

MEMORANDUM

JUNE 19, 2012

TO: OFFICE OF COMMISSION CLERK
FROM: MICHAEL LAWSON, SENIOR ATTORNEY *mtl* ✓
RE: DOCKET NO. 120009-EI – NUCLEAR COST RECOVERY CLAUSE

Please find attached the original and six copies of the REDACTED Direct Testimony of William Coston and Jerry Hallenstein, appearing on behalf of the staff of the Florida Public Service Commission, to be filed in the above-referenced Docket.

MTL/th
Attachment

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DOCUMENT NUMBER DATE

03993 JUN 19 2012

FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear cost recovery clause.

DOCKET NO. 120009-EI

DATED: JUNE 19, 2012

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the Direct Testimony of William Coston and Jerry Hallenstein, appearing on behalf of the staff of the Florida Public Service Commission, has been served by U.S. Mail, on this 19th day of June, 2012, to the following:

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CERTIFICATE OF SERVICE
DOCKET NO 120009-EI
PAGE 2

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Docket No. 120009-EI: Nuclear Cost Recovery Clause.

Progress Energy Florida, Inc.

Crystal River Unit 3 Power Uprate and the Levy Units 1 & 2 Construction

Witness: **Direct Testimony of WILLIAM COSTON and JERRY**

HALLENSTEIN, Appearing on behalf of the staff of the Florida Public
Service Commission

Date Filed: June 19, 2012

DOCUMENT NUMBER DATE
03993 JUN 19 2012
FPSC-COMMISSION CLERK

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **COMMISSION STAFF**

3 **DIRECT JOINT TESTIMONY OF**

4 **WILLIAM COSTON AND JERRY HALLENSTEIN**

5 **DOCKET NO. 120009-EI**

6 **JUNE 19, 2012**

7
8 **Q. Mr. Coston, please state your name and business address.**

9 A. My name is William Coston. My business address is 2540 Shumard Oak Boulevard,
10 Tallahassee, Florida 32399-0850.

11 **Q. By whom are you employed?**

12 A. I am employed by the Florida Public Service Commission (FPSC or Commission) as a
13 Government Analyst II, within the Office of Auditing and Performance Analysis.

14 **Q. What are your current duties and responsibilities?**

15 A. I perform audits and investigations of Commission-regulated utilities, focusing on the
16 effectiveness of management and company practices, adherence to company procedures, and
17 the adequacy of internal controls. Mr. Hallenstein and I jointly conducted the 2012 audit of
18 Progress Energy Florida, Inc.'s (PEF) project management internal controls for the Extended
19 Power Uprate (EPU) project at the Crystal River Unit 3 and Levy Nuclear Project.

20 **Q. Please describe your educational and relevant experience.**

21 A. I earned Bachelor of Arts and Master of Public Administration degrees from Valdosta
22 State University. I have worked for the Commission for nine years conducting operations
23 audits and investigations of regulated utilities. Prior to my employment with the Commission,
24 I worked for six years at Bank of America in the Global Corporate and Investment Banking
25 division.

1 **Q. Have you filed testimony in any other dockets before the Commission?**

2 A. Yes. I filed similar testimony in Docket No. 090009-EI, 100009-EI, and 110009-EI.
3 This testimony addressed the audits of PEF's project management internal controls for the
4 nuclear plant uprate at the Crystal River Unit 3 and the Levy Nuclear Project for the years
5 2009 through 2011. Additionally, in 2005 I filed testimony in Docket No. 050078-EI. The
6 testimony addressed an audit of distribution electric service quality for PEF's vegetation
7 management, lightning protection, and pole inspection processes.

8 **Q. Mr. Hallenstein, please state your name and business address.**

9 A. My name is Jerry Hallenstein. My business address is 2540 Shumard Oak Boulevard,
10 Tallahassee, Florida 32399-0850.

11 **Q. By whom are you employed?**

12 A. I am employed by the FPSC as a Government Analyst II, within the Office of Auditing
13 and Performance Analysis.

14 **Q. What are your current duties and responsibilities?**

15 A. I perform audits and investigations of Commission-regulated utilities, focusing on the
16 effectiveness of management and company practices, adherence to company procedures, and
17 the adequacy of internal controls. Mr. Coston and I jointly conducted the 2012 audit of PEF's
18 project management internal controls for the nuclear plant uprate at the Crystal River Unit 3
19 and new construction underway at the Levy site.

20 **Q. Please describe your educational and relevant experience.**

21 A. I earned a Bachelor of Science in Finance from Florida State University in 1985. I
22 have worked for the Commission for twenty-two years conducting operations audits and
23 investigations of regulated utilities. Prior to my employment with the Commission, I worked
24 for five years at Ben Johnson Associates, a consulting firm that specializes in providing
25 economic and research services to state regulatory commissions.

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Q. Have you filed testimony in any other dockets before the Commission?

A. Yes. I filed testimony in Docket 981488-TI, with an audit I conducted regarding the billing and sales practices of Accutel Communications, a reseller of telecommunications services.

Q. Please describe the purpose of your testimony in this docket.

A. Our testimony presents the attached audit report entitled *Review of Progress Energy Florida, Inc.'s Project Management Internal Controls for Nuclear Plant Uprate and Construction Projects* (Exhibit CH-1). This audit was requested by the Commission's Division of Economic Regulation to assist with the evaluations of nuclear cost recovery filings. The report describes key project events and contract activities completed during mid-2011 through April 2012 for the Crystal River 3 Uprate project and the Levy Nuclear Project. The report also presents descriptions of the current project management internal controls employed by PEF.

Q. Please summarize the areas examined by your review.

A. The Office of Auditing and Performance Analysis conducted an audit of the internal controls and management oversight of the nuclear projects underway at PEF. This is an ongoing annual review that examines the organizations, processes, and controls being used by the company to execute the Extended Power Uprate of Unit 3 at the Crystal River Energy Complex and the construction of Levy Nuclear Plant Unit 1 and Unit 2. The previous reviews were filed in the 2008, 2009, 2010, and 2011 Nuclear Cost Recovery Clause dockets before the Commission.

The primary objective of this audit was to document key project developments, along with the organization, management, internal controls, and oversight that PEF has in place or plans to employ for these projects. The internal controls examined were related to the

1 following key areas of project activity: planning, management and organization, cost and
2 schedule controls, contractor selection and management, and auditing and quality assurance.

3 **Q. Are you sponsoring any exhibits?**

4 A. Yes, our audit report is attached as Exhibit CH-1. The audit report's conclusions are
5 summarized in the Executive Summary chapter for both the Extended Power Uprate project
6 and the Levy Nuclear Project.

7 **Q. Does this conclude your testimony?**

8 A. Yes.

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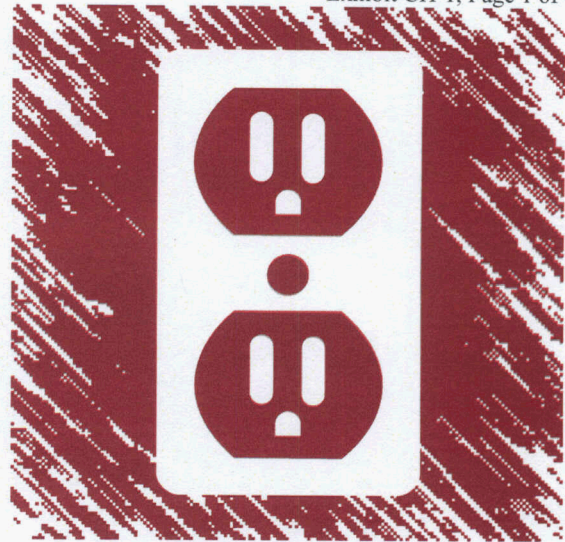
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REDACTED

Docket No. 120009-EI
Review of Project Management Internal Controls
Exhibit CH-1, Page 1 of 44



**REVIEW OF
PROGRESS ENERGY
FLORIDA, INC.'S
PROJECT MANAGEMENT
INTERNAL CONTROLS
FOR
NUCLEAR PLANT UPRATE AND
CONSTRUCTION PROJECTS**

J U N E 2 0 1 2

**BY AUTHORITY OF
THE FLORIDA PUBLIC SERVICE COMMISSION
OFFICE OF AUDITING AND PERFORMANCE ANALYSIS**

**REVIEW OF
PROGRESS ENERGY FLORIDA, INC.'S
PROJECT MANAGEMENT
INTERNAL CONTROLS
FOR
NUCLEAR PLANT UPRATE AND
CONSTRUCTION PROJECTS**

**WILLIAM "TRIPP" COSTON
GOVERNMENT ANALYST II
PROJECT MANAGER**

**JERRY HALLENSTEIN
GOVERNMENT ANALYST II**

JUNE 2012

**BY AUTHORITY OF
THE STATE OF FLORIDA
PUBLIC SERVICE COMMISSION
OFFICE OF AUDITING AND PERFORMANCE ANALYSIS**

PA-11-11-004

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1.0 EXECUTIVE SUMMARY

AT A GLANCE

Levy

- ◆ The Levy Nuclear Plant project timeline has shifted the Unit 1 commercial operation date from 2021 to 2024. The company made no changes with its Engineering, Procurement, and Construction (EPC) contract nor executed a Full Notice to Proceed with the Consortium.
- ◆ The Levy Nuclear Plant project cost estimates increased \$1.2 billion as a result of the anticipated shift in the overall project schedule.
- ◆ The Levy Combined Operating Licenses Application (COLA) review schedule may be impacted by the Nuclear Regulatory Commission's (NRC) request to address issues that arose from the lessons learned after the Fukushima incident.

Crystal River 3

- ◆ The final project phase for the Extended Power Uprate (EPU) Project construction timeline has shifted from the next planned outage into the current extended outage.
- ◆ Crystal River EPU Project costs have escalated from \$461 million in 2008 to an estimated \$617 million in 2010. No additional costs were identified during 2011.

1.1 PURPOSE AND OBJECTIVES

At the request of the Florida Public Service Commission's (FPSC or Commission) Division of Economic Regulation, the Office of Auditing and Performance Analysis performed the fifth annual review of the internal controls and management oversight of the nuclear projects underway at Progress Energy Florida, Inc. (PEF or the company). This review examines the adequacy of project management and internal controls employed in the company's construction of Levy Nuclear Plant Unit 1 and Unit 2 and Extended Power Uprate of Unit 3 at the Crystal River Energy Complex.

The primary objective of this review was to provide an independent account of project activities and to evaluate the internal controls PEF employs for these projects. The information provided in this report may be used by Division of Economic Regulation staff to assist in an assessment of the reasonableness of the company's cost-recovery requests for the projects.

FPSC audit staff published previous reports in 2008 through 2011. Each was entitled *Review of Progress Energy Florida, Inc.'s Project Management Internal Controls for Nuclear Plant Uprate and Construction Projects*. The four previous reviews completed by FPSC audit staff are filed in testimony in Docket No. 080009-EI, 090009-EI, 100009-EI, and 110009-EI.

1.2 SCOPE

The internal controls examined were those related to the following key areas of project activity:

- ◆ Planning
- ◆ Management and organization
- ◆ Cost and schedule controls
- ◆ Contractor selection and management
- ◆ Auditing and quality assurance

Internal controls are the vital mechanisms used by the company to stay within budget and on schedule. According to the Institute of Internal Auditors' *Standards for the Professional Practice of Internal Auditing*, appropriate internal controls allow the organization to accomplish the following:

- ◆ Produce accurate and reliable data
- ◆ Comply with applicable laws and regulations
- ◆ Safeguard assets
- ◆ Employ resources efficiently
- ◆ Accomplish goals and objectives

Well-constructed internal controls assist with the challenges of risk management and decision-making. Risks must be identified and appropriate protections established to prevent or control them. Prudent decision-making results from orderly, well-defined processes that address known risks, needs, and capabilities. Adherence to written procedures, effective communication, vigilant internal and contractor oversight, and ongoing auditing and quality assurance are essential to ensure that project costs are incurred prudently.

Specifically, according to Internal Control Integrated Framework designed by the Committee of Sponsoring Organizations of the Treadway Commission, internal controls should consist of five interrelated components:

- ◆ Control environment
- ◆ Risk assessment
- ◆ Control activities
- ◆ Information and communication
- ◆ Monitoring

When looking at the effectiveness and efficiency of operations, the reliability of financial reporting, and compliance with applicable laws and regulations, all five components must be present and function effectively to conclude the internal controls over operations are effective. This report will document the existence of each of these five components for PEF project management.

1.3 METHODOLOGY

Planning and research and initial data collection for this review were performed in January and February 2012. Additional data collection, site visits, interviews, analysis, and report writing were conducted in March through May 2012. The information compiled in this report was gathered via company responses to audit staff document requests, onsite visit to the Crystal River Energy Complex and the St. Petersburg main office, and interviews with key project personnel. Audit staff also reviewed testimony, discovery, and other filings in Docket No. 120009-EI.

A large volume of information was collected and analyzed by audit staff. Specific information collected from PEF included the following categories:

- ◆ Policies and procedures
- ◆ Organizational structures
- ◆ Contract requests for proposal
- ◆ Contractor bids
- ◆ Bid evaluation analyses
- ◆ Contracts
- ◆ Invoices
- ◆ Project scope analysis studies by PEF and consultants
- ◆ Internal audit reports and quality assessment reviews

1.4 CONCLUSIONS

1.4.1 LEVY NUCLEAR PROJECT

PROJECT SCHEDULE SHIFT

In April 2012, the PEF's Levy Nuclear Project (LNP) management team announced a shift in the in-service dates for Units 1 and 2. The expected in-service date for Unit 1 is shifting from 2021 (estimated in 2010 and 2011) to 2024, while the in-service date for Unit 2 is shifting from 2022 (also estimated in 2010 and 2011) to 2025. The project management team attributes the shift to the current uncertainty with respect to federal and state energy and environmental policies and increased enterprise risks.

Federal and state energy and environmental policies include obtaining federal support for nuclear development and, in Florida, the uncertainty surrounding repeated legislative attempts to repeal or overturn the cost recovery statute. Enterprise risks include current unfavorable economic conditions in Florida, low growth in energy consumption and sales, depressed natural gas prices, and risks associated with the events at the Fukushima plants in Japan. **EXHIBIT 1** compares the current LNP Project Timeline (in accordance with PEF's April 2012 Integrated Project Plan) to the 2008 and 2011 estimated timelines.

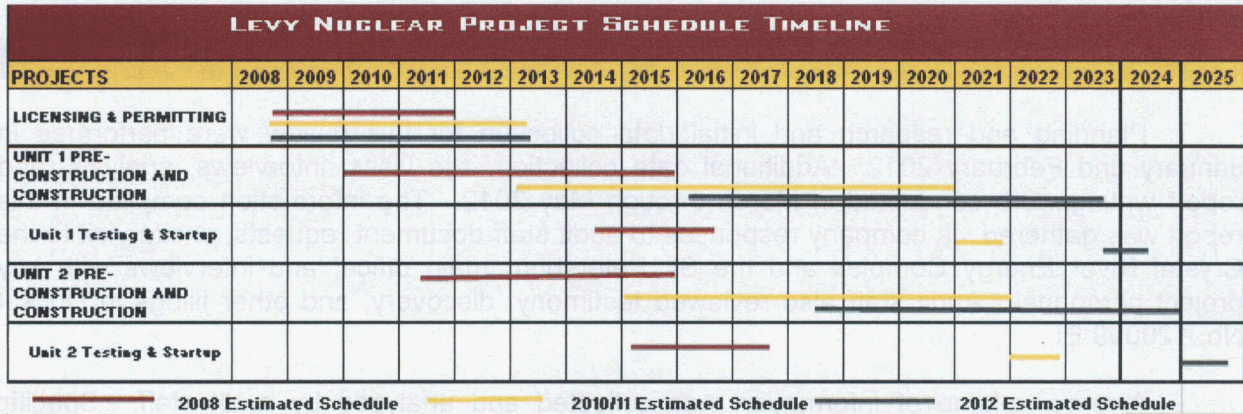


EXHIBIT 1

Source: 2008 – 2012 Integrated Project Plans

As a result of the shift in the commercial operation dates, the estimated project costs have increased 6.8 percent from \$17.64 billion in 2011 to \$18.85 billion in 2012. The company states that this increased cost will primarily be a result of labor and material escalation. **EXHIBIT 2** shows PEF's estimated total project costs for the years 2008 through 2012.

To mitigate the increased near-term uncertainty and enterprise risks, PEF's project management has also made the decision to maintain the partial suspension of the Engineering, Procurement, and Construction (EPC) Agreement for the LNP. PEF's project management team anticipates [REDACTED]

[REDACTED]. The project management team noted that construction will commence in time to place Levy Unit 1 in service in 2024. According to PEF, the decision to suspend construction provides additional time for economic conditions in Florida to improve and is in the best interests of both the company and consumers.

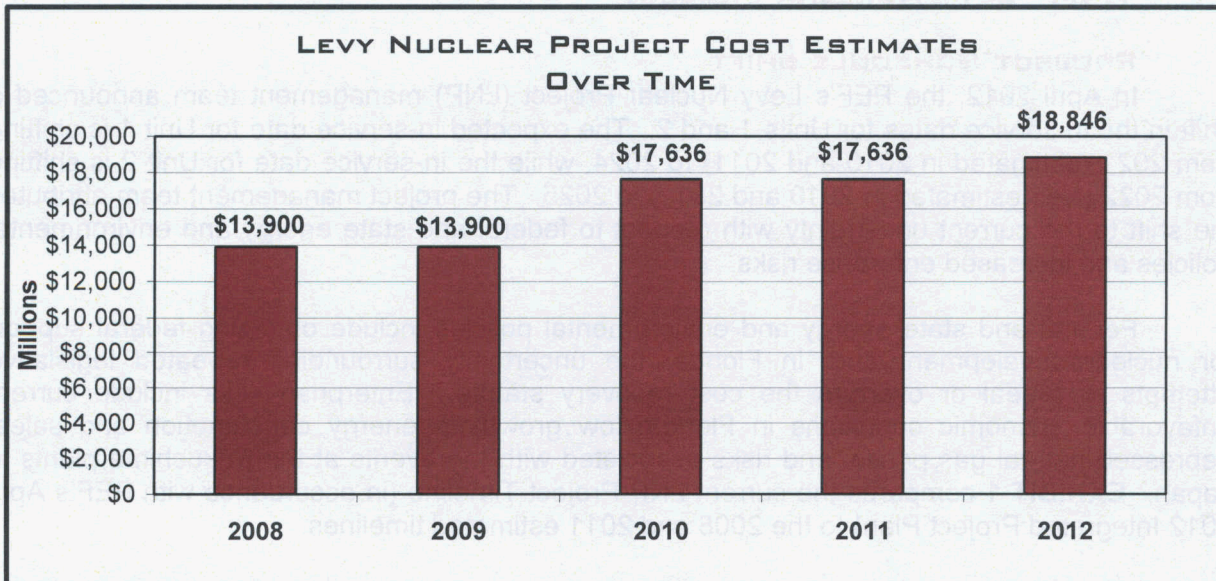


EXHIBIT 2

Source: 2008 – 2012 Integrated Project Plans

WORK THAT WILL BE PERFORMED IN 2012

In 2012, PEF continued to focus its efforts in obtaining the Combined Operating License Application approval from the NRC. There are three major milestones in obtaining the COLA: (1) The NRC's review and issuance of the Final Environmental Impact Statement; (2) The NRC's review and issuance of the Safety Evaluation Report, and; (3) The formal hearing process with the NRC.

The NRC issued the Final Environmental Impact Statement (FEIS) for the Levy Nuclear Project (LNP) in April 2012. Issuance of the Final Safety Evaluation Report (FSER) is expected in October 2012, six months later than originally anticipated. PEF attributes the setback to additional requests for information from the NRC to address concerns regarding the events that occurred at the Fukushima plants in Japan as a result of the March 2011 tsunami. Upon issuance of the FSER in October 2012, PEF anticipates the mandatory hearing process with the NRC to begin one month later, in November 2012. PEF expects the COLA to be issued in the second quarter of 2013.

In addition to performing work to obtain the COLA, PEF continues to monitor environmental concerns (e.g., wetland mitigation plan and aquifer performance test), perform transmission study-related activities, and participate in industry groups to evaluate the disposition of the AP1000 design and operation in China and with the Vogtle and V.C. Summer AP1000 projects. **Exhibit 3** provides a snapshot of recent events that impact the project. Each event listed in this exhibit is discussed further in Chapter 2.

LEVY NUCLEAR PROJECT KEY EVENT TIMELINE

KEY EVENTS	COLA Submittal	EPC Contract	LNP Timeline	NRC Approval of AP1000 Design	Economy and Load Growth
PREVIOUS STATUS	COLA filed with NRC in July 2008	Partial suspension in 2009 and Amendment in 2010	Complete construction for 2016 in-service date	Revisions force delay to DCD and WEC provided DSA Rev 18 to NRC	Economy declines into recession
2011 EFFORTS	Respond to NRC RAIs for Environ. Report	Negotiate LLE items disposition	Continue with 2021 in-service date Schedule	NRC finalized review of design certification amendment	Despite improvements on Wall Street, unemployment remained high
CURRENT STATUS	Final EIS issued in April 2012. Respond to NRC Fukushima RAIs	Waiting for future negotiations pending COLA approval	Schedule shift to 2024 in-service date	AP1000 design certification approved in Dec 2011	Flat economy with below average near-term customer growth, energy use, and energy sales
FUTURE PLANS	Final SER to be issued in Oct. 2012. COL expected in 2013	Negotiate Full Notice to Proceed with Consortium	Develop construction schedule to meet 2024 timeline	Approval allows for COLA application to move forward	Customer energy sales and customer retail energy sales expected to increase

EXHIBIT 3

1.4.2 CRYSTAL RIVER 3 EXTENDED POWER UPRATE

Phase III, the final construction phase of the EPU project, has shifted into the current repair outage timeline. The extended outage shifted the EPU original target construction date of Fall 2011 to 2012, and then to Spring 2013. This schedule was based on the remaining work to occur during the next refueling outage. With the current outage anticipated to last until 2014, the company management deemed it reasonable to complete the work in the current outage timeline. This allows for the work to be completed in 2014 and the full uprate available when the unit returns to service. The company's feasibility analysis indicates that this will provide an overall savings to the company and end-users over time.

As with the Levy Nuclear Project, the EPU project has evolved since the Commission approved the Determination of Need in Docket No. 060642-EI. Throughout the project, the company continues to respond to internal and external factors that impact the overall project cost and schedule. **EXHIBIT 4** provides a snapshot of recent events that impact the project. Each event listed in this exhibit is discussed further in Chapter 3.

EPU PROJECT KEY EVENT TIMELINE

KEY EVENTS	LAR Submittal	Phase III Construction Timeline	Phase III Engineering Scope	CR3 Extended Outage
PREVIOUS STATUS	Original submittal was deferred in 2009 after PEF determined it would not meet NRC expectations	Planned to complete final Construction in the next outage cycle	PEF started the majority of Phase III engineering scope development	CR3 remained offline since 2009 due to the containment delamination
2011 EFFORTS	Company Submitted LAR to NRC in June 2011	Monitor the CR3 repair decisions and evaluate the option to shift work to current outage	Additional Phase III Engineering scope identified at an additional cost of \$138 million	Company assessed the repair options for the unit
CURRENT STATUS	Complete all NRC Request for Additional Information	Developing a Construction schedule to perform the work in 2013	Finalizing the remaining engineering design packages, no additional costs identified	Developing the repair strategy and moving forward with hiring a general contractor
FUTURE PLANS	Final NRC Review and Approval in 2013	Hire a general Contractor and complete final Project construction	Finalize design packages and work with contractor to verify constructability	The repair work will extend into 2014, and the unit will remain offline until then

EXHIBIT 4

In 2010, the project team identified additional scope requirements and system modifications that are necessary to complete the project. These new requirements and modifications were identified during the design finalization process. This additional scope resulted in an estimated increase in project cost of \$138 million (\$124.8 million direct cost). With the 2010 increase, the project cost has escalated from \$461 million in 2008 to the current amount of \$617 million. **EXHIBIT 5** details the estimated project cost over time. While the

project's cost has increased since inception, the company's current feasibility analysis still supports the economic viability of the project.

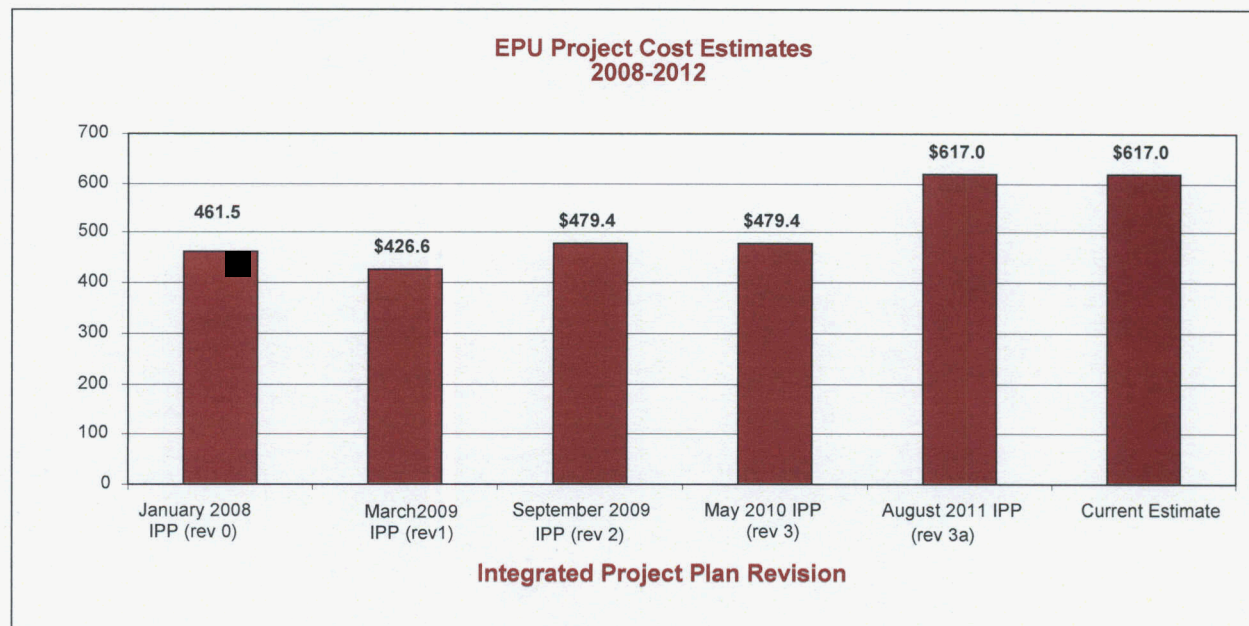


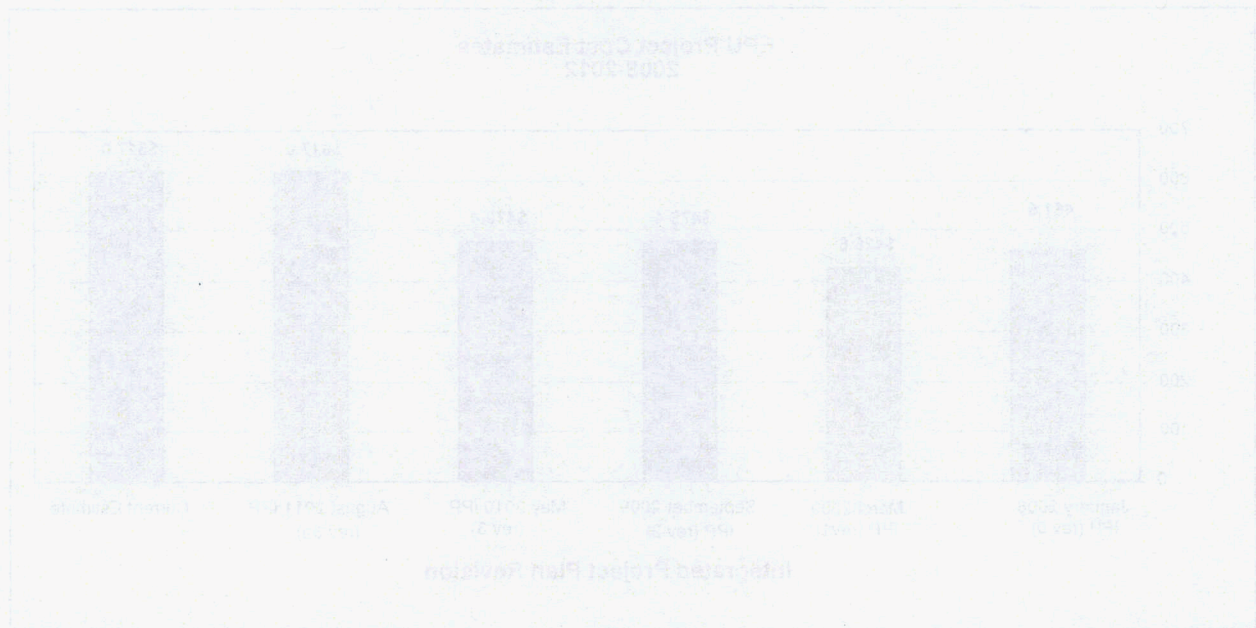
EXHIBIT 5

Source: 2006 BAP and 2008 through 2011 IPPs

The project team states as of April 2012, no additional significant changes have been identified and the project costs are still in line with the 2011 estimates. Additionally, the company continues to finalize and refine its Phase III engineering work, and additional costs may be required as this process continues. The details of the Phase III scope increase are covered in Chapter 3.

As in previous years, audit staff monitored and evaluated the company project controls in the areas of contract administration, process management and oversight, risk assessment, and organization structure. Audit staff reviewed the company's management reports and negotiated contracts to confirm the company's compliance with its internal procedures. Audit staff confirmed the company continues to monitor and update its project management process and procedures throughout this project. No variances in the company's compliance to its EPU procedures were identified during this review period.

project's cost has increased since inception, the company's current feasibility analysis still supports the economic viability of the project.



The project team states as of April 2012, no additional significant changes have been identified and the project costs are still in line with the 2012 estimates. Additionally, the company continues to finalize and refine its Phase III engineering work, and additional costs may be required as this process continues. The details of the Phase III scope increase are covered in Chapter 3.

As in previous years, all staff monitored and evaluated the company's project controls in the areas of contract administration, process management and oversight, the assessment and organization structure. Audit staff reviewed the company's management reports and reported controls to confirm the company's compliance with its internal procedures. Audit staff continue the company's efforts to monitor and update its project management process and procedures throughout the project. No variances in the company's compliance to its PMS procedures were identified during this review period.

2.0 LEVY NUCLEAR PROJECT

2.1 LEVY KEY PROJECT DEVELOPMENTS

During 2011 through April 2012, the work completed at Progress Energy Florida Levy Nuclear Project (LNP) primarily covered activities in the areas of licensing, environmental approvals, Long-Lead Equipment negotiations, and project controls and activities common to the overall LNP (e.g., risk assessments, quality assessment reviews, and audits.) The LNP cost estimate and schedule timeline have significantly changed. Currently, the company still expects the NRC to issue the Combined Operating License by mid-2013; however it has shifted the in-service date projections to 2024 for Unit 1 and 2025 for Unit 2.

2.1.1 PROGRESS ENERGY MAKES DECISION TO DEFER PLANT CONSTRUCTION

To mitigate the increased near-term uncertainty and enterprise risks (discussed in section 2.2.4, of this report) PEF's project management has also made the decision to maintain the partial suspension of the Engineering, Procurement, and Construction (EPC) Agreement for the LNP. The EPC Agreement will have to be renegotiated with Westinghouse and Shaw, Stone & Webster (the Consortium) [REDACTED]

[REDACTED] PEF's project management team anticipates [REDACTED]. The project management team noted that construction will commence in time to place Levy Unit 1 in service in 2024.

Additionally, the negotiations between the Consortium and PEF with respect to amending the EPC Agreement will include [REDACTED]

2.1.2 REGULATORY APPROVAL PROCESS MOVES TOWARDS COMPLETION

The NRC safety and environmental review schedule for the LNP Combined Operating License Application (COLA) is shown in **EXHIBIT 6**. The NRC issued the Final Environmental Impact Statement, as anticipated in April 2012. PEF expects the issuance of the Final Safety Evaluation Report in October 2012, six months later than PEF had anticipated during 2011. PEF attributes the slippage to the NRC's Requests for Additional Information (RAI) regarding risks associated with the events at the Fukushima nuclear plant in Japan (see section 2.1.4). After the Final Safety Evaluation Report is approved, the issuance of the Combined Operating License (COL) will depend upon the mandatory and contested NRC hearing process. PEF anticipates that the NRC mandatory hearing process will begin in November 2012. Based on the NRC review schedule, PEF expects the COL to be issued by the second quarter of 2013.

NUCLEAR REGULATORY COMMISSION LEVY PROJECT COLA REVIEW SCHEDULE	
Safety Review	Date
Phase A – Requests for Additional Information (RAIs) and Supplemental RAIs	March 2010 - <i>Completed</i>
Phase B – Advanced Final Safety Evaluation Report (SER) without Open Items	September 2011 - <i>Completed</i>
Phase C – Advisory Committee on Reactor Safeguards (ACRS) Review of Advanced Final SER	December 2011 - <i>Completed</i>
Phase D – Final SER	October 2012
Environmental Review	Date
Phase 1 – Environmental Impact Statement (EIS) scoping summary report issued	May 2009 - <i>Completed</i>
Phase 2 – Draft EIS issued to the Environmental Protection Agency (EPA)	August 2010 - <i>Completed</i>
Phase 3 – Responses to public comments on draft EIS completed	November 2011
Phase 4 – Final EIS issued to the EPA	April 2012

EXHIBIT 6

Source: PEF Response to Staff Data Request LNP DR 1.2

2.1.3 AP1000 DESIGN CERTIFICATION AND NRC APPROVALS

On December 30, 2011, the NRC approved an amended reactor design for the Westinghouse AP1000. Soon after, in February 2012, the NRC approved a COL for the two AP1000 reactors to be constructed at Southern Company's Vogtle plant site. Other proposed nuclear expansions in the United States using the same design now follow the Vogtle project as the NRC's official "reference site" (R-COL) for future AP1000 construction. These COLA applicants do not have to demonstrate, in their application, the safety of the certified design as amended.

In March 2012, the NRC approved a COL for one additional nuclear project site; two new AP1000 reactors for SCANA's V.C. Summer Units 2 and 3. Commission audit staff notes that both the Vogtle and SCANA site approvals occurred prior to the NRC's actions to address the events at Fukushima. The NRC's request for additional information (RAI) surrounding the Fukushima events has added time for PEF to address NRC information requests prior to the NRC issues a COL for the Levy site.

2.1.4 FUKUSHIMA NUCLEAR ACCIDENT IMPACT

In March 2011, in light of the accident at the Fukushima Dai-ichi Nuclear Power Plant, the NRC supported the establishment of an agency task force to conduct a systematic and methodical review of the NRC's processes and regulations. The purpose of the task force was to determine whether the agency should make additional improvements to its regulatory system and make recommendations to NRC for its policy direction. The task force performed both short- and long-term analyses of the lessons learned from the reactor accident at Fukushima,

In July 2011, the NRC task force published its "Recommendations for Enhancing Nuclear Safety" with its recommendation for its policy directives. The NRC assessed the task force's long-term risk concerns and developed a prioritization for assessing and implementing these risks. In March 2012, the NRC issued an order and RAI to all licensees requiring the operators to respond to the highest-ranking recommendations within the report. Additionally, the NRC issued a similar request to utilities with pending COL applications. PEF's Levy application was the first to receive this additional RAI, which requires the company to address the NRC's task force recommendations as outlined below:

- ◆ Evaluate the seismic hazards at your site against current NRC requirements and guidance, and, if necessary, update the design basis and structures systems and components important to safety to protect against the updated hazards.
- ◆ Provide reasonable protection for equipment from the effects of design-basis external events and to add equipment as needed to address multi-unit events while other requirements are being revised and implemented.
- ◆ Provide sufficient reliable instrumentation, able to withstand design-basis natural phenomena, to monitor key spent fuel pool parameters (i.e., water level, temperature, and area radiation levels) from the control room.
- ◆ Determine and implement the required staff to fill all necessary positions for responding to a multi-unit event, conduct periodic training and exercises for multi-unit and prolonged station blackout (SBO) scenarios, ensure that emergency preparedness equipment and facilities are sufficient for dealing with multi-unit and prolonged SBO scenarios, provide a means to power communications equipment needed to communicate onsite and offsite during a prolonged SBO and maintain the Emergency Response Data System capability throughout the accident.

The NRC requested PEF to provide a response to its March 2012 RAI request within 60 days of the request, or provide a schedule of response within 30 days. PEF notified the NRC on March 28, 2012 that its response to the request would be complete in August 2012. As of May 1, 2012, the Company states it is still in the process of completing its responses.

According to PEF, the associated events at the Fukushima accident are now more defined and, as a result, are now being reflected in PEF's enterprise risk assessment and tracked as a COLA risk item. According to PEF, the Fukushima event has also impacted the NRC mandatory hearings, causing a delay up to six months. Ultimately all AP1000s will be required to implement all measures the NRC requires after full study of Fukushima lessons learned.

2.1.5 BENCHMARKING TRIPS AND INDUSTRY EXPERIENCE

In March 2011, PEF performed a benchmark trip at South Texas Units 3 and 4 reviewing their COL Configuration Management (CM) Program. The benchmark identified one action item: to develop a pre-operational configuration management program for LNP that includes input from the generic AP1000 configuration management program and South Texas CM procedures obtained during the benchmark.

In addition, PEF continues to monitor the domestic AP1000 projects at the Vogtle and V.C. Summer sites to make sure appropriate processes are in place to address quality issues. In 2011, with Southern Company's and SCANA's involvement, PEF performed an Operational Readiness Review of the LNP. The focus of the self-assessment was to determine whether current programs and non-program actions support applicable milestones for the initiation of safety-related construction at LNP. No deficiencies were identified during the self-assessment.

During 2011, PEF also learned that there were Westinghouse construction vendor issues at both the Vogtle and V.C. Summer projects. Westinghouse issued stop-work orders following an audit of two vendor's quality assurance programs. In both cases, corrective actions were put in place and Westinghouse lifted their stop-work notices.

An additional benchmark meeting was held in 2011 with Duke, SCANA, and Southern Company to identify instructional strategies and implementation practices for training licensed operators on AP1000 Technology. This was a collaborative effort to standardize operating training. The result of the benchmark activity was the development of a draft program description for AP1000 initial licensed operator training.

PEF continues to participate in the APOG Construction Experience program which began in early 2011. The program includes members from AP1000 teams of Southern Company, SCANA, Duke, Florida Power & Light, Westinghouse, and The Shaw Group with involvement from INPO and NuStart. The APOG Construction Experience program is a supplement to each utility's program with focus on construction experience and generic communications that are commonly applicable to each AP1000 site.

As part of PEF's involvement with the International Atomic Energy Agency's (IAEA), PEF participated in two AP1000 project benchmarking trips in China during 2010. However, according to PEF, in 2011, due to international events in Japan, the IAEA has not focused much attention to the information exchange program with China.

2.2 LEVY PROJECT CONTROLS AND OVERSIGHT

2.2.1 INTEGRATED PROJECT PLAN REVISED APRIL 2012

Over time, the Levy Project Management Team evaluates the LNP for any major change in the project enterprise risks or project scope, schedule, or cost. The changes are reflected in PEF's Integrated Project Plan (IPP). PEF has made several revisions to its initial IPP, with the most recent revision, Rev 4, being approved by PEF's Senior Management Committee on April 23, 2012. In Rev 4, the LNP project team found that no significant Levy-specific changes in the project scope have occurred since the evaluation that preceded the previous IPP March 2011 update. However with regards to the COLA, the IPP was revised in Rev 4 to include information in response to NRC Fukushima Task Force recommendations.

Within this recent Rev 4 revision, the Levy project management team's evaluation of project risks reveals greater near-term uncertainty and increased enterprise risks than in 2011. Project enterprise risks include the economy, federal, and state energy and environmental policies, and fuel market conditions. As a result of increased near-term enterprise risks (as discussed in section 2.2.4), PEF's project management team recommended a shift in the expected in-service dates for the LNP to 2024 (Unit 1) and 2025 (Unit 2). The company asserts that the schedule shift mitigates the current uncertainty by providing additional time prior to the LNP construction commencement.

As a result of the shift in the commercial operation dates, the overall project estimate (Class 5)¹ range is \$15.1 to \$21.6 billion, with a target of \$18.8 billion.² This represents a 6.8 percent increase over the \$17.64 billion reported in the previous IPP revision in March 2011. According to PEF's project management team, the LNP remains cost-effective.

Reported cumulative actual costs through December 2011 were [REDACTED], compared to the [REDACTED] spent through December 2010. The LNP project team further

¹ The company uses a tiered estimation table to develop its cost range, depending on the amount of final engineering development. Class 5 is the most broad estimation range.

² Estimate excludes AFUDC.

recommends continued funding of approximately [REDACTED] for the period May 1, 2012 through April 30, 2013. Anticipated capital expenditures for the three-year period 2013-2015 are projected to be [REDACTED].

Commission audit staff confirmed that the company followed its process with regards to Integrated Project Plan revisions. The company adequately updated the Integrated Project Plan to request continued funding of the Levy Nuclear Project. Audit staff verified that senior management approved the revisions to the plan.

2.2.2 PROJECT MANAGEMENT POLICIES AND PROCEDURES ISSUED

PEF has procedures in place that direct the oversight and control of the Levy Nuclear Project. The company continues to review policies, procedures, and controls and revises documents as necessary based on changing business conditions, organizational changes, and project work schedules. During 2011, PEF revised 62 procedures for the Levy project in areas including interface agreements, quality assurance, development of procedures, self-assessment and benchmarking, operating experience and construction experience, engineering, condition evaluation and corrective actions, performance, contracts and purchasing, records management, the EPC contract, risk, and safety. PEF created the following eight new procedures in 2011 for the Levy project:

- ◆ Conduct of Engineering Rev 0 (04/2011) - Establishes the general requirements and expectations for the conduct of the Nuclear Engineering Department (NED) and is applicable to all personnel employed by or reporting to NED. Additional procedures establish requirements and expectations for the conduct of engineering activities that are specific to the work groups within NED.
- ◆ Conduct of Prejob Briefings/Post Job Critiques Rev 0 (06/2011) – Provides guidance for the preparation and conduct of pre-job briefings and post-job critiques for tasks/evolutions required by plant procedures. Also includes instructions to assist in determination of the scope of pre-job briefings and using checklists for tasks that are not identified as infrequently performed tests or evolutions.
- ◆ Engineering and Technical Guidelines – Discipline Engineering Rev 0 (01/2011) – Provides general roles and responsibilities for Discipline Engineers in the Fossil and Renewable Engineering.
- ◆ NGPP Interface Agreement – Environmental Responsibilities Agreement Between NGPP and ESS Rev 0 (03/2011) – Defines the roles and responsibilities for environmental-related activities performed by the New Generation Program & Projects (NGPP) and Environmental Services & Strategy (ESS).
- ◆ Development, Planning, and Execution of Large Construction Projects Rev 0 (02/2011) – Provides the definition of the NGPP project flow and approval process, guidance for when formal reviews required by PJM-SUBS-00020, Integrated Logistics Support Planning Project and Program Management Standard, should be conducted, and definition of the NGPP Issue Resolution Process.

- ◆ Project Readiness Assessment Standard Rev 0 (06/2011) – Defines a consistent, scalable approach to the application of project readiness assessments. Readiness assessment, project ranking, risk management and integration tool improves the likelihood the project will deliver products and services to the receiving asset owner on time, on budget, and in a safe, environmentally sound and prudent manner.
- ◆ Estimating Lifecycle & Management System Standard Rev 0 (08/2011) – Establishes the enterprise standard Major Project Estimate Lifecycle and Management System (ELMS). The ELMS is designed to provide estimates of adequate quality in time to support risk-informed decision at critical points along the framework.
- ◆ New Generation Siting and Environmental Permitting Guideline Rev 0 (02/11) – Provides a high level understanding of the overall process for new generation siting and environmental permitting.

These procedures appear to be in compliance with the company's standards for development of policies and procedures. Audit staff recognizes that the company will continue to update and develop policies and procedures in the future, as specific events trigger the need for them.

PEF, at this time, has no plans to develop/issue further EPC Contract procedures, but will resume with developing these procedures as specific future events trigger the need for them.

PEF continues to work with other AP1000 Owners' Group (APOG) companies to identify and develop procedures for operator training programs at the AP1000 sites. The company is also participating in APOG efforts to develop procedures for design and operational features as part of plant start-up and other training support procedures. These procedures may begin to be issued in 2012.

Additionally, PEF is currently reviewing anticipated procedures needed to support activities following COL approval by the NRC. Procedure development will be started during 2012, but they will not be officially issued until post COL approval. These procedures will be needed during the time period from COL issuance to start of construction to support routine activities and processes.

2.2.3 OVERSIGHT AND MANAGEMENT POLICIES AND PROCEDURES FOR CONTRACTORS

PEF reviews contractors' policies, procedure and controls on an ongoing basis and revises these documents based on changing business conditions, organizational changes, etc. PEF's oversight and management plan for contractors did not change in 2011, but PEF implemented additional enhancements intended to improve the oversight and management of contractors for the LNP. Also, the corporate contract procedure was reviewed and revised in 2011.

PEF continues to meet on a quarterly basis with the EPC Consortium, and continues bi-weekly phone calls with the Joint Venture Team (Sargent & Lundy, Worley Parson, and CH2M Hill) to review and discuss the work supporting the Levy COLA. Enhancements implemented in 2011 include:

- ◆ Revised Corporate Development & Improvement Group Contract Change Order Management procedures. Procedure was revised to add language for execution of changes for contracts that do not contain a change order provision and language added for internal project changes.
- ◆ Amended contract language in the Joint Venture Team Master Services Agreement to update [REDACTED], and updated language in other sections of the contract as applicable.
- ◆ Conducted bi-weekly Levy EPC change order, letters and invoice review meetings. Meetings included discussions of; the EPC invoice look-ahead, any invoice issues identified, open or upcoming EPC change orders, any open or upcoming letters, and open or upcoming non-COLA related change notices.

Audit staff continued to review these enhancements, including the audit of the Shaw invoice process, audit of the WEC and LLE invoice process, and the Joint Venture invoice process. Audit staff believes that these enhancements will strengthen internal controls.

2.2.4 RISK ASSESSMENT AND MITIGATION EXECUTED

Beginning in January 2011, PEF began holding monthly Levy Risk Review Meetings for COLA and near term non-COLA work. These risk review meetings are facilitated by the New Generation Programs and Project (NGPP) team and attended by assigned Levy project team personnel.

During the partial suspension period and consistent with the approach in 2010, project management for the Levy COLA and near term non-COLA projects identify, review, and monitor project risks and mitigation strategies. Following these meetings, Levy project risk registers are updated and published in the "Levy & Harris Monthly Project Controls/Business Services Report." The April 2012 Levy COLA Post Mitigation Risk Matrix is shown in **APPENDIX A**. The April 2012 Levy Non-COLA Near-Term Post Mitigation Risk Matrix is shown in **APPENDIX B**.

PROJECT ENTERPRISE RISKS

There are a number of enterprise risks that are outside of the control of the company and can affect PEF's ability to proceed with the LNP project. Below is a summary of the enterprise risks identified in PEF's April 23, 2012 IPP.

- Florida Economic Conditions – Nation has not yet recovered from recession. Economic conditions have been flat the last year in Florida, with growth far below the rate prior to recession. Florida unemployment higher than the national average and Florida's housing and construction industries have not yet recovered.
- ◆ Load Growth – Florida's economy adversely impacting growth in energy consumption, retail sales, and sales revenue in the near term. Over the long-term customer growth, customer energy use and, thus, retail energy sales and load, are expected to increase.

- ◆ Customer Impacts – The Company's 2010 decision to extend the partial suspension of the LNP under the EPC Agreement and proceed with the project work on a slower pace, focusing on obtaining the LNP COL, reduced the near-term project costs and resulted in lower customer bills. The recent settlement continues the Company's efforts to balance the customer's ability to pay for the LNP and the need to develop the LNP for the customers' long-term benefits as the Florida economy continues to slowly recover from the recession.
- State and Federal Policy – In Florida, there have been repeated legislative and legal attempts to repeal or overturn the nuclear cost recovery statute. Continued legislative support is necessary to support State energy policy and development of new nuclear generation. Federal support for new nuclear development remains unclear. The current Administration's support for the development of new nuclear generation remains uncertain and ill defined.
- ◆ Climate Policy – The Company continues to believe that federal and state energy and environmental policy is a fundamental enterprise risk to the LNP from both a qualitative and quantitative perspective. Qualitatively, climate control or greenhouse gas (GHG) legislation or regulation promotes nuclear generation because nuclear energy generation produces no GHG emissions. The current lack of federal and state energy and environmental policy with respect to GHG emissions increases the near-term uncertainty regarding the quality and quantitative benefits of nuclear energy generation.
- ◆ Natural Gas Markets – Natural gas fuel prices have fallen to near historic low prices over the last three years and they have remained low. However, the qualitative assessment of natural gas price forecast considers a broader time period than the annual review cycle in the short term. Over the long term, natural gas prices are forecasted to increase over the expected life of the Levy nuclear units.
- ◆ Nuclear Plant Licensing – The Company recognizes that there are risks associated with all LNP regulatory approvals and schedule milestones in the Company's risk management process. The Company works closely with the NRC and other state and federal regulatory agencies whose decisions affect the LNP schedule to monitor and analyze schedule determinations and events affecting the LNP COLA review schedule. In recent months, COLs have been issued by the NRC for both Vogtle and V.C. Summer AP1000 projects, which helps provide greater certainty for the Company in its assessment of risks in the licensing and review process.
- ◆ Fukushima – In 2011, the risks associated with the events at the Fukushima plants in Japan were reflected in the Company's risk assessment. The NRC has assessed the long term risks associated with these events and developed a framework for assessment in the plant licensing process. The NRC has provided the Company with more detailed requirements for the LNP COLA review. This risk is now tracked as a COL risk item.

PEF's project management team monitors these enterprise risks as part of the LNP risk management and considers the effects of risks in its qualitative analysis of the feasibility of completing the LNP. PEF's project management team concluded from its 2011 analysis that the LNP is still feasible over the long-term life of the Levy nuclear units. However, in the near-term there is greater uncertainty and increased near-term enterprise risks. To mitigate the near-term

risks, the LNP project management team extended the current project suspension and shifted the in-service dates to build the LNP later than previously planned. Issuance of the Full Notice to Proceed in 2012 to begin full-scale LNP construction is not supported by near-term lower natural gas prices and delayed carbon cost impacts due to legislative and regulatory energy and environmental policy uncertainty.

According to PEF's project management team, delaying the start of the LNP construction provides more time for the Florida economy to recover, for economic conditions for Florida customers to improve, for natural gas markets to balance supply and demand, for federal and state energy and environmental policy to develop, and therefore, for more certainty to develop with respect to the project's enterprise risks. PEF's project management team recommended to delay the commencement of the LNP construction, but did note that construction will begin on time to complete units 1 and 2 in 2024 and 2025.

PROJECT FEASIBILITY

One aspect of the feasibility assessment of the LNP is a life-cycle net present worth assessment (also known as cumulative present value of revenue requirements, or CPVRR). CPVRR assessments are typically prepared by PEF's System Planning group in support of need petitions. The CPVRR assessment was updated for the 2011 FPSC Nuclear Cost Recovery filing based on the Company's then-current forecasts, construction schedule and cost estimates for the LNP and other generation technologies. Based on the forecast assumptions and information used and presented in the 2011 filing, including the CPVRR study updates and other qualitative factors, the results of the CPVRR assessment indicated that the plan including the LNP is less favorable than the previous assessment performed in 2010.

PEF has again updated the CPVRR assessment based on the Company's current forecasts for submission in the 2012 filing. In review of the updated results, the following key considerations guided the company's changes to the project analysis.

- ◆ Capital expenditures for the LNP and alternative projects are one of the key inputs to the feasibility assessment. The estimates have been updated based on consideration of proposed revised in-service dates of June 2024 and December 2025. The revised results reflect changes to the key milestone dates, impacts of discounting related to delayed expenditures, and the impacts of the delayed benefits related to fuel savings and emission costs.
- ◆ The long-range forecasts for fuels have changed since the 2011 study was performed. The forecast price of natural gas continues to fall, particularly in the near term with impacts reflected in the longer term price forecasts as well.

The long-range expectations for cost of capital and operating costs, long-range forecasts of customer growth, and expectations surrounding future environments legislation are also among the key inputs. In general, PEF noted that these inputs have not changed significantly from the forecasts used in the 2011 study.

2.2.5 CHANGES TO MANAGEMENT OVERSIGHT AND STAFFING

Concurrent with the shift in the LNP in-service dates, the need for filling additional staffing of positions is expected to extend out through the mid to late 2015 timeframe. PEF is no longer targeting early 2012 to develop and approve the Levy Organizational Plan for both the project and operations staff. The Company is also no longer planning for early 2013 to begin the

recruiting process for nuclear operators. Recruiting of key project personnel positions identified will also be delayed due to the schedule shift.

At the PEF Senior/Executive Management level, there have been no managerial changes that have occurred since the last update in June 2010. Management of the LNP continues under the leadership of the Vice President of the New Generation Programs and Project (NGPP) team. The NGPP team provides project support in the areas of project management, project controls and performance improvement.

Engineering and Licensing remain at current staffing levels to support obtaining and maintaining the Levy COL. PEF's internal organizations such as Service Company Finance, Environmental Services, and Legal provide additional project support. In 2013, it is anticipated that PEF's engineering, project controls, and construction personnel will be assigned to monitor the Vogtle and/or V.C. Summer projects in order to collect operating and construction experience to be applied to the Levy project.

2.2.6 INTERNAL AND EXTERNAL AUDITS COMPLETED IN 2011 AND PLANNED IN 2012

PEF's Audit Services Department (ASD) completed two 2011 audits relevant to the Levy Project. The Florida Nuclear Plant Cost Recovery audit was issued on March 23, 2011. The audit tested a sample of invoices for compliance with the Nuclear Plant Cost Recovery Rule related to Crystal River 3 Extended Power Uprate Project and the Levy Nuclear Plant Project. The overall audit opinion was effective (meaning satisfactory). No specific observations or recommendations for improvement were identified.

The Levy Nuclear Plant audit report was issued on May 24, 2011. The objective of the audit was to assess overall project management effectiveness of the LNP program. The audit scope included assessment of major equipment procurement strategy, contract administration, and financial forecasting. The overall audit opinion found PEF's processes to be effective; however, the following minor observations and recommendations for improvement were identified.

- ◆ The Levy Program Governance Policy requires the development and implementation of a Program Execution Plan. The Plan should provide additional and more detailed guidance on how the program and element projects, such as COLA and Engineering, Procurement, and Construction (EPC), are managed.
- ◆ Contract change order logs did not meet the required form and content of procedure requirements.

PEF has since implemented corrective actions to satisfy the audit recommendations. There were no controls-related external audits conducted on the LNP in 2011 and none are planned for 2012. A 2012 internal audit is planned to review the Levy EPC Contract. The proposed audit scope is to conduct a project management assessment on such focus areas as schedule management, risk management, procurement and contract management, and project controls reporting. The timeframe for completing this audit is currently targeted for sometime during the second half of 2012. However, PEF's Audit Services has just begun the routine mid-year Audit Plan Review to reevaluate the priorities of proposed audits and adjust the audit plan accordingly. Once this review is complete, the Levy EPC Contract audit may or may not remain in the 2012 plan. The mid-year Audit Plan Review will be finished in early July 2012.

2.2.7 QUALITY ASSURANCE ASSESSMENT REVIEWS AND AUDITS COMPLETED IN 2011 AND PLANNED FOR 2012

In addition to the internal audits conducted on the LNP, PEF performed and participated in nine nuclear quality assurance assessment reviews and audits in 2011. Of the nine reviews and audits completed; four were audits performed by a Nuclear Procurement Issues Committee (NUPIC). These audits are a collaboration between PEF and other Nuclear Power generating companies that use the same nuclear supply vendors.

Four of the reviews were source surveillance reviews jointly performed by PEF's quality assurance auditors and PEF's Nuclear Oversight (NOS) Department. This is a collaboration within PEF's internal audit units. The quality assurance audit group is familiar with the specific contract related requirements outlined in a vendor's contract while the NOS group specializes in nuclear safety and monitoring standards. The final audit was performed by PEF's NOS Organization. PEF noted that it has made no changes in the Levy project management controls as a result of (NOS) internal audits, external audits, and quality assurance reviews. **EXHIBIT 7** identifies each quality assurance assessment and dates of completion.

LEVY NUCLEAR PROJECT QUALITY ASSURANCE ASSESSMENTS AND AUDITS COMPLETED 2011	
Description	Completed Dates
PGN Surveillance of Sargent & Lundy subcontractor Rizzo/Fall Line Testing—RCC Test	January 12-14, 2011
PGN Surveillance of Westinghouse and Mangiarotti QA Issue resolution	March 7-10, 2011
PGN Surveillance of LNP Reactor Coolant Pump (RCP) parts in storage	March 10, 2011
PGN Surveillance of Sargent & Lundy subcontractor Rizzo/Fall Line Testing – RCC Test (NOS and New Generation Programs and Projects personnel)	April 11-15 and 25-28, 2011
NUPIC Audit of Worley Parsons Reading, PA	May 16-19, 2011
NUPIC Sargent and Lundy LLC	June 20-24, 2011
NUPIC Audit of Westinghouse Electric	July 25-29, 2011
Internal NOS Assessment of New Generation Programs and Projects (Nuclear Plant Development)	September 26-29, 2011
NUPIC Audit of Shaw	October 31-November 11, 2011

EXHIBIT 7

Source: PEF Response to Staff Data Request LNP 1.32

The majority of the issues identified in these quality assessment reviews and audits provide PEF with insight into the current performance of its AP1000 vendors. The NUPIC audits were performed on four separate vendors to verify the adequacy, effectiveness and implementation of each vendor's Quality Assurance Program. With the exception of the audit performed on Westinghouse Electric, the NUPIC audit team found each vendor to be effectively implementing its quality assurance programs. In the Westinghouse Electric audit, NUPIC discovered two findings determined to be Potentially Significant Conditions Adverse to Quality:



[REDACTED]

The four Source Surveillance reviews were conducted to verify the work activities performed by two vendors, Westinghouse Electric and Sargent and Lundy. In three of the reviews, the surveillance team identified failures to comply with quality assurance program requirements. The failures ranged from the need for additional attention to detail in the conduct of work activities to inadequate conditions of the warehouse where the Levy Nuclear Plant material was being stored. Each vendor addressed and resolved each failure to meet the requirements of their respective quality assurance programs.

PEF's NOS Department performed an assessment to determine the effectiveness, performance, and implementation of the Quality Assurance Program activities associated with new nuclear plant development within the New Generation Programs and Projects (NGPP) organization. The assessment was intended to ensure that applicable NGPP activities were being conducted in accordance with applicable rules, regulations, procedures and company policy. With the exception of a finding related to incomplete Quality Assurance record retention of calculations for some NGPP activities, NOS found NGPP to be effectively implementing its Quality Assurance Program.

Three quality assurance assessments and audits are planned for 2012. Two of them will be conducted by NUPIC; one on Westinghouse Electric and one on Shaw Nuclear Services. NOS will also be conducting an assessment of nuclear plant development and operational readiness. The quality assurance assessments and audits planned for 2012 are shown in **EXHIBIT 8**.

LEVY NUCLEAR PROJECT QUALITY ASSURANCE ASSESSMENTS AND AUDITS PLANNED FOR 2012	
Description	Scheduled Dates
NUPIC Audit of Westinghouse AP1000	Third Quarter 2012
Internal NOS Assessment of Nuclear Plant Development and Operational Readiness	September 10-14, 2012
NUPIC Audit of Shaw Nuclear Services	Fourth Quarter 2012

EXHIBIT 8

Source: PEF Response to Staff Data Request LNP 1.32

2.3 LEVY PROJECT CONTROLS AND OVERSIGHT

2.3.1 CHANGES TO CONTRACTS AND CONTRACT MANAGEMENT

PEF issued two new RFPs for contracts in excess of \$100,000 since the last audit staff report in 2011. The RFPs were for:

- ◆ Detailed Wetland Mitigation Planning -The scope of work supplements the work already completed for the April 2010 Wetland Mitigation Plan. In particular it addresses the work necessary to provide the final design level of detail to support the Section 404 permit application and post-certification submittals.
- ◆ Cultural and Archeological Resource Consulting Work -The project involves proper coordination, execution and evaluation of Cultural and Archeological Resources required for the design, construction, and commissioning of the transmission lines, right of ways, and substations associated with the Levy Baseload Transmission Program.

PEF provided work authorizations, change orders, and impact evaluations on all contracts previously examined in Commission audit staff's 2008, 2009, 2010, and 2011 reviews. There were 16 change orders executed for the Levy EPC contract in 2011, and 29 Joint Venture Team impact evaluations (assessment) written against the work authorizations (approval to proceed.) All but two of the impact evaluations have been incorporated into executed amendments to the contract work authorizations.

A list of PEF contracts valued greater than \$100,000 that have been executed or updated since the last review (excluding 2011 EPC contract activity) and work authorization is found in **EXHIBIT 9**. The two largest contracts (255934-05 and 255934-06), in terms of dollars, were necessary in support of PEF's COLA preparation in response to NRC's request for additional information.

LEVY NUCLEAR PROJECT CONTRACTS GREATER THAN \$100,000 EXECUTED DURING 2011				
Company	Contract #	Amend . Or WA #	Specific Scope	New Contract Activity for 2011 (\$000's)
Environmental Services	551338		Provide Wetland Mitigation Detailed Design Plan	████
Environmental Services	551338	1	Amendment to implement a revised milestone payment schedule.	████
Environmental Services	551338	2	Additional work which includes supplemental surveys and design.	██
Environmental Services	551338	3	Amendment extended end date only.	██
Golder Assoc.	453352-03		Provide U.S. Army Corps of Engineers Section 404 Permit support for the Levy Project,	████
Golder Assoc.	453352-03	1	Amendment extended end date only.	██
Golder Assoc.	453352-03	2	Add additional scope: USACE Jurisdictional Wetland Determination; USFWS Threatened and Endangered Species Evaluation and As-Needed Services.	██
Joint Venture	255934-05		COLA Phase II Support to respond to NRC Requests for Additional Information and other COLA support.	████
Joint Venture	255934-05	7	Response to NRC letter 093 RAI 02.04.03-6 (L-0868) and NRC letter 094 RAI 02.04.06-16 (L-0867).	██
Joint Venture	255934-05	8	Response Package NRC Letter 104 RAI 02.04.05-11 (L-0937) & Supporting Probable Maximum Hurricane (PMH) Surge Calculation.	██
Joint Venture	255934-06		LNP Site Certification Application 2009 Follow On Activities.	████

LEVY NUCLEAR PROJECT CONTRACTS GREATER THAN \$100,000 EXECUTED DURING 2011				
Company	Contract #	Amend . Or WA #	Specific Scope	New Contract Activity for 2011 (\$000's)
Joint Venture	255934-06	6	Amendment extended end date only.	
Joint Venture	255934-09		Levy COLA Revision 2 for submittal to NRC.	
Joint Venture	255934-09	4	Amendment to capture the work scope description and identified schedule impact detail associated with approved JVT change orders.	
Joint Venture	255934-09	5	Amendment to capture work scope description and identified schedule impact detail associated with approved JVT change orders.	
Joint Venture	255934-09	6	Amendment to capture work scope description and identified schedule impact detail associated with approved JVT change orders.	
Southeastern Archaeological	442498-03		Provide cultural resources for FEIS and 404 Permit.	
Southeastern Archaeological	442498-03	1	Amendment extended end date only.	
Southeastern Archaeological	442498-03	2	Amendment extended end date only	
Westinghouse Energy Develop.	3382-155		Scope of work is to support the COLA review process, as needed, for both the Harris and Levy Nuclear Plants.	
Westinghouse	3382-155	6	Additional funding for 2012 to support request for additional information (RAI) responses to the NRC and request for information responses received and extend contract end date	
Energy Develop.	3382-208		Provide a Levy Nuclear Site Soil Structure Interaction Analysis in response to NRC letter #085.	
Westinghouse	3382-208	1	Contract end date is being extended to allow for Westinghouse's support of the NRC review of the SSI analysis and report.	
Energy Develop.	3382-208	2	Additional scope required as a result of an NRC Structural Branch Audit for LNP SSI Analysis and RCC Test program.	
Westinghouse	3382-208	3	Schedule and scope is modified to update SSI analysis-time histories provided to Westinghouse for the Levy SSI analysis.	

EXHIBIT 9

Source: PEF Response to Staff Data Request LNP 1.25

2.3.2 EVALUATION OF CONTRACT INVOICES

In testing PEF compliance with published procedures, Commission audit staff reviewed a sample of invoices paid by PEF to support the LNP project during 2011. Commission audit staff obtained a sampling of invoices from the population of all LNP invoices paid, greater than \$50,000. Out of approximately 100 invoices paid by the company, Commission audit staff sampled 20 invoices. The invoices reviewed included payments for legal support, Westinghouse/Shaw, Stone & Webster, and the Joint Venture Team. Commission audit staff determined whether PEF followed its policies and procedures with respect to the processing of these invoices.

Commission audit staff confirmed that the sample of invoices reviewed were accurate and that PEF's analyst used the appropriate contract exhibit (billing rates) to verify the accuracy of the amounts. Additionally, Commission audit staff confirmed management approvals of each

invoice. Commission audit staff did not find any instances where PEF failed to follow existing procedures with respect to the sampled invoices.

2.3.2 CONTINUED INTEREST IN JOINT OWNERSHIP

In April 2011, PEF provided an update to potential joint owners [REDACTED] on the LNP. These entities expressed continued interest in joint ownership in the LNP. However, according to PEF, while the interest exists, it has not led to joint ownership commitments because of the effects of the economic recession, NRC licensing delays, and the uncertainty with respect to project cost, timing, and federal and state energy and environmental policy. PEF plans additional meetings with potential joint owners during 2012.

invoice. Commission staff did not find any instances where PEF failed to follow existing procedures with respect to the sampled invoices.

2.4.2. Commission interest in joint ownership. In April 2012, PEF provided an update to potential joint owners. [REDACTED] on the LIR. These entities expressed continued interest in joint ownership in the LIR. However, according to PEF, while the interest exists, it has not led to joint ownership commitments because of the effects of the economic recession, NRC licensing delays, and the uncertainty with respect to project cost, timing, and federal and state energy and environmental policy. PEF plans additional meetings with potential joint owners during 2012.

3.0 CRYSTAL RIVER 3 EXTENDED POWER UPRATE PROJECT

3.1 2010 EVENTS THAT THE COMMISSION WILL REVIEW IN THE CURRENT NUCLEAR COST RECOVERY CYCLE

COST ESCALATION SINCE PROJECT INCEPTION

PEF's CR3 uprate project team presented the original project cost estimates to senior management in the 2006 initial Business Analysis Plan. This document summarized the original capital cost estimates, key assumptions and key risks, the company's economic analysis, and the original project feasibility study. The EPU project management team points out that, as of the 2006 evaluation, the company had developed less than 10 percent of the final Phase III engineering scope work. This scope is the final modification necessary to complete the unit uprate. **EXHIBIT 5** highlights the cost estimates over time.

In the original 2006 evaluation, the company estimated the project cost to be \$427.2 million. This amount includes \$89 million in anticipated transmission costs, \$88 million in water cooling costs, and \$250 million in plant costs. In its evaluation, the company incorporated a 10 percent contingency factor in assessing the "worst case scenario" for the cost of the project. The company notes that it established the 10 percent contingency with the understanding that the vast majority of the Phase III engineering analysis was incomplete. Additionally, the project team notes that in 2006, there was uncertainty in the need for the planned transmission and water cooling work, and that the costs associated with these items, if not needed, could provide additional contingency. The company did in fact determine the \$89 million transmission costs to be unnecessary and used this allocation to offset increases in Phase II costs.

In July 2009, the company developed a procedure on Project Cost and Financial Management, which, among other points, established parameters for developing cost estimates and contingency percentages. This procedure was revised and implemented in 2010. This procedure references the *Association for the Advancement of Cost Engineers* standard for incorporating project estimates and contingency parameters based on the amount of engineering work remaining to finalize the project. In accordance with the *Project Management Body of Knowledge*, the procedures define the parameters of contingency to include funds "added to the base cost of the project to cover estimate uncertainty and risk."³ The company established its contingency amounts accordingly.

As of the 2011 Integrated Project Plan update, project management stated that approximately 30 percent of the Phase III engineering design was still outstanding. Under the new procedures, the company should anticipate that its accuracy rate to be within 5 percent below to 10 percent over the estimated \$124 million in additional scope costs. With approximately 30 percent of the engineering packages still outstanding, the overall cost estimates could continue to increase during the remaining planning phase. **EXHIBIT 10** details this Phase III cost increase by activity.

³ PEF Response to Staff Data Request DR6CR3-2 Bates 000004.

EPU PROJECT PHASE III COST INCREASE BY PROJECT AREA (DIRECT VIEW)	
Project Area	Amount
Engineering	██████████
Procurement	██████████
Construction	██████████
Project Management/Administration	██████████
Total Increase	\$124,800,000

EXHIBIT 10

Source: PEF Response to Staff Data Request 1.17

The company plans to hire a general contractor to manage the construction of the Phase III installation. The project team anticipates the initiation of the contract RFP process in 2012—after the company moves forward with the containment repair initiative. For the general contractor contract, the company is using a 2010 Rough Order of Magnitude evaluation to establish its construction costs portion, approximately ██████████ of the \$124 million total scope increase. If the actual contract price exceeds this estimate, the overall project costs will increase.

3.2 EPU KEY PROJECT DEVELOPMENTS

3.2.1 EPU PHASE III SCHEDULE SHIFTED INTO THE CURRENT REPAIR OUTAGE

The company originally planned to complete the final phase of the EPU project during the next refueling outage (R17 fuel outage), which was originally scheduled for Fall 2011 but has been delayed until 24 months after the unit returns to service. With the extension of the R16 outage due to the delamination repairs, the company re-evaluated its options to complete this work under the expectation that the CR3 unit would be repaired and returned to service.

In 2011, the company made the decision to move forward with the repair option for CR3. Senior management directed the EPU project team to evaluate the options of continuing on the original schedule timeline versus shifting the final EPU work into the current extended outage. The project team completed an evaluation of the two options, and determined that the shift in schedule would provide the greatest benefit to the end users.

The team's evaluation indicated that deferring the project until the R17 outage would add \$33 million to the final construction cost estimate. There would be additional rate impact due to forgone expected fuel savings from the EPU's additional MWe output during the interim. In February 2012, the project team presented its findings and recommendation, and the Senior Management Committee approved retaining the option of shifting the Phase III construction into the current outage. The company plans to incorporate this change into the next revision to the project's IPP.

With the shift, the project team will have additional time to complete the EPU construction work. The original R17 schedule included 45 days of construction to complete the work, while the shift into the current outage will extend that by an additional 325 days. In the original R17 schedule, the EPU Phase III work was the planned Critical Path for that outage, and any delays in construction would have extended the outage timeline. With the EPU work

removed, the R17 outage will have a reduced 30 to 40 day timeline (given no other work is scheduled.)

The project team is working with the containment repair team to form an integrated project team to evaluate and devise the most efficient schedule for the completion of the containment repair and the EPU work with minimum interference. Currently, the containment repair is the critical path driver for the current extended outage, and the EPU work is not expected to create any delays to the remainder of the outage timeline. **EXHIBIT 11** details the company's Phase III construction timeline.

EPU PROJECT PHASE III PREPARATION SCHEDULE MILESTONES SCHEDULE SHIFT INTO CURRENT R16 EXTENDED OUTAGE	
Timeline	Event
Engineering – Field Work Engineering Changes	Ongoing – December 2012
Engineering – Design Only Engineering Changes	Ongoing – July 2014
Balance of Work – Estimates, Schedules, Constructability	January 2013 – April 2013
Balance of Work – Construction Preparation, Training	April 2013 – June 2013
Balance of Work – Field Construction	June 2013 – June 2014
Point of Discharge (cooling tower) Construction	April 2014 – April 2015

EXHIBIT 11

Source: CR3 DR2 3-1

3.2.2 LICENSE AMENDMENT REQUEST SUBMITTED TO THE NRC IN JUNE 2011

The company submitted its License Amendment Request to the NRC in June 2011. The NRC formally accepted the submittal in November 2011. The NRC has initiated the Request for Information process for the review of the request, and the company is working to complete these requests timely.

In April 2011, the NRC held a public meeting with PEF to discuss its upcoming LAR submittal. During this meeting, NRC staff confirmed that its LAR review schedule could take up to 24 months after it accepts the application. The NRC officially accepted PEF's application in November 2011, therefore, the NRC's review and approval process of the company's LAR could take until the end of 2013 to finalize. Given that the current repair schedule timeline shows an estimated return to service date of 2014 and barring any unexpected issues, the LAR process should be complete prior to the CR3 restart.

Since the company had submitted its LAR application prior to its decision to shift the Phase III construction into the current outage, it will have to make minor modifications to its application with the NRC. The current application with the NRC includes testing dates that correspond to the next refueling outage. The company will need to modify these dates to reflect the current outage timeline. The company estimates that the PEF internal labor cost associated with this modification would result in an additional \$190,000 in LAR costs to the projected EPU cost estimate.

3.2.3 PROJECT SCOPE FOR PHASE III OF THE EPU CONSTRUCTION PROJECT

As noted in the 2011 *Review of Progress Energy Florida, Inc.'s Project Management Internal Controls for Nuclear Plant Update and Construction Projects* the project management engineering team spent the majority of 2010 developing the engineering scope for Phase III of the EPU project. During this 2010 analysis and development, the project team determined that additional work was necessary to complete the uprate as envisioned. Project management explained that because completion of the majority of Phase III engineering scope development would follow the Phase II construction work, the company could not anticipate the specific modifications and additions necessary to finalize the construction project.

The company asserts that each 2010 scope modification or addition was necessary to complete the full project design or confirm the safety requirements of the NRC. The project team states that no modification or addition resulted from a design or construction error or omission. Rather, each 2010 scope modification or scope addition resulted from an open safety or performance issue. For each open issue, the project team evaluated the impact scenarios to determine the best engineering resolution. When applicable, the company evaluated each potential resolution and presented management with these options, recommending what was believed to be the most appropriate resolution.

Commission audit staff reviewed the 2010 external assessment and internal management reports detailing the scope additions and the analysis used by the company to determine its course of action. These assessments looked at the engineering specifications needed to complete the project. These management reports confirmed the need for the scope additions and the options reviewed by the engineering team. Commission audit staff confirmed that the project team followed PEF procedures in developing and approving the scope changes.

In 2011, the company continued to refine and complete the Engineering Change packets for the final construction phase. As of March 2012, the project team asserts that 70 percent of the Engineering Changes have been finalized. The project team states that there has been less additional engineering scope increases identified since the 2010 evaluation. Additionally, the engineering cost estimates that were outlined in the 2010 commission staff audit report have no significant changes.

3.2.4 DELAYED ISSUANCE OF REVISED INTEGRATED PROJECT PLAN (IPP)

The company delayed issuing a full revision of its Integrated Project plan in 2011. The company chose to delay its update until the senior management finalized the containment repair planning. The company states that this was appropriate, given the schedule uncertainty that the delamination repair timeline created for the EPU project. However in August 2011, in order to maintain compliance with internal procedures, the EPU project team initiated an update to the IPP Rev 3A. The IPP Rev 3A shifted the Phase III work into the current outage repair timeline for funding purposes. The current update does not include any significant changes to the estimated project costs.

The project team originally anticipated issuing a full update to the IPP in November 2011. This date was eventually shifted to February 2012. Both updates were postponed by the Senior Management Committee due to the ongoing issues surrounding the delamination repair initiative. The company has not established a new timeline for its upcoming IPP Rev 4 review pending the resolution of the repair schedule.

The August 2011 IPP Rev 3A formally communicated to the Senior Management Committee the project cost increase of \$138 million described in company testimony in Docket 110009-EI. In 2011, the project team added Phase III engineering scope, increasing the project costs by \$138 million financial view (\$124.8 direct view⁴). The 2011 Integrated Project Plan summary breaks down the additional \$124.8 million by activity. The largest portions of the scope addition are associated with additional engineering cost and associated additional construction costs.

The company has not performed additional construction cost estimates since it contracted with an outside vendor to conduct a rough order-of-magnitude evaluation and estimate for the Phase III construction scope in 2010. The company used this study for its baseline construction cost estimate and believes that the estimate is attainable. The company plans to use this study as a reference during its upcoming Request for Proposal process for hiring the general contractor for the Phase III construction.

In addition to formally documenting the funding request for the additional scope, the August 2011 IPP requested near-term funding for work to retain the option of shifting the Phase III construction into the current R16 outage schedule. This additional funding would shift anticipated future funding into the near term. The specific work authorization request includes:

- ◆ Continuing Engineering Activities
- ◆ Continuing LAR Activities
- ◆ Continuing Work Order planning
- ◆ Continue Procurement Activities for previously contracted long lead equipment
- ◆ Re-negotiate Turbine contract for installation timeline
- ◆ Initiate AREVA change order to update Technical Basis Documents for the Emergency Operating Procedures.

The August 2011 IPP states that the Senior Management Committee would make the decision on shifting the construction schedule into R16 in early 2012. Audit staff notes that the SMC made the decision to shift this work in February 2012, pending the successful initiation of the containment repair initiative. Additionally, the project team reported to audit staff in March 2012 that the cost estimates provided in the August IPP are still current.

3.2.5 DISCHARGE COOLING TOWER PROJECT SUSPENDED

In 2010, the company made the decision to suspend the new cooling tower project for the Crystal River Energy Complex pending the outcome of proposed environmental regulation that could impact the need for the tower. The project team reports that the company is still monitoring the potential impact new regulations could have on the project and how these changes will impact the overall discharge requirements of the site. The company anticipates presenting a recommendation to its senior management concerning the need for the tower in 2012. However, if built under the new construction schedule, the work on the discharge cooling tower project would start in April 2014 and be completed in mid-2015.

⁴ A Direct View cost estimate is the project cost, excluding total burdens and allocations. Burdens include AFUDC, employee benefits, pension and payroll taxes, sales tax, and overtime.

3.3 EPU PROJECT CONTROLS AND OVERSIGHT

3.3.1 CHANGES TO PROJECT CONTROLS, RISK AND MANAGEMENT OVERSIGHT DURING 2010

The company continues to evaluate its processes, policies, and procedures for major project and EPU specific operations. During 2011, the company implemented both new project management procedures and revisions and updates to project management and EPU guidance procedures. The company modified certain corporate procedures, including the areas of:

- ◆ Project Governance
- ◆ Major Projects IPP
- ◆ Project Integration Management
- ◆ Project Manager Qualifications

For specific Nuclear and EPU procedures and guidance documents, the company made numerous revisions to its procedures within the areas of:

- ◆ Safety
- ◆ Self Assessment/Benchmark Programs
- ◆ Engineering programs
- ◆ Condition Evaluation and Corrective Action Processes
- ◆ Document Controls

After review, audit staff believes the documents are consistent with the standards of the company and provide additional guidance to the project and further strengthen the internal controls.

MANAGEMENT CHANGES IMPLEMENTED

The key EPU project team personnel remained consistent through 2011. The company continued to assess and limit the number of personnel assigned to the EPU project during the ongoing R16 outage. Engineering work increased during 2011 and the project team has maintained an adequate number of personnel to handle this work. As the project moves forward, the staffing plan will increase personnel over the project schedule. The company plans to fill these positions with both internal employees and hired contractors,

The Director of Major Projects, who oversees the EPU Project Manager, was replaced in 2011. Additionally, there were three General Managers assigned to the group during the prior year. Of note, the company's Nuclear Oversight auditing group expressed concerns in a recent audit over the "significant number of personnel rotations" within the senior management of the Nuclear Upgrades group. This audit finding is further described in section 3.3.2.

RISK EVALUATION PERFORMED

The company's risk evaluation process remained unchanged throughout 2011 and 2012. Audit staff reviewed the risk matrices, noting changes made by the company over time. Commission audit staff notes the project team regularly monitored and updated risk considerations. As of February 2012, the project team tracked 11 open risk items. Of these, PEF categorized five as low-risk, three as moderate-risk, and two as high-risk. The two high-risk items were both deemed to have a moderate probability of occurrence. Audit staff notes that this document and process is dynamic and updated by the project team as necessary.

One high-risk item being tracked is additional Phase III scope growth that could negatively impact the project budget and schedule. The project team states that as ongoing engineering work progresses, the risk of additional scope growth becomes less and less probable, though additional scope could yet be identified. The company mitigation strategy for this risk is to continue to challenge all engineering changes for technical objectives, while continually focusing on the costs.

The other high-risk concern is the potential for the containment repair work being completed ahead of schedule. If this occurs, the Phase III construction work could become critical path and cause the unit to remain offline longer than anticipated. As management refines the repair schedule, the EPU project team believes that its construction work will not exceed the repair window, even with an early completion. The company intends to mitigate this risk by developing a schedule that completes all construction activities by the end of 2014. The company also plans to work with its general contractor, once hired, to achieve this goal.

Audit staff notes that as the final project phase moves toward construction, a continued focus on identifying and mitigating all project risks will be essential to ensuring a successful implementation with minimal project interruptions or cost overruns.

3.3.2 INTERNAL AUDITS AND QUALITY ASSESSMENTS PERFORMED IN 2011

The company conducted two internal reviews related to the CR3 EPU project during 2011. The Audit Services Department performed its annual audit of the Cost Recovery Compliance. The audit determined the company's process was effective for the review period. Additionally, the Nuclear Oversight Department (NOS) completed a review of the Progress Energy's Nuclear Generation Group uprate project sites and the group's corporate office. This report contained both site-specific findings and fleet-wide findings. Two findings were applicable to the CR3 uprate project.

The first finding addressed a lack of rigor when developing a "detailed contract scope of work has resulted in less than acceptable results in clear definition in regard to the Quality Assurance Program, product deliverables, and meeting incident reporting expectations." The audit determined that a vendor providing support work did not include reasonable quality assurance requirements within certain scope areas. While this finding had implications on the CR3 project, because it was a fleet-wide contract, the corporate group was responsible for the deficiencies noted by the audit. The NOS provided guidance in resolving this finding, including assisting developing a standard QA template to be used in contract scope documents.

The second finding pertinent to the CR3 EPU project addressed adverse conditions that were not recognized or documented by the project team. The finding noted several instances where the CR3 project team did not complete or fully document condition reports and personnel exhibited poor behavior in regards to issuing reports. The report notes one instance where a timely report was not generated to note an early termination of a vendor contract. Also, NOS states that the CR3 project team did not perform adverse condition trending reports timely.

Audit staff discussed these findings with the project team and interviewed the Nuclear Oversight auditor to verify that unit's satisfaction with the resolution of these findings. The project team states it has incorporated additional practices to ensure all reports and documentation are performed timely and the company audit did not require a specific follow-up requirement.

In addition to the CR3-specific findings, the NOS department observed that there has been repeated turnover within the upper management of the Major Projects group in recent years. The report points out that three different employees over the last year had served as the General Manager of Nuclear Projects. Additionally, the company filled the Director of Major Projects in 2011, but that individual was re-assigned to the CR3 repair project. Regarding the impact of this turnover upon the individual Upgrade projects, the NOS auditor does not believe the lack of leadership continuity has impacted the success of these projects. The NOS team noted that CR3's project management team has been constant and its members are very knowledgeable in the project scope.

3.4 EPU CONTRACT OVERSIGHT AND MANAGEMENT

3.4.1 CHANGES AND ADDITIONS MADE TO CONTRACTS AND CONTRACT MANAGEMENT

During 2011, the company issued three new contracts for Phase III of the EPU project. This was primarily due to the lack of ongoing project work during the company's evaluation of the containment building delamination impact. Management states the contracts initiated during 2011 were necessary to ensure the project could continue within a reasonable timeframe once the impact to the project schedule was known. **EXHIBIT 12** lists the contracts initiated in 2011 for the final EPU construction phase and the total contract amount.

EPU PROJECT CONTRACTS OVER \$100,000 INITIATED IN 2011			
Vendor	Initiation Date	Work Scope	Contract Price
SPX Heat Transfer, Inc Contract 590686	11/ 2011	Replace High Pressure Closed Feedwater Heaters	██████████
Impact Services, Inc Contract 548483	04/ 2011	Disposal of old Moisture Separator Reheaters	██████████
Curtis Wright/Scientech	3/ 2011	ICCMS equipment	██████████
Total			██████████

EXHIBIT 12

Source: PEF Response to Staff Data Request 1.19

Commission audit staff reviewed each contract issuance process against PEFs policies and procedures. In each case, it appears the company followed appropriate processes. Audit staff verified that each item was included in the required Phase III scope of work.

In addition to the new contracts executed in 2011, the company initiated amendments to several of its existing contracts. **EXHIBIT 13** lists the 2011 amendment and Change Orders over \$100,000 that the company initiated on existing contracts. All the amendments and change orders were initiated with AREVA and the engineering work involving the Phase III scope.

For each amendment, audit staff reviewed each impact evaluation and Integrated Change Form to confirm the company was in compliance with its project management and procurement procedures. The company requires that management authorize any scope or schedule change identified within the Integrated Change Forms. In each case, audit staff determined that the authorized approval was obtained for each change and that the company initiated these contracts in accordance with its current process and procedures.

EPU PROJECT WORK AUTHORIZATION AND AMENDMENTS INITIATED DURING 2011		
Amendment	Work Scope	Amendment Price
Areva Contract 101659-84, Amd 11	Engineering work for the NSSS	████████
Areva Contract 101659-84 Amd 12	Engineering work for the NSSS	████████
Areva Contract 101659-93 Amd 13	Balance of Plant engineering work	████████
Areva Contract 101659-93 Amd 14	Balance of Plant engineering work	████████
Areva Contract 101659-84 CO 55 R3	Project planning-Boron Precip Issue	████████
Areva Contract 101659-84 CO 63 R0	Feedwater Line Break with Failed First Reactor analysis	████████
Areva Contract 101659-84 CO 46 R1	Staff augmentation engineering scope support for ECs	████████
Areva Contract 101659-84 CO 56R1	Analyze the SGTR Dose and Safety Analysis	████████
Areva Contract 101659-84 CO 62 R1	Safety related calculations	████████
Areva Contract 101659-84 CO 60 R2	Support NRC Request for Additional Information	████████
Total		████████

EXHIBIT 13

Source: PEF Response to Staff Data Request 1.22

3.4.2 TESTING OF CONTRACT MANAGEMENT TO PROCEDURES

In addition to verifying the Integrated Change Forms for each contract amendment and new contract, audit staff performed a sample review of the contract payment process to confirm compliance with company procedures. Audit staff requested invoices from a sample of current contracts to assess compliance with contract management policies and procedures. For each invoice, audit staff verified the Integrated Change Form in relation to the contract terms, the vendor invoice, and corresponding company payment.

Audit staff requested a listing of invoice payments from all vendor invoices paid in 2011 greater than \$50,000. From this population, audit collected a sample of invoices that included invoices for engineering scope and other expenditures related to the Phase III scheduled work, such as long-lead equipment manufacturing. After review, audit staff did not observe any variances to the company's policies and procedures for any of the invoices' reviewed.

Item	Location	Amount	Comments
10-10-01	10-10-01	10-10-01	10-10-01
10-10-02	10-10-02	10-10-02	10-10-02
10-10-03	10-10-03	10-10-03	10-10-03
10-10-04	10-10-04	10-10-04	10-10-04
10-10-05	10-10-05	10-10-05	10-10-05
10-10-06	10-10-06	10-10-06	10-10-06
10-10-07	10-10-07	10-10-07	10-10-07
10-10-08	10-10-08	10-10-08	10-10-08
10-10-09	10-10-09	10-10-09	10-10-09
10-10-10	10-10-10	10-10-10	10-10-10
10-10-11	10-10-11	10-10-11	10-10-11
10-10-12	10-10-12	10-10-12	10-10-12
10-10-13	10-10-13	10-10-13	10-10-13
10-10-14	10-10-14	10-10-14	10-10-14
10-10-15	10-10-15	10-10-15	10-10-15
10-10-16	10-10-16	10-10-16	10-10-16
10-10-17	10-10-17	10-10-17	10-10-17
10-10-18	10-10-18	10-10-18	10-10-18
10-10-19	10-10-19	10-10-19	10-10-19
10-10-20	10-10-20	10-10-20	10-10-20
10-10-21	10-10-21	10-10-21	10-10-21
10-10-22	10-10-22	10-10-22	10-10-22
10-10-23	10-10-23	10-10-23	10-10-23
10-10-24	10-10-24	10-10-24	10-10-24
10-10-25	10-10-25	10-10-25	10-10-25
10-10-26	10-10-26	10-10-26	10-10-26
10-10-27	10-10-27	10-10-27	10-10-27
10-10-28	10-10-28	10-10-28	10-10-28
10-10-29	10-10-29	10-10-29	10-10-29
10-10-30	10-10-30	10-10-30	10-10-30
10-10-31	10-10-31	10-10-31	10-10-31
10-10-32	10-10-32	10-10-32	10-10-32
10-10-33	10-10-33	10-10-33	10-10-33
10-10-34	10-10-34	10-10-34	10-10-34
10-10-35	10-10-35	10-10-35	10-10-35
10-10-36	10-10-36	10-10-36	10-10-36
10-10-37	10-10-37	10-10-37	10-10-37
10-10-38	10-10-38	10-10-38	10-10-38
10-10-39	10-10-39	10-10-39	10-10-39
10-10-40	10-10-40	10-10-40	10-10-40
10-10-41	10-10-41	10-10-41	10-10-41
10-10-42	10-10-42	10-10-42	10-10-42
10-10-43	10-10-43	10-10-43	10-10-43
10-10-44	10-10-44	10-10-44	10-10-44
10-10-45	10-10-45	10-10-45	10-10-45
10-10-46	10-10-46	10-10-46	10-10-46
10-10-47	10-10-47	10-10-47	10-10-47
10-10-48	10-10-48	10-10-48	10-10-48
10-10-49	10-10-49	10-10-49	10-10-49
10-10-50	10-10-50	10-10-50	10-10-50
10-10-51	10-10-51	10-10-51	10-10-51
10-10-52	10-10-52	10-10-52	10-10-52
10-10-53	10-10-53	10-10-53	10-10-53
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10-10-59	10-10-59	10-10-59	10-10-59
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10-10-61	10-10-61	10-10-61	10-10-61
10-10-62	10-10-62	10-10-62	10-10-62
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10-10-66	10-10-66	10-10-66	10-10-66
10-10-67	10-10-67	10-10-67	10-10-67
10-10-68	10-10-68	10-10-68	10-10-68
10-10-69	10-10-69	10-10-69	10-10-69
10-10-70	10-10-70	10-10-70	10-10-70
10-10-71	10-10-71	10-10-71	10-10-71
10-10-72	10-10-72	10-10-72	10-10-72
10-10-73	10-10-73	10-10-73	10-10-73
10-10-74	10-10-74	10-10-74	10-10-74
10-10-75	10-10-75	10-10-75	10-10-75
10-10-76	10-10-76	10-10-76	10-10-76
10-10-77	10-10-77	10-10-77	10-10-77
10-10-78	10-10-78	10-10-78	10-10-78
10-10-79	10-10-79	10-10-79	10-10-79
10-10-80	10-10-80	10-10-80	10-10-80
10-10-81	10-10-81	10-10-81	10-10-81
10-10-82	10-10-82	10-10-82	10-10-82
10-10-83	10-10-83	10-10-83	10-10-83
10-10-84	10-10-84	10-10-84	10-10-84
10-10-85	10-10-85	10-10-85	10-10-85
10-10-86	10-10-86	10-10-86	10-10-86
10-10-87	10-10-87	10-10-87	10-10-87
10-10-88	10-10-88	10-10-88	10-10-88
10-10-89	10-10-89	10-10-89	10-10-89
10-10-90	10-10-90	10-10-90	10-10-90
10-10-91	10-10-91	10-10-91	10-10-91
10-10-92	10-10-92	10-10-92	10-10-92
10-10-93	10-10-93	10-10-93	10-10-93
10-10-94	10-10-94	10-10-94	10-10-94
10-10-95	10-10-95	10-10-95	10-10-95
10-10-96	10-10-96	10-10-96	10-10-96
10-10-97	10-10-97	10-10-97	10-10-97
10-10-98	10-10-98	10-10-98	10-10-98
10-10-99	10-10-99	10-10-99	10-10-99
10-10-100	10-10-100	10-10-100	10-10-100

EXHIBIT 13-1
 Source: RFP Responses to SOW, dated 10/10/10

3.4.2 TESTING OF CONTRACT MANAGEMENT TO PROSECUTE

In addition to verifying the Integrated Change Form for each contract amendment and new contract, audit staff performed a sample review of the contract payment process to confirm compliance with company procedures. Audit staff requested invoices from a sample of current contracts to assess compliance with contract amendment policies and procedures. For each invoice, audit staff verified the Integrated Change Form in relation to the contract form, the vendor invoice, and corresponding company payment.

Audit staff requested a listing of invoice payments from all vendor invoices paid in 2011 greater than \$50,000. From this population, audit collected a sample of invoices that included invoices for engineering scope and other expenses related to the Phase III scheduled work, such as long-term equipment manufacturing. After review, audit staff did not observe any variances to the company's policies and procedures for any of the invoices reviewed.

4.0 CONCLUSIONS

4.1 LEVY NUCLEAR PROJECT

4.1.1 PROJECT EVENTS AND DEVELOPMENTS

In April 2012, the PEF's Levy Nuclear Project (LNP) management team announced a shift in the in-service dates for Units 1 and 2. The expected in-service date for Unit 1 has shifted from 2021 (estimated in 2010 and 2011) to 2024, while the in-service date for Unit 2 has shifted from 2022 (also estimated in 2010 and 2011) to 2025. The project management team attributes the shift to the current uncertainty with respect to federal and state energy and environmental policies and increased enterprise risks.

Federal and state energy and environmental policies include obtaining federal support for nuclear development and, in Florida, the uncertainty surrounding repeated legislative attempts to repeal or overturn the cost recovery statute. Enterprise risks include current unfavorable economic conditions in Florida, low growth in energy consumption and sales, depressed natural gas prices, and risks associated with the events at the Fukushima plants in Japan. As a result of the shift in the commercial operation dates, the estimated project costs have increased 6.8 percent from \$17.64 billion in 2011 to \$18.85 billion in 2012.

To mitigate the increased near-term uncertainty and enterprise risks, PEF's project management has also made the decision to currently maintain the suspension of the Engineering, Procurement, and Construction (EPC) Agreement for the LNP. PEF's project management team anticipates [REDACTED]

[REDACTED]. The project management team noted that construction will commence in time to place Levy Unit 1 in service in 2024. According to PEF, the decision to suspend construction provides additional time for economic conditions in Florida to improve and is in the best interests of both the company and consumers.

In 2012, PEF continued to focus its efforts in obtaining the Combined Operating License Application (COLA) approval from the Nuclear Regulatory Commission (NRC). There are three major milestones in obtaining the COLA: (1) The NRC's review and issuance of the Final Environmental Impact Statement; (2) The NRC's review and issuance of the Safety Evaluation Report, and; (3) The formal hearing process with the NRC.

The NRC issued the Final Environmental Impact Statement (FEIS) for the Levy Nuclear Project (LNP) in April, 2012. Issuance of the Final Safety Evaluation Report (FSER) is expected in October 2012, six months later than originally anticipated. PEF attributes the setback to additional requests for information from the NRC to address concerns regarding the events that occurred at the Fukushima plants in Japan as a result of the March 2011 tsunami. Upon issuance of the FSER in October 2012, PEF anticipates the mandatory hearing process with the NRC to start and complete within four months. PEF expects the COLA to be issued in the second quarter of 2013.

In addition to performing work to obtain the COLA, PEF continues to monitor environmental concerns (e.g., wetland mitigation plan and aquifer performance test), perform transmission study-related activities, and participate in industry groups to evaluate the

disposition of the AP1000 design and operation in China and with the Vogtle and V.C. Summer AP1000 projects.

4.2 CRYSTAL RIVER 3 EXTENDED POWER UPRATE PROJECT

The final construction phase of the EPU project has shifted into the current repair outage timeline. The extended outage shifted the original EPU target construction date of Fall 2011 to 2012, and then to Spring 2013. This schedule was based on the remaining work occurring during the next refueling outage. With the current outage anticipated to last until 2014, the company management deemed it reasonable to complete the work in the current outage timeline. This allows for the work to be completed in 2014 and the full uprate available when the unit returns to service. The company's feasibility analysis indicates that this will provide an overall savings to the company and end-users over time.

In 2010, the project team identified additional scope requirements and system modifications that are necessary to complete the project. These new requirements and modifications were identified during the design finalization process. This addition to scope resulted in an estimated increase in project cost of \$138 million (\$124.8 million direct cost). With the 2011 increase, the project cost has escalated from \$461 million in 2008 to the current amount of \$617 million. While the project's cost has increased since inception, the company's current feasibility analysis supports the economic viability of the project.

The project team states as of April 2012, no additional significant changes have been identified and the project costs are still in line with the 2011 estimates. The company continues to finalize and refine its Phase III engineering work, and additional costs may be required as this process continues.

As in previous years, audit staff monitored and evaluated the company project controls in the areas of contract administration, process management and oversight, risk assessment, and organization structure. Audit staff reviewed the company's management reports and negotiated contracts to confirm the company's compliance with its internal procedures. Audit staff confirmed the company continues to monitor and update its project management process and procedures throughout this project. No variances in the company's compliance to its EPU procedures were identified during this review period.

5.0 APPENDICES

5.1 APPENDIX A

Levy Nuclear Project COLA Risk Matrix April 2012

Probability

Very High (90-100%)					
High (66-89%)					
Moderate (34-65%)					
Low (11-33%)	4,5,7				
Very Low (0-10%)	8	9			
	Minimal	Moderate	Significant	Severe	Critical
	<\$2M	<\$5M	<\$10M	<\$15M	>\$15M

Marker	Short Name	Project Risk Exposure
4	Contested hearings could impact schedule	
5		
7	Delay in environmental permit review and issuance	
8	QA Program Implementation	
9	Resolution of LEDPA analysis for USACE could delay licensing proceedings	
	Total Risk Exposure – All Risks [\$M]	

APPENDIX A

Source: PEF Response to Staff Data Request LNP 1.7

5.2 APPENDIX B

Levy Nuclear Project Non COLA Risk Matrix April 2012

Probability						
Very High (90-100%)						
High (66-89%)						
Moderate (34-65%)	5	8			6	
Low (11-33%)	13	17	11,16			
Very Low (0-10%)	12	10				
	Minimal	Moderate	Significant	Severe	Critical	Impact
	<\$20M	<\$50M	<\$100M	<\$150M	>\$150M	

Marker	Short Name	Project Risk Exposure
5	Modified Transmission Scope Uncertainty	
6		
8		
10	Change in Timing and Scope of Crystal River Switchyard work	
11		
12	Recruiting Nuclear Operators	
13	Land Acquisition required to support transmission, pipeline routing and wetland mitigation	
16	RCC Test Pad Resolution	
17	Aquifer Performance Test	
Total Risk Exposure – All Risks [\$M]		

APPENDIX B

Source: PEF Response to Staff Data Request LNP 1.7