SITE CERTIFICATION APPLICATION
CRYSTAL RIVER UNIT 3 POWER UPRATE PROJECT
CRYSTAL RIVER, FLORIDA

VOLUME 1 OF II

SUBMITTED BY:

PROGRESS ENERGY FLORIDA, INC.
299 1ST AVENUE NORTH
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APPLICANT INFORMATION

Please supply the following information:

Applicant's Official Name **Florida Power Corporation, dba Progress Energy Florida, Inc.**

Address **299 1st Avenue North, PEF – 903, St. Petersburg, Fl 33701**

Address of Official Headquarters **P. O. Box 1551, Raleigh, NC, 27602**

Business Entity (corporation, partnership, co-operative) **Corporation**

Names, owners, etc. **Progress Energy Florida**

Name and Title of Chief Executive Officer **Mr. Robert McGehee**

Name, Address, and Phone Number of Official Representative responsible for obtaining certification:

Mr. Michael Shrader, (727) 820-5588

Site Location (county) **Citrus County**

Nearest Incorporated City **Crystal River, Florida**

Latitude and Longitude **Latitude 28/57/34; Longitude 82/42/01**

UTM's Northerly **(km) 3204.5**

Easterly **(km) 334.3**

Section, Township, Range **Section 33, Township 17, Range 16**

Location of any directly associated transmission facilities (counties) **Not Applicable**

Name Plate Generating Capacity **838 MW(electrical)**

Capacity of Proposed Additions and Ultimate Site Capacity (where applicable)

Addition of 180 MW

Remarks (additional information that will help identify the applicant): **Addition of 180 MW to Crystal River Unit 3, an existing nuclear generating unit located within the Crystal River Energy Complex.**

EXECUTIVE SUMMARY

Progress Energy Florida (PEF), a subsidiary of Progress Energy, provides electricity and related services to more than 1.6 million customers in the state of Florida. Progress Energy's retail service area in Florida spans about 20,000 square miles in central Florida, In Florida, the company maintains more than 43,600 miles of distribution and transmission lines in serving 1.6 million customers and a population of more than five million people.

Project Description

PEF plans to add 180 MW (megawatts) of electrical generation resources to its system in order to continue to provide reliable, safe, and cost-effective service to its customers. This additional electrical generation will occur through modifications to PEF's existing nuclear-fueled Crystal River Unit 3. That existing unit has been in operation since 1977. That unit has not been previously certified under the PPSA.

The CR3 Uprate Project will occur over two phases. The first phase (Phase I) will occur during a 2009 planned refueling outage and scheduled steam generator replacement also will result in an additional 40 MW of power. Phase II will take place during the 2011 planned refueling outage of CR3. The second phase will result in an additional 140 MW of power and will require a large number of smaller yet substantial modifications to assure long term reliability of all plant systems at the conditions necessary to support this higher licensed power level.

The power level upgrades scheduled for 2009 through 2011 trigger the need for this Site Certification Application (SCA). Net environmental impacts associated with the CR3 Uprate Project are expected to be minimal and can be summarized as follows:

Land Use

CR3 has a future land use and zoning designation of Transportation, Communication, and Utilities (TCU). According to both the Citrus County Comprehensive Plan and the Land Development Code, the TCU designation allows for those uses directly related to transportation, communication, and utilities. Power generation facilities are a specified use under the TCU designation. No new lands will be required for the project.

Air

The CR3 Uprate Project will increase the electrical output from CR3 and the associated circulating intake water flow rate. The types and sources of air emissions associated with the CR3 Upgrade Project will consist of drift emissions from a potential new mechanical draft cooling tower to be designated the South Cooling Towers (SCT). The air emission impacts of the SCT associated with increased intake water flow (i.e., increased flow through additional new cooling towers) will trigger PSD for particulate matter (PM), but not for PM less than 10 microns (PM_{10}). Other regulated air emissions (e.g., NO_X and SO_2) will not be affected, as there will be no additional fuel combustion sources (e.g., additional diesel generator capacity) that may trigger PSD for these pollutants.

Traffic

Construction of the CR3 Uprate Project is anticipated to commence in 2009 and conclude in the 2012. The majority of construction workers are expected to commute to the CR3 site from within a distance of up to 75 miles. Peak construction employment of 650 is estimated to increase the total of onsite employees to approximately 2,950 workers in late 2009. Traffic generated during the construction activities is considered a temporary condition. No increase in operations personnel will occur beyond the conclusion of the construction activities in 2011. During the full build-out year, traffic on both West Powerline Street and U.S. Highway 19/98 are expected to increase by less than one percent and not cause unacceptable traffic conditions on area roadways.

Ecology

Due to the existing nature of the CR3 site, and limited amount of disturbance associated with the proposed uprate project, no impacts to threatened or endangered species are anticipated as a result of the CR3 Uprate Project.

Water

The CR3 Uprate Project will result in increased cooling water flow rates and a larger pumping capacity than what currently exists within the water flow system which supply the CR3 steam generators. Overall, the uprate project will result in an additional 180 MW of power and include alterations that will elevate the thermal unit's discharge.

A conceptual and conservative design plan for a new South Cooling Tower has been proposed both to offset the increased circulating water rejected heat and to replace the existing modular Helper Cooling Towers. A small portion of the increased flow associated with the uprate project will be evaporated in the recirculating portion of the new SCT, which will be used to dissipate the increase in rejected heat. The new SCT has also been designed to avoid any increase in flow into the intake canal from Crystal Bay/Gulf of Mexico, and to avoid any increase in heat load or temperature rise leaving the discharge canal to Crystal Bay/Gulf of Mexico. PEF intends to request modification of the NPDES permit to authorize the operation of the new SCT and an increase in circulating water flow at CR3. Detailed design will be addressed as part of the NPDES renewal process in 2009.

Overall, the proposed CR3 Uprate Project will not increase flow to the intake canal from Crystal Bay and there will be no net increase in the thermal discharge at the NPDES POD. The CR3 Uprate Project will not have a negative impact to fisheries or the aquatic environment.

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