BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 120009-EI
FLORIDA POWER & LIGHT COMPANY

MARCH 1, 2012

IN RE: NUCLEAR POWER PLANT COST RECOVERY
FOR THE YEAR ENDING
DECEMBER 2012

TESTIMONY OF:

ALBERT M. FERRER

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DIRECT TESTIMONY OF ALBERT M. FERRER

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Q. Please state your name and business address.

A. My name is Albert M. Ferrer. My business address is 800 Kinderkamack Road, Oradell, New Jersey 07649.

Q. By whom are you employed and what is your position?

A. I am employed by Burns and Roe Enterprises, Inc. (BREI) as Vice President, Power Consulting Division.

Q. Please describe BREI.

A. BREI is an engineering, procurement, construction, operations, and maintenance company that provides services to private and governmental power industry clients worldwide.

The Power Consulting Division provides consulting services to the nuclear and fossil power industry. Services provided by the Division include owner's engineer, independent engineering, due diligence, acquisition services, uprate analyses, life extension studies, engineering, procurement and construction (EPC) oversight, contract evaluation and EPC project management.

Burns and Roe's nuclear experience includes some of the earliest U.S. commercial nuclear power plants. Burns and Roe have been involved in the design of eight commercial nuclear power plants. More recently, Burns and Roe provided a conceptual design of the Traveling Wave Reactor - a 3,000 megawatt sodium-cooled reactor using a revolutionary core design funded by the Gates Foundation. The Babcock & Wilcox Company used Burns and Roe to develop conceptual designs for their mPower™ reactor - a passively safe, small modular reactor with a below-ground containment structure. Burns and Roe evaluated General Electric's Economic Simplified Boiling Water Reactor for compliance with Electric Power Research Institute's Utility Requirements Document. For the U.S. Department of Energy (DOE), Burns and Roe performed independent due diligence investigations for four new U.S. nuclear plants in support of the DOE's utility loan guarantee project applications. Burns and Roe also participated in the development of three combined Construction and Operating License Applications for new nuclear power plants in the southeast U.S.

Q. Please describe your educational background and professional experience.

A. I hold an M.S. in Nuclear Engineering from New York University and a B.S. in Mechanical Engineering from Manhattan College, with honors. I have been Vice President of BREI's Power Consulting Division since 2005. I report directly to the Chairman and President of BREI. In my current position I provide management, executive leadership, and oversight for all engineering

consulting services performed by the Division including those provided by its specialists and consultants.

Prior to joining BREI, I was Senior Vice President and Managing Director for Stone and Webster, with responsibility for the firm's Strategic Management, Markets and Regulatory, and Project Finance Services practices. During my career at Stone and Webster, I held positions ranging from project engineer to manager of major EPC power plant projects involving site feasibility, environmental impact evaluations, conceptual engineering, detailed design, procurement, cost and estimating, construction engineering, construction management, and start up and testing of a variety of technologies including coal plants, simple cycle and combined cycle gas plants, nuclear plants, geothermal plants, and small hydro facilities. As a project engineer or project manager, I was responsible for cost and scope control, planning, coordinating, scheduling and supervising engineering activities for various nuclear projects. I also provided expert testimony at hearings before the Nuclear Regulatory Commission's (NRC) Advisory Committee on Reactor Safeguards involving the construction permit process for nuclear plants.

Q. What is the purpose of your testimony?

A. My testimony summarizes an independent review conducted by myself and other BREI Power Consulting Division personnel regarding Florida Power & Light Company's (FPL) execution of the Extended Power Uprate (EPU or Uprate) related activities at St. Lucie (PSL) and Turkey Point (PTN) power

plants in 2011. The purpose of this review was to determine whether FPL's project activities executed in 2011 were reasonable and prudent. In conducting the review, we applied the prudence standard that has been used by the Florida Public Service Commission, which is whether FPL's management actions and decisions are within the range of what a reasonable utility manager would have done, in light of the conditions and circumstances which were known, or should have been known, at the time the decision was made. Hindsight review is impermissible.

Q. Please summarize your testimony.

A. FPL took actions and made decisions on the execution of the PSL and PTN nuclear plant EPU project during 2011 in a reasonable and prudent manner. FPL is pursuing the EPU project consistent with sound project management practices commonly used for other prudently managed projects in the industry, is aggressively managing the project and its contractors, has a reasonable and manageable project schedule and execution approach, has a prudent approach to pursuit of NRC licensing for the project, and is taking appropriate and prudent actions to mitigate project risks.

Q. Please describe how BREI conducted its review.

A. I led the BREI review, which was comprised of senior level personnel with experience in nuclear plant engineering, nuclear plant licensing, nuclear plant operations, power plant construction, and project controls. The BREI review team: a) conducted interviews with FPL personnel at its Juno Beach headquarters and at the PSL and PTN sites; b) prepared written data requests

to FPL personnel and reviewed FPL's responses to these questions; c) reviewed technical reports, letters, drawings, procedures, schedules, descriptions of organization roles and responsibilities, qualifications of EPU team personnel, correspondence with the NRC, and prior testimony filed with the Florida Public Service Commission; and d) observed on-going EPU activities at both the PSL and PTN sites. BREI personnel were also given ready access to EPU project personnel, documentation, and the PSL and PTN sites.

Q. Please describe the major areas of your review.

A. BREI reviewed the following areas:

- Project Plans, Outage Execution Plans, Schedules and Organization;
- Engineering and the Engineering Work Control Process;
- Project Schedule; and
- License Amendment Request Related Activities.

Q. Please describe the conclusions of BREI's review of the EPU project plan, schedule, and organization.

A. Three Project Plans were reviewed for the EPU Project - one overall for the FPL fleet and one each for PSL and PTN. BREI also reviewed numerous documents pertaining to the implementation of the EPU project, including schedules, corrective actions, procedures, meeting minutes, NRC correspondence, and internal audit reports. In addition, BREI personnel visited FPL corporate offices and both sites to conduct interviews with EPU project personnel.

BREI found that the various EPU Project procedures were being utilized by team members. BREI also found that the EPU project team was well aware of challenges and was actively implementing the strategies that had been developed to mitigate identified challenges.

In our experience, projects that are performed on an expedited schedule can create additional and unique project management challenges due to the compressed time frame and potential additional work as discoveries are made. BREI found that the FPL EPU project management team has properly managed the project taking into account the great challenges of performing this extremely large and complex project on an expedited time frame. FPL exercised vigilant oversight of the project and the deliverables. FPL maintained strong workforce oversight to support and fortify contractor performance. FPL project team members use sophisticated and state of the art performance metrics to manage project performance. Experienced project management personnel continually review contractor deliverables including engineering reports, drawings, calculations, and work packages. In addition, FPL has appropriately assigned defined scopes of work to additional, well-qualified contractors to enhance schedule and budget performance. Consistent with good nuclear industry practice, the EPU project team has also sought to learn from relevant EPU project experience by contacting and exchanging lessons learned with industry peers that are also implementing EPUs. FPL has also thoroughly incorporated the essential elements of risk management into

the project to track challenges and develop mitigation strategies for engineering, procurement, construction, and licensing.

Q. Please summarize the conclusions of BREI's review of EPU engineering and the engineering work control process.

A. During 2011, FPL closely monitored the engineering progress, prioritized modifications based upon potential severity of cost and schedule impacts, and selected contractor and subcontractor assignments to enhance quality, cost, and schedule performance. These are proactive measures taken by FPL to minimize cost and schedule impacts during construction caused by delays in issuance of engineering modification packages and work planning packages and by discovery of the need for additional work during outage performance. In addition, in June of 2011, decisions were made to change the outage start dates. The PSL Unit 1 outage was deferred approximately three months, the PSL Unit 2 was deferred approximately seven weeks, and the PTN Unit 4 outage was deferred approximately five weeks. FPL also decided to change the durations of the EPU outages at PSL to provide, in part, additional time for engineering, planning, procurement, and outage preparation to ensure successful outages.

The magnitude of the work being performed for the implementation of four EPUs at four units is significant. The fifteen month schedule for completion of all four outages is aggressive. FPL management has maintained vigilant oversight of the project and has increased the intensity of its management

oversight as necessary. Based upon our interviews of the EPU project team, the team leaders and team members are well-qualified, possess a positive "can-do" attitude and have put forth significant efforts to ensure the success of its contractors and the project while maintaining teamwork among internal and external team members. BREI also noted that personnel with EPU experience on other nuclear projects are being used to support FPL's EPU project. FPL's use of personnel with recent EPU implementation experience has also helped the FPL project team.

BREI also compared FPL's EPU project organization and approach to Nuclear Energy Institute (NEI) 08-010, "Roadmap for Power Uprate Program Development and Implementation," Revision 0, issued July 2009. This guidance document was developed by the nuclear energy industry to provide a high level roadmap for power uprate project development and implementation. This document builds on lessons learned from previous uprate projects and provides general guidance which includes a brief overview of power uprates, the regulatory process, guidelines on targeting uprated thermal power, best practices and operating experience from previous uprates, and keys to success for licensing, implementation and operation at power uprate conditions. The roadmap provides specific guidance for decision-making processes, project management and development, program and equipment analysis, regulatory and licensing processes, and project implementation. The NEI document provides that the features of a strong power uprate project include: fleet-wide

effort; feasibility studies; strong project management; dedicated resources; owner's engineer/independent engineer's emphasis; contract support; a risk management strategy; assessments, audits and oversight; and an EPC structure.

Based on BREI's extensive document reviews and roundtable discussions with project personnel, BREI concludes that the features suggested by the NEI uprate guidance document for a successful EPU project have all been implemented by FPL and were being maintained throughout 2011. This was evidenced by FPL's project execution plans and decisions, periodic meetings and status reports, compliance with EPU Project Instructions, and compliance with corporate procedures.

Q. Please summarize the conclusions of BREI's review of EPU project schedules.

A. BREI performed a detailed review of the EPU project schedules for PTN and PSL. The PTN EPU Primavera P6 schedule, a detailed computerized schedule program for the EPU project, is detailed with a total of over 100,000 activities including 30,000 activities in engineering, 15,000 activities in simulator, training and procedures, 24,000 pre-outage activities and 25,000 outage related activities. The PSL EPU Primavera P6 schedule has a total of over 90,000 activities including approximately 40,000 engineering activities and approximately 13,000 related to the installation efforts. The schedules include an appropriate and reasonable number of activities for projects of this

magnitude. Based on BREI's prior experience, FPL is appropriately managing the activities in the schedules.

Q. Please summarize the conclusions of BREI's review of FPL's NRC licensing activities.

A. BREI reviewed FPL's responses to NRC Requests for Additional Information (RAI) submitted during 2011 for both PSL and PTN license amendment request efforts. FPL responses to NRC RAIs were complete, clearly written, and timely submitted. A few of FPL's responses were the subject of follow-up questions by the NRC, but most were adequately addressed with a few technical questions outstanding at the time of our review. In our experience, this exchange of information is typical for an NRC license amendment review process. Additional delays in NRC review of FPL's proposed license amendments due to agency resource constraints and emergent issues arising before the NRC are possible. As a result of information unrelated to FPL's EPU Project presented to the NRC by Westinghouse on December 6, 2011, FPL was requested by the NRC to address the impact of thermal conductivity degradation (TCD) on the PTN EPU safety analyses. FPL provided a response to the NRC request for information (RAI) via letter dated December 31, 2011. The FPL response was timely and thorough. FPL's response led to a resolution of the issue where, if finally approved by the agency, the NRC would issue a proposed license condition regarding the use of computer code changes to explicitly account for TCD, rather than postpone approval of the EPU license amendment request for PTN. While the resolution of this issue

has not been finalized by the NRC, FPL is actively engaging the NRC to facilitate the timely issuance of the license amendments and has prudently developed alternate plans should delays occur.

Q. Did you also review FPL's management actions with respect to work stoppages caused by contractor personnel errors?

A. Yes. There were two notable work stoppages caused by contractor personnel errors in 2011:

1. In February 2011, Siemens inadvertently left an alignment pin inside the generator stator which caused core iron damage during subsequent testing. Siemens repaired the damage on an expedited basis over the next several weeks. Following Siemens repair efforts, the generator was tested and determined to be satisfactory. The generator has operated satisfactorily since the outage ended.

2. In, December 2011, Bechtel electrical craft personnel commenced work on a motor control center different from the one specified in their detailed work instructions. Upon discovery, the supervisor immediately stopped the work. No injuries occurred and no equipment was damaged. The Bechtel electrical personnel were retrained in equipment clearance processes and subsequently returned to work. During this time, other EPU work continued. The outage duration was not impacted and the cost to FPL was minimal.

Based on our review, we have determined that FPL's management actions during 2011 were appropriate. The contractors assigned to the EPU project who were responsible for the contractor personnel errors were properly qualified, trained, briefed and instructed consistent with good nuclear industry practice. Despite such prudent and reasonable FPL management actions, some personnel errors on a project of this complexity and magnitude will inevitably occur because workers are not infallible. Moreover, it is consistent with prudent industry practice that when such errors occur, work is stopped and workers are retrained to prevent recurrence.

Q. Does this conclude your testimony?

A. Yes.