



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

July 5, 2012

Mr. Jon A. Franke  
Vice President  
Crystal River Nuclear Plant (NA2C)  
ATTN: Supervisor, Licensing and  
Regulatory Programs (NA1B)  
15760 W. Power Line Street  
Crystal River, Florida 34428-6708

SUBJECT: CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT – REQUEST FOR  
ADDITIONAL INFORMATION FOR EXTENDED POWER UPRATE LICENSE  
AMENDMENT REQUEST (TAC NO. ME6527)

Dear Mr. Franke:

By letter dated June 15, 2011, as supplemented by letters dated July 5, 2011; August 11, 2011 (two letters); August 18 and 25, 2011; October 11 and 25, 2011; December 15, 2011 (two letters); December 21, 2011; January 5, 2012 (two letters); January 19, 2012 (two letters); January 31, 2012; March 19, 2012; March 22, 2012; and April 4, 2012 (two letters); April 12, 2012; April 16, 2012; and April 26, 2012, Florida Power Corporation, doing business as Progress Energy Florida, Inc., submitted a license amendment request for an extended power uprate to increase thermal power level from 2609 megawatts thermal (MWt) to 3014 MWt for Crystal River Unit 3 Nuclear Generating Plant.

The U.S. Nuclear Regulatory Commission staff is reviewing the submittal and has determined that additional information is required to complete its evaluation. This request was discussed with Mr. Dan Westcott of your staff on June 19, 2012; and it was agreed that a response to the enclosed request for additional information would be provided within 30 days from the date of this letter.

If you have any questions regarding this matter, I can be reached at 301-415-1564.

Sincerely,

A handwritten signature in black ink, appearing to read "Siva P. Lingam".

For

Siva P. Lingam, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-302

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

**REQUEST FOR ADDITIONAL INFORMATION**  
**REGARDING EXTENDED POWER UPRATE TO INCREASE THERMAL POWER LEVEL**  
**FROM 2609 MEGAWATTS THERMAL TO 3014 MEGAWATTS THERMAL**  
**CRYSTAL RIVER UNIT 3 NUCLEAR GENERATING PLANT**  
**DOCKET NO. 50-302**

By letter dated June 15, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML112070659), as supplemented by letters dated July 5, 2011; August 11, 2011 (two letters); August 18 and 25, 2011; October 11 and 25, 2011; December 15, 2011 (two letters); December 21, 2011; January 5, 2012 (two letters); January 19, 2012 (two letters); January 31, 2012; March 19, 2012; March 22, 2012; April 4, 2012 (two letters), April 12, 2012, April 16, 2012, and April 26, 2012 (ADAMS Accession Nos. ML112010674, ML11228A032, ML11234A051, ML11234A427, ML11242A140, ML112860156, ML113040176, ML11354A232, ML11354A233, ML11361A460, ML12011A035, ML12030A209, ML12024A300, ML12024A301, ML120330114, ML12081A293, ML12086A107, ML12097A183, ML12097A246, ML12107A216, ML12114A002, and ML12118A498, respectively), Florida Power Corporation (the licensee), doing business as Progress Energy Florida, Inc., submitted a license amendment request (LAR) for an extended power uprate (EPU) to increase thermal power level from 2609 megawatts thermal (MWt) to 3014 MWt for Crystal River Unit 3 Nuclear Generating Plant (Crystal River 3 or CR-3). In order to complete its review of the above documents, the Nuclear Regulatory Commission (NRC) staff request additional information originating from our Probabilistic Risk Assessment (PRA) Licensing Branch (APLA), and Health Physics and Human Performance Branch (AHPB):

**APLA REQUEST FOR ADDITIONAL INFORMATION (RAI)**

Page 2.13-29 of Attachment 5 to the original LAR dated June 15, 2011, describes the review conducted to analyze fire risk for extended power uprate (EPU). This section states that at the time of LAR evaluation, the cable routing and component location had not been finalized, therefore the impact on fire risk could not be quantified. Also the timing analysis for the new operator action to lock out the atmospheric dump valve (ADV) actuation had not been performed therefore, the fire human reliability analysis (HRA) value could not be determined. The Fire PRA was updated based only on HRA timing and did not include fire ignition frequency nor fire loading. The concluding sentence states that since HRA timing change due to EPU are insignificant, it is concluded that there is no significant change in overall fire risk. The NRC staff requests additional information explaining how the Fire PRA was updated for the EPU. Please provide updated results for the Fire PRA if cable routing, component location and HRA timing on ADV actuation are now finalized. In addition, please describe how the results for non multi compartment fire core damage frequency in Table 2.13-2 of Attachment 5 to the original LAR dated June 15, 2011, were obtained.

Enclosure

**AHPB RAI**

On page 2.10.1-2 of Attachment 5 to the original LAR dated June 15, 2011, the licensee states that the zone criteria established for the general accessible areas in the containment was  $\leq 25$  millirem per hour. It acknowledges that during the design of the plant, this was accomplished by designing the shields at an assumed power level of 2544 MWt to ensure dose rates at various locations were less than the specified zone criteria. The licensee evaluates the impact of the EPU by using actual operating data and providing the total person-rem for containment entries at power as well as the maximum dose to any individual working at the plant. While it may be true that the change in dose rates in accessible areas is not expected to increase significantly after the EPU and therefore, cumulative doses can be kept as low as reasonably achievable and individual doses below Title 10 of the *Code of Federal Regulations*, Part 20 occupational dose limits, the dose information does not demonstrate that the original dose rates established in the original shield design will not increase beyond their original design values. Provide justification that demonstrates that the dose rates are not expected to increase beyond the dose rates established under the original shielding design analysis performed at an assumed power level of 2544 MWt.

July 5, 2012

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Vice President  
Crystal River Nuclear Plant (NA2C)  
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Sincerely,

*/RA by Farideh Saba for/*

Siva P. Lingam, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-302

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ADAMS Accession No: ML12171A347

\* By memo

| OFFICE | LPL2-2/PM | LPL2-2/LA | APLA/BC*  | AHPB/BC                   | LPL2-2/BC                 |
|--------|-----------|-----------|-----------|---------------------------|---------------------------|
| NAME   | SLingam   | BTully    | DHarrison | UShoop<br>RPedersen (for) | DBroaddus<br>(EBrown for) |
| DATE   | 06/21/12  | 06/20/12  | 05/02/12  | 06/21/12                  | 07/05/12                  |

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