



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

May 12, 2015

Mr. Mano Nazar  
President and Chief Nuclear Officer  
Nuclear Division  
NextEra Energy  
P.O. Box 14000  
Juno Beach, FL 33408-0420

SUBJECT: ST. LUCIE PLANT, UNIT NO. 2 - REQUEST FOR ADDITIONAL INFORMATION  
REGARDING LICENSE AMENDMENT REQUEST AND EXEMPTION  
REQUEST REGARDING THE TRANSITIONING TO AREVA FUEL  
(TAC NOS. MF5494 AND MF5495)

Dear Mr. Nazar:

By letter dated December 30, 2014, as supplemented by letter dated March 23, 2015 (Agencywide Documents Access and Management System Accession Nos. ML15002A091 and ML15084A011, respectively), Florida Power & Light Company (FPL) requested an amendment to the Technical Specifications (TSs) of Renewed Facility Operating License No. NPF-16 and asked for an exemption from the regulation for St. Lucie Plant, Unit No. 2 (SL-2). The proposed amendment would revise the TSs to allow the use of AREVA fuel at SL-2. Additionally, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.12, FPL requests an exemption from the provisions of 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems [ECCSs] for light-water nuclear power reactors," and Appendix K to 10 CFR Part 50, "ECCS Evaluation Models," to allow the use of M5<sup>®</sup> fuel rod cladding in future core reload applications for SL-2.

The U.S. Nuclear Regulatory Commission staff has reviewed the amendment and exemption requests submitted by FPL and determined that additional information is needed as set forth in the enclosure.

On April 29, 2015, a draft of these questions was sent to Mr. William Cross of your staff to ensure that the questions were understandable, the regulatory basis for the questions was clear, and to determine if the information was previously docketed. On May 4, 2015, Mr. Cross indicated by e-mail that the request is clear, a conference call to clarify the questions would not be necessary, and FPL agreed to submit a response by June 3, 2015.

M. Nazar

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If you have any questions, please contact Robert L. Gladney at 301-415-1022 or [Robert.Gladney@nrc.gov](mailto:Robert.Gladney@nrc.gov).

Sincerely,

A handwritten signature in black ink, reading "Robert L. Gladney" followed by a stylized flourish.

Farideh E. Saba, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosure:  
Request for Additional Information

cc w/enclosure: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION  
REGARDING PROPOSED LICENSE AMENDMENT REQUEST AND EXEMPTION REQUEST  
TO ALLOW THE TRANSITION TO AREVA FUEL  
FLORIDA POWER & LIGHT COMPANY  
ST. LUCIE PLANT, UNIT NO. 2  
DOCKET NO. 50-389

By letter dated December 30, 2014, as supplemented by letter dated March 23, 2015 (Agencywide Documents Access and Management System Accession Nos. ML15002A091 and ML15084A011, respectively), Florida Power & Light Company (FPL, the licensee) submitted a license amendment request to the U.S. Nuclear Regulatory Commission (NRC) for St. Lucie Plant, Unit No. 2 (SL-2). The proposed amendment would revise the Technical Specifications to allow the use of AREVA fuel at SL-2. Additionally, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.12, FPL requests an exemption from the provisions of 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems [ECCSs] for light-water nuclear power reactors," and Appendix K to 10 CFR Part 50, "ECCS Evaluation Models," to allow the use of M5<sup>®</sup> fuel rod cladding in future core reload applications for SL-2.

The NRC staff has reviewed the information submitted by the licensee and, based upon this review, determined that the following additional information is required to complete the evaluation.

**APHB-Request for Additional Information (RAI)-1**

The application does not provide information regarding operator actions. Identify and describe in detail any operator manual actions that will be added, deleted, or changed to support the proposed license amendment.

**ARCB-RAI-1**

In the application dated December 30, 2014, the following was stated:

The radiological consequences analyses, approved as part of EPU [extended power uprate] in Amendment No. 163 (Reference 5), remain unaffected for the following reasons:

The key parameters related to the core design used in the radiological consequences analyses include the reactor power level, Core Operating Limits Report (COLR) limit for radial peaking factor, core average/assembly average burnup, fuel enrichment limits, fuel rod density and event specific fuel failure limits. None of these parameters change for the proposed fuel transition. Additionally, the plant operating parameters and system configurations including actuation setpoints important to the dose analysis, such as the containment

Enclosure

spray system, emergency core cooling systems, control room ventilation and filtration system and control room isolation, remain unchanged. Other parameters, such as the atmospheric dispersion factors, iodine flashing fraction, minimum sump pH, etc. are not affected by the fuel transition. There are no changes to the steam releases assumed in the dose analyses due to the fuel design change. Therefore, the radiological consequences analyses in the UFSAR [Updated Final Safety Analysis Report] will continue to remain applicable for the operation of St. Lucie Unit 2 with the transition to AREVA CE [Combustion Engineering] 16x16 HTP™ [high thermal performance] fuel as proposed in this license amendment request.

A modification to the licensing basis fuel type can have the potential to change the core isotopic distribution assumed in post-accident conditions. Based upon this, provide additional information regarding the effect the proposed fuel type change has on the current radiological consequence design-basis analyses. Provide any changes to the assumptions or methodologies in the radiological design-basis accident (DBA) analyses as a result of the proposed fuel type change and justifications for those changes. If there are changes to the radiological DBA analyses, provide the resulting change to the calculated radiological consequence of the DBAs.

#### **ARCB-RAI-2**

Previously, in Amendment No. 163, an analysis was done to develop a bounding source term that is used for the radiological DBAs. This analysis was performed using the ORIGEN-2.1 computer code and was based on Westinghouse fuel and Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," release fractions.

Provide a detailed explanation regarding whether any additional analysis has been performed to demonstrate that the source term previously developed remains bounding for AREVA CE 16x16 HTP™ fuel. Include in the response any computer codes used and explain how the AREVA fuel source term compares to the Westinghouse fuel source term.

M. Nazar

- 2 -

If you have any questions, please contact Robert L. Gladney at 301-415-1022 or [Robert.Gladney@nrc.gov](mailto:Robert.Gladney@nrc.gov).

Sincerely,

***/RA by R.Gladney for/***

Farideh E. Saba, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosure:  
Request for Additional Information

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**ADAMS Accession No.: ML15127A405**

**\*by e-mail**

OFFICE	DORL/LPL1-2/PM	DORL/LPL2-2/LAIt	DORL/LPL2-2/LA	DRA/ARCB/BC
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DATE	05/8/15	05/12/15	05/8/15	05/8/15
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