify which system of codes was used to evaluate the annular pellet blankets.

Table 1 references the SCALE 4.4 system of codes, however, in the Methodology section on the same page and in the input file, it states SCALE 5.1. This clarification is needed to determine what benchmarking evaluations are applicable.

This clarification is needed to determine compliance with 10 CFR 71.55.

- 3-2: Clarify whether the  $k_{\text{eff}}$  values in Table 1 include bias adjustments.

The applicant only gives a value for  $k_{\text{eff}}$  and the uncertainty in Table 1, and it is unclear whether the bias is included. As stated in Section 6.5.1.2 of NUREG-1609, the application should show that the sum of the  $k_{\text{eff}}$  from the code, two standard deviations, and the bias adjustment, should not exceed 0.95. If Table 1 does not give  $k_{\text{eff}}$  with the bias adjustment, please provide them and demonstrate that the acceptance criterion in the SRP is met.

This clarification is needed to determine compliance with 10 CFR 71.55.

- 3-3: Provide a benchmark analysis for the code calculations used to demonstrate compliance with the acceptance criterion in the SRP as discussed in RAI 2 above.

The benchmark analysis needs to establish a bias adjustment that is applicable to the methodology used and the system being evaluated (including the code, cross sections, code options, modeling approach and the system's components, geometry and constituents). The applicant should use the same methodology throughout the entire application. Section 6.5.7 of the SRP and NUREG/CR-6361 provide guidance on appropriate benchmarking evaluations.

This additional information is needed to determine compliance with 10 CFR 71.55.

- 3-4: Justify how the modified assembly is subcritical in the package.

The application gives the  $k_{\text{eff}}$  for the modified assembly surrounded by water but does not discuss how the packaging may affect criticality. The staff request a demonstration showing that the modified assembly is subcritical when considering packaging or a

demonstration showing that the modified assembly is still bounded by the Type A evaluation in the application.

This justification is needed to determine compliance with 10 CFR 71.55.

3-5: Provide dimensions for the annular pellet blanket.

Figure 1 appears to have dimensions on it, but they are not legible. Figure 2 provides a diagram of the annular pellet blanket, however the dimensions are not provided. The dimensions are necessary for the staff to do an independent confirmatory calculation.

This additional information is needed to determine compliance with 10 CFR 71.55.

3-6: Justify the differences in the dimensions used in the input file for the annular pellet blanket.

The dimensions used for the cross section processing in the input file are not consistent with the geometry used to describe the fuel rods. A justification of the reason behind the different dimensions used is needed.

This justification is needed to determine compliance with 10 CFR 71.55.

3-7: Justify the use of the asymslabcell celldata card in the input file.

It is unclear why the asymslabcell was needed in the input file. A justification is needed to ensure that the code was used properly.

This justification is needed to determine compliance with 10 CFR 71.55.