Progress Energy

Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 50.90

June 15. 2011
3F0611-02

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Crystal River Unit 3 – License Amendment Request #309, Revision 0, Extended Power Uprate

Dear Sir:

Florida Power Corporation (FPC), doing business as Progress Energy Florida, Inc., requests a revision to the Crystal River Unit 3 (CR-3) Operating License (OL) and Improved Technical Specifications (ITS) in accordance with 10 CFR 50.90. Approval of License Amendment Request (LAR) #309, Revision 0, would increase the unit's rated thermal power level from 2609 megawatts (MWt) to 3014 MWt. As such, this power uprate is considered an Extended Power Uprate (EPU).

The planned application was the topic of public meetings between the NRC and CR-3 personnel on April 23, 2007 (Accession Number ML071990372), September 14, 2007 (Accession Number ML080510384), May 19, 2008 (Accession Number ML081410862), April 1, 2009 (Accession Number ML090910729), June 7, 2010 (Accession Number ML101680383), and April; 21, 2011 (Accession Number ML11123A042).

The information provided in this LAR follows the content guidance in the NRC's Office of Nuclear Reactor Regulation Review Standard (RS)-001, "Review Standard for Extended Power Uprates," Revision 0, to the extent that the review standard is consistent with the design basis of the plant. Where differences exist between the CR-3 plant-specific licensing basis and RS-001, the differences are described and evaluations provided consistent with the licensing basis of the plant. In addition, technical information beyond the specific guidance of RS-001 is provided and identified as such in the attached CR-3 EPU Technical Report (TR). Also, Requests for Additional Information (RAIs) and other Operational Experiences regarding power uprates for other plants were reviewed for applicability and CR-3 specific information related to many of those RAIs are included in the CR-3 EPU TR.

FPC requests approval of changes to the CR-3 licensing basis required to support plant operation at the EPU power level. These changes consist of the following:

- Credit the use of the Inadequate Core Cooling Mitigation System, Fast Cooldown System, and atmospheric dump valves to assist the Emergency Core Cooling System during a small break Loss of Coolant Accident (LOCA);
- Credit the new Low Pressure Coolant Injection (LPI) System Hot Leg Injection line as the primary method of boron precipitation mitigation during a LOCA, thereby eliminating the need for the two active methods currently credited. This will remove current CR-3 License Condition 2.C (11);
- Credit the use of the new LPI cross tie to mitigate a core flood tank (CFT) line break accident;

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- Credit the use of soluble boron in the spent fuel pool to preclude spent fuel pool criticality accidents as allowed by 10 CFR 50.68(b)(4); and.

- The feedwater line break acceptance criterion for the Reactor Coolant System pressure is being revised to be consistent with the criterion from NUREG-0800, Standard Review Plan, Section 15.2.8.

FPC has evaluated the proposed changes in accordance with the requirements of 10 CFR 50.91(a)(1) against the standards of 10 CFR 50.92(c) and has determined this LAR involves no significant hazards. Attachments to this letter contain information supporting the proposed change and these attachments are described below.

Attachment 1, "Description of Proposed Change, Background, Justification for the Request, Determination of No Significant Hazards Considerations," contains a listing, including a brief discussion of the justification, of the proposed changes to the CR-3 OL and ITS. Also included is a justification of the additional EPU related CR-3 license basis changes, No Significant Hazards Consideration, and environmental consideration.

Attachment 2, "Operating License and Improved Technical Specification Changes (Markup)," provides a markup of the CR-3 OL and ITS indicating the proposed changes.

Attachment 3, "Operating License and Improved Technical Specification Changes (Revision Bar Format)," provides a clean-typed copy of the proposed CR-3 OL and ITS changes and includes a revision bar in the right margin indicating the proposed changes.

Attachment 4, "Improved Technical Specification Bases Changes (Markup) - For Information Only," provides a markup of the draft proposed CR-3 ITS Bases pages identified for revision as a result of EPU evaluations and analyses. These pages are being submitted for information only and do not require review and approval by the NRC.

Attachment 5, "Crystal Unit 3 Extended Power Uprate Technical Report (Proprietary)," contains an integrated summary of the results of the safety analysis and evaluations performed specifically for the CR-3 EPU, and is consistent with the guidelines of RS-001. Attachment 5 contains information which is proprietary to AREVA NP, Inc. (AREVA).

Attachment 6, "Affidavit for Withholding Proprietary Information from Public Disclosure," provides an affidavit by which AREVA requests the proprietary information contained in Attachment 5 be withheld from public disclosure in accordance with 10 CFR 2.390(a)(4).

Attachment 7, "Crystal Unit 3 Extended Power Uprate Technical Report (Non-Proprietary)," provides a non-proprietary version of the CR-3 EPU TR with proprietary information withheld.

Attachment 8, "Sample Instrumentation Setpoint Calculation," provides a calculation demonstrating the use of the setpoint methodology used for new setpoints associated with the EPU. The associated channel calibration surveillance requirement is addressed in Attachments 2 and 3, and incorporates the requirements of TSTF-493, Revision 4, "Clarify Application of Setpoint Methodology for LSSS Functions" (Option A).

Attachment 9, "Supplemental Environmental Report," contains the CR-3 EPU environmental assessment. FPC has performed an assessment of environmental impacts of the proposed EPU from 2609 MWt to 3014 MWt. Sufficient information is provided to evaluate the environmental impact of the power uprate in accordance with the requirements of 10 CFR 51. The environmental impacts of the EPU are described, and where appropriate, are compared to those previously identified by the U.S. Atomic Energy Commission in the 1973 Final Environmental Statement (FES) related to the issuance of the operating license for CR-3. The comparisons show that the conclusions in the FES remain valid for operation at 3014 MWt.

Attachment 10, "List of Regulatory Commitments," provides a list of new regulatory commitments identified in support of the CR-3 EPU amendment.

A list of plant modifications associated with the CR-3 EPU and a description of the changes is provided in Appendix E, "Major Plant Modifications," of the CR-3 EPU TR (Attachments 5 and 7).

This request, while not being submitted as a risk-informed licensing action, as defined by Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," was evaluated from a risk perspective. As demonstrated in Section 2.13, "Risk Evaluation," of the CR-3 EPU TR (Attachments 5 and 7), the calculated results demonstrate a very small increase in core damage frequency (CDF), 2.0 E-7 Δ CDF, and no increase in large early release frequency.

The CR-3 Plant Nuclear Safety Committee has reviewed this LAR and recommended it for approval.

The LAR is written assuming that the final EPU modifications are installed during the R17 refueling outage. However, containment repair activities may provide an opportunity to accelerate installation of these modifications. Therefore, CR-3 requests review and approval of the LAR consistent with the milestones in Nuclear Reactor Regulation Office Instruction No. LIC-112, "Power Uprate Process." When the determination is made whether to accelerate installation of the final EPU modifications, then CR-3 will supplement the LAR and provide specifics on the requested implementation period.

FPC is providing, in accordance with 10 CFR 50.91(b), a copy of the proposed license amendment request to the designated representative for the State of Florida.

If you have any questions regarding this submittal, please contact Mr. Dan Westcott, Superintendent, Licensing and Regulatory Programs at (352) 563-4796.

Sincerely,

Jon A. Franke
Vice President
Crystal River Nuclear Plant

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Attachments:

1. Description of Proposed Change, Background, Justification for the Request, Determination of No Significant Hazards Considerations
2. Operating License and Improved Technical Specification Changes (Markup)
3. Operating License and Improved Technical Specification Changes (Revision Bar Format)
4. Improved Technical Specification Bases Changes (Markup) - For Information Only
5. Crystal River Unit 3 Extended Power Uprate Technical Report (Proprietary)
6. Affidavit for Withholding Proprietary Information from Public Disclosure
7. Crystal River Unit 3 Extended Power Uprate Technical Report (Non-Proprietary)
8. Sample Instrumentation Setpoint Calculation
9. Supplemental Environmental Report
10. List of Regulatory Commitments

xc: NRR Project Manager
Regional Administrator, Region II
Senior Resident Inspector
State Contact

STATE OF FLORIDA

COUNTY OF CITRUS

Jon A. Franke states that he is the Vice President, Crystal River Nuclear Plant for Florida Power Corporation, doing business as Progress Energy Florida, Inc.; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission the information attached hereto; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information, and belief.

Jon A. Franke
Vice President
Crystal River Nuclear Plant

The foregoing document was acknowledged before me this 15 day of June, 2011, by Jon A. Franke.

Signature of Notary Public
State of Florida

CAROLYN E. PORTMANN
Commission # DD 937553
Expires March 1, 2014
Bonded Thru Troy Fain Insurance 800-385-7019

(Print, type, or stamp Commissioned Name of Notary Public)

Personally Known ✓ -OR- Produced Identification ____