



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

February 5, 2016

Mr. Barry K. Miles  
Division of Naval Reactors  
U.S. Department of Energy  
Washington, D.C. 20585

SUBJECT: APPLICATION FOR THE AMENDMENT FOR THE S-6213 POWER UNIT  
SHIPPING CONTAINER – REQUEST FOR ADDITIONAL INFORMATION (TAC  
NO. L25034)

Dear Mr. Miles:

By letter dated June 13, 2015, you submitted an application for amendment to Certificate of Compliance No. 9186, for the Model Nos. Model 1, S-6213 Power Unit Shipping Container and Model 2, S-6213 Power Unit Shipping Container. The application, which requests approval of the Next Generation Reactor Core fuel as authorized contents.

In connection with our review, we need the information identified in the enclosure to this letter. Additional information requested by this letter should be submitted in the form of revised safety analysis report pages.

Please reference Docket No. 71-9186 and TAC No. L25034 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, please contact me at (301) 415-6577.

Sincerely,

**/RA/**

Bernard H. White, Senior Project Manager  
Spent Fuel Licensing Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 71-9186  
TAC No. L25034

Enclosure: Request for Additional Information

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NAVAL REACTORS

DOCKET NO. 71-9186

REQUEST FOR ADDITIONAL INFORMATION

MODEL NO. S-6213 POWER UNIT APPLICATION

By letter dated June 13, 2015, you submitted an application for amendment to Certificate of Compliance No. 9186, for the Model No. S-6213 Power Unit transport package. This request for additional information identifies information needed by the U.S. Nuclear Regulatory Commission (NRC) staff in connection with its review of the application. The requested information is listed by chapter number and title in the safety analysis report (SAR). The staff used the guidance provided in NUREG-1609, "Standard Review Plan for Transportation Packages for Radioactive Material," in its review of the application.

Each question 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.

**Chapter 3 – Thermal Evaluation**

Revise the hypothetical accident conditions thermal evaluation based on the thermal features described below for Model 1, S-6213 Power Unit Shipping Container and Model 2, S-6213 Power Unit Shipping Container.

As described in SAR Section 3.5, the applicant evaluated the 30-minute thermal evaluation by assuming the proposed contents (next generation reactor (NGR) Virginia Forward Fit (VAFF) fresh fuel) has an initial temperature of 100°F, using an exchange factor of 0.818 for radiation heat transfer, and without a post-fire thermal analysis.

The applicant should to revise/perform the hypothetical accident conditions thermal evaluation based on the thermal features described as below:

- (a) Instead of using an exchange factor 0.818 (based on emissivity/absorptivity = 0.9), using an exchange factor of 0.9 directly for radiation heat input in the hypothetical accident conditions 30-minute thermal evaluation.
- (b) Evaluate the post-fire cooldown following the 30-minute fire for hypothetical accident conditions to ensure that maximum temperature of the contents has been achieved.

The applicant should verify whether the fuel cladding will be damaged by the container internal pressure, based on the maximum fuel cladding temperature from the revised hypothetical accident conditions thermal calculation.

This information is required by the staff to access compliance with 10 CFR 71.35 and 71.73.

Enclosure

## **Chapter 4 – Containment Evaluation**

Confirm that the containment boundary's release fraction after the tests for normal conditions of transport and hypothetical accident conditions results in meeting the criteria in 10 CFR 71.43 and 71.51, respectively, due to its design and fabrication.

The SAR indicates that the content has an activity greater than an A<sub>2</sub> quantity; however, the description of the containment boundary does not state that it is "leaktight" ( $1 \times 10^{-7}$  ref cc/sec as defined by ANSI N14.5, "Radioactive Materials - Leakage Tests on Packages for Shipment"). The application appears to indicate that the release fraction from the containment boundary is zero due to the design and fabrication.

This information is needed to determine compliance with 10 CFR 71.43 and 10 CFR 71.51.