

Review of Florida Power & Light Company's Project Management Internal Controls For Turkey Point 6 & 7 Construction

JUNE 2018

BY AUTHORITY OF
The Florida Public Service Commission
Office of Auditing and Performance Analysis

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Internal Controls
for
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1.0 Executive Summary

1.1 Turkey Point 6&7 Project at a Glance

Florida Power & Light Company's (FPL or the company) Turkey Point 6&7 (PTN 6&7) nuclear project remains paused. The pause is expected to last at least through 2021.

The Nuclear Regulatory Commission (NRC) issued a Combined Operating License (COL) to FPL in April 2018, granting permission to build and operate two new AP1000 nuclear reactors. It authorizes FPL to construct and operate the power plants in accordance with established laws and regulations.

With the issuance of the COL, FPL states PTN 6&7 project activities going forward will remain focused on maintaining the license and monitoring construction of the Vogtle Plant. FPL states that it intends to incorporate lessons learned from current nuclear projects into its future planning and construction activities.

1.2 Audit Execution

1.2.1 Purpose and Objective

This review addresses PTN 6&7 internal controls and project management oversight used to manage the project. The primary objective is to provide an independent account of project activities since the last review and to evaluate current internal project controls. Information derived may be used by the FPSC to assess the reasonableness of FPL's actions and future FPL cost-recovery requests.

Commission audit staff published previous reports from 2008 through 2017. Each report reviewed relevant project management internal controls related to FPL nuclear construction projects. Previous reports are available on the Commission website.

1.2.2 Scope

The period of this review is January 2017 to May 2018. During its review, staff examined the adequacy of project management and internal controls. Commission audit staff assessed project internal controls in the following key areas:

- ◆ License acquisition and maintenance
- ◆ Management and organization
- ◆ Cost and schedule
- ◆ Contractor oversight
- ◆ Auditing and quality assurance

Comprehensive controls are essential for successful project management and execution. But even adequate, comprehensive controls are ineffective if not continually emphasized by management, embraced throughout the organization, and subject to regular, ongoing oversight and revision.

Proper internal controls reduce project risk, enhance risk management, and aid reasoned decision making.

Risk must be timely and accurately identified with adequate safeguards employed to control schedule and cost. Prudent decision making results from effective communication, adherence to defined procedures, and vigilant management oversight.

1.2.3 Methodology

Initial planning, research, and data collection occurred from January 2018 through April 2018. Staff interviewed project management in March 2018.

Audit staff conducted additional data collection and analysis through May 2018 and reviewed project internal audits, invoices, and filings in Docket No. 180009-EI. During this review, staff analyzed project information, including:

- ◆ Policy and procedure changes
- ◆ Organization
- ◆ Contract change orders
- ◆ Vendor invoices
- ◆ Internal audit reports

1.3 Commission Audit Staff Observations

Based on its analysis, Commission audit staff developed the following observations for the Turkey Point 6&7 project:

- ◆ Project internal controls, risk evaluation, and management oversight are adequate and responsive to current project requirements.
- ◆ Invoicing policies and procedures are adequate, universally understood, and followed.
- ◆ Contracts and contract change orders (CO) adhere to FPL procedures and include all required justifications.
- ◆ The process by which FPL reached its decision to continue the delay in pre-construction activities is reasonable.

2.0 Turkey Point 6&7 Project

2.1 Key Project Developments

2.1.1 License Application Status and Schedule Pause

The NRC held a mandatory hearing on December 12, 2017 to resolve all remaining questions. On April 12, 2018, the NRC issued the Combined Operating Licenses for FPL's Turkey Point 6&7 units. With the receipt of the COL, the company plans to move the project into a pause period.

During this pause period, FPL's staff will engage in activities to maintain the license. These activities include instituting a QA plan, submitting required annual reports to the NRC, and taking actions required to support all permits and approvals received to date. FPL will also maintain configuration control of the license during this period. This entails preparing the license to be put in FPL's electronic vault and maintaining all policies and procedures. FPL states that this will allow the company to keep the data integrity of the license enabling them to incorporate any license amendments in the future.

As part of the project shift to the pause period, FPL is also shifting its organization to meet the needs of the project during this time. FPL has 18 employees assigned to the maintenance of the license in configuration control. However, these employees are not dedicated full-time to Turkey Point 6&7 activities.

FPL plans to observe and understand the challenges of the first wave of AP1000 projects currently underway. The company is collecting information on construction, supply chain, and logistics. These lessons learned will assist FPL in projecting project cost and schedule as well as the appropriate timeframe necessary to proceed to preconstruction. To incorporate the first wave results, FPL must wait until the completion of the Vogtle plant, and observe information regarding the canceled Summer plant. FPL states that it is monitoring these projects by gathering publically available information as it becomes accessible and through the AP1000 Owners Group. This information is informally shared with upper management as it becomes available.

2.1.2 Turkey Point 6&7 Project Cost Estimate

The Turkey Point 6&7 project cost estimate range is unchanged from a year ago, currently in a range from \$14.96 billion (low) to \$21.87 billion (high). FPL states that consistent with placing the project on hold and observing other plants' costs, the company has not updated its projected cost estimates. The company states that it does not expect to update the total estimated in-service cost projections until the company seeks Commission approval to move forward with the project. **Exhibit 1** shows the year-to-year low and high cost estimates since project inception in 2007.

**Florida Power & Light Company
Turkey Point 6&7 Cost Estimate
2007 –2018 (\$Billions)**

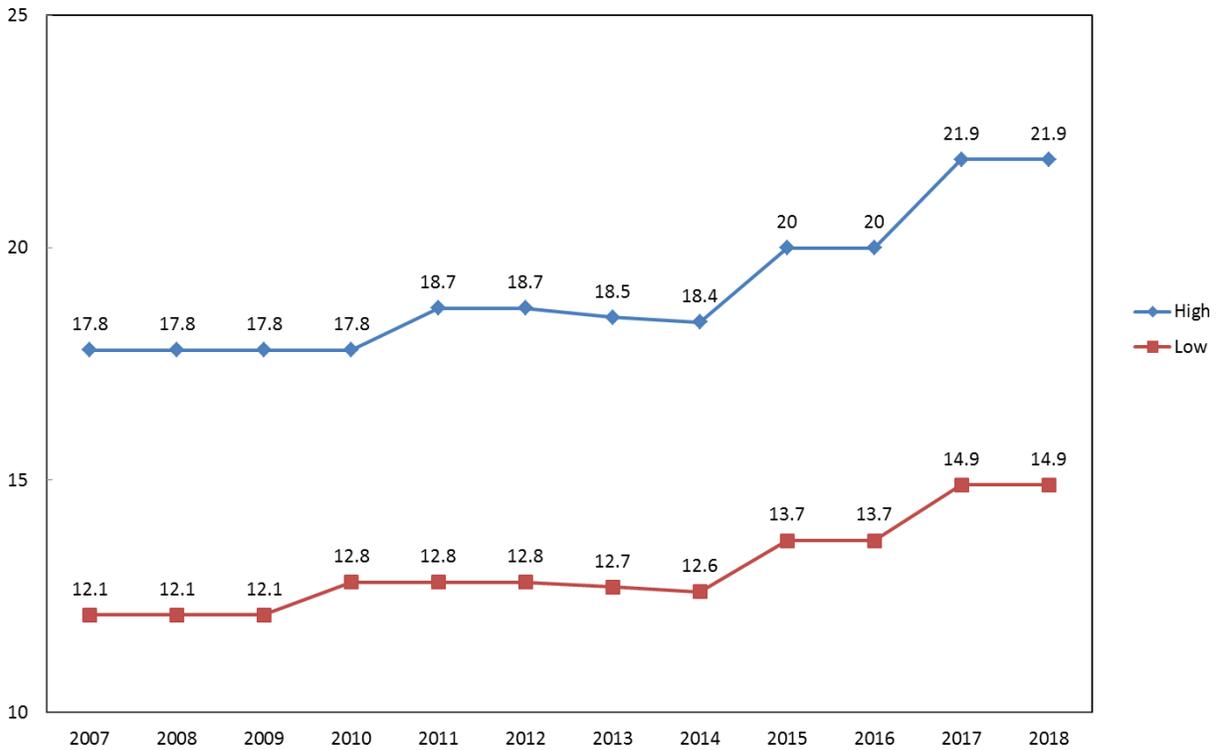


EXHIBIT 1

Source: FPL Response to Document Request 1-2

Project estimated cost remains unchanged from a year ago. **Exhibit 2** shows a breakdown of the current project cost estimate.

**Florida Power & Light Company
Turkey Point 6&7 In-Service Cost Estimate
2017 and 2018 (\$)**

Category	2018 Low	Change from 2017	2018 High	Change from 2017
Site Selection	6,118,105	0	6,118,105	0
Pre-construction	346,806,203	0	382,638,812	0
Construction	11,155,665,197	0	16,406,703,271	0
AFUDC	3,453,640,899	0	5,079,290,267	0
Total	14,962,230,404	0	21,874,750,455	0

EXHIBIT 2

Source: FPL Response to Document Request 1-29

FPL states that it reviews project qualitative factors annually. However, Order No. PSC-2017-0445-FOF-EI states if FPL intends to seek Commission review and approval of costs incurred in the future for NCR clause recovery, then an updated economic feasibility analysis is required.

2.1.3 Toshiba/Westinghouse Bankruptcy

Westinghouse Electric Company LLC (WEC), the nuclear service arm of Toshiba Corporation, filed for bankruptcy in March 2017. In January 2018, Toshiba finalized agreements with creditors for the sale of WEC to resolve the bankruptcy.

FPL project management states that it has monitored the bankruptcy and dissolution events and expects WEC, or its successor, to continue its role in the design of the AP1000. FPL does not believe that these events will negatively impact the project. The company anticipates that WEC or its successor to be available to support COL maintenance efforts during the PTN 6&7 project pause.

PTN 6&7 project management considers WEC to be a potential candidate for engineering and procurement roles associated with constructing PTN 6&7. However, under the current circumstances, project management no longer believes WEC will pursue the role of constructor and now does not consider a combined engineering, procurement, and construction contract as a viable option for eventual construction.

FPL's 2008 Forging Reservation agreement with Westinghouse, extended multiple times since inception, currently reserves manufacturing capacity for some plant components. The most recent extension runs through June 2018. There are no current negotiations to extend the contract. If the agreement is dissolved, FPL may forfeit some or all of its original \$10.8 million deposit.

2.1.4 State Site Certification, Transmission, and Land Exchange

On April 20, 2016, the Third District Court of Appeals (3rd DCA) issued an order identifying three deficiencies with the Site Certification Final Order for Turkey Point 6&7. The court opined that the Siting Board failed to consider applicable land development regulations, incorrectly believed it did not have authority to compel FPL to install new transmission lines underground, and that local environmental regulations were zoning issues. Subsequently, FPL began pursuing negotiations of settlements with the stakeholders to be presented to the Siting Board for reexamination. In October 2017, the City of Miami agreed to withdraw from the State Site Certification administrative proceeding and related litigation, and further released and relinquished all claims the City had against FPL in the proceeding/litigation. The company states that it is working with stakeholders on resolving the remaining deficiencies.

In March 2018, the Governor signed a bill clarifying the application of local land use and developmental laws in a siting proceeding and the authority of the siting board to order a transmission line to be installed underground. This law further clarifies the applicability of zoning regulations to transmission.

FPL has been working to determine the viability of the West Consensus Corridor and completing alignment and parcel negotiations with parties. Some of the remaining activities include

relocating encumbrances for some of the Department of the Interior parcels, exchanging land parcels, and pursuing negotiations for land rights associated with private parcels.

2.1.5 Other Federal Applications, Approvals, or Certifications

FPL submitted two federal applications for extensions to the FAA Aeronautical Studies and FAA approvals of the Turkey Point 6&7 containment buildings. No other federal approvals or certifications were required. The following licenses or permits were completed or are anticipated in 2017 and 2018:

- ◆ NRC Combined Operating License (COL) – Issued April 2018
- ◆ U.S. Army Corps of Engineers 404b and Section 10 permit – Estimated to be issued later in 2018 after COL issuance.
- ◆ U.S. Army Corps of Engineers Section 408 – Estimated to be submitted in spring of 2018 and issued later in 2018

2.1.6 Project-Joint Ownership

FPL held an annual meeting on June 23, 2017 with utility representatives from Seminole Electric, City of Homestead, Lakeland Electric, JEA, FMPA, OUC, City of Vero Beach, and City of Ocala to present an annual update on Turkey Point 6&7. No other formal discussions were held. A date for a 2018 meeting has not been set.

2.2 Project Controls and Oversight

2.2.1 Project Controls

Project controls are a dynamic part of managing PTN 6&7 activities. FPL states they are regularly reviewed and embedded in project procedures, accounting systems, and desktop instructions. PTN 6&7 project controls and process instructions help direct the following operations:

- ◆ Management
- ◆ New nuclear project planning and implementation
- ◆ COL maintenance
- ◆ Document control
- ◆ Records management
- ◆ Budget
- ◆ Regulatory reporting
- ◆ Incident response
- ◆ Design changes
- ◆ Internal and external oversight

The Project Controls section provides project management with scheduling, budget/cost, vendor performance, and risk reports. Primavera-6 remains the principal project scheduling software, capable of real-time monitoring and updates, tailored data sorting, and customized status reports.

FPL reviewed all project instructions in 2017, revising several, deleting those no longer necessary, and creating new ones in anticipation of efforts required to maintain the COL. There are no project instructions currently under review.

Project instructions revised in 2017 included:

- ◆ *NNP-PI-301, Review of WEC Design Change Proposals*
- ◆ *NNP-PI-302, Pre-Col Departure Process*
- ◆ *NNP-PI-303, Preparation of Interim Staff Guidance – 011 Screens/Evaluations*
- ◆ *NNP-PI-410, NNP Training*

Instructions deleted in 2017, or scheduled for deletion in 2018 included:

- ◆ *NNP-PI-01, Request For Information (RFI) And RFI Response*
- ◆ *NNP-PI-03, Project Document Retention and Records Processing*
- ◆ *NNP-PI-04, Cola Configuration Control and Responses to Request for Additional Information for Project Applications*
- ◆ *NNP-PI-05, NNP Project Correspondence*
- ◆ *NNP-PI-06, NNP NRC Correspondence*
- ◆ *NNP-PI-08, COLA Review and Acceptance Process*
- ◆ *NNP-PI-10, NNP PTN COLA Related Project Management Briefs, Project Memoranda, and Cola Related Document Reviews*
- ◆ *NNP-PI-12, Hosting Visiting Dignitaries at the FPL Juno Campus and Preconstruction Tours of the PTN 6 & 7 Site*
- ◆ *NNP-PI-13, Technical Review of Commercial Project Documents*
- ◆ *NNP-PI-14, Discovery Production Instructions Related to Turkey Point 6 & 7 Combined License Hearing*
- ◆ *NNP-PI-15, Site Work Activities - Incident Response Instructions*

- ◆ *NNP-PI-02, Preparation, Revision, Review and Approval of New Nuclear Projects Project/Desktop Instructions*

Project instructions created in 2017 and to date in 2018 included:

- ◆ *NNP-PI-210, License Basis Document Control*
- ◆ *NNP-PI-211, Technical Specification (TS) Bases Control Program*
- ◆ *NNP-PI-212, Technical Requirements Manual Changes*
- ◆ *NNP-PI-220, Applicability Determination and 10 CFR50.59/Departure Screening*
- ◆ *NNP-PI-221, 10 CFR 50.59/Departures Evaluation*
- ◆ *NNP-PI-223, License Amendment Request*
- ◆ *NNP-PI-225, NRC Correspondence*
- ◆ *NNP-PI-304, COLA Configuration Control and Responses to Request for Additional Information for Project Applications*
- ◆ *NNP-PI-305, COLA Review and Acceptance Process*
- ◆ *NNP-PI-310, COL Maintenance - Configuration Control Process*

- ◆ *NNP-PI-400, Conduct of New Nuclear Projects*
- ◆ *NNP-PI-401, Records Management*
- ◆ *NNP-PI-403, NNP Project Correspondence*
- ◆ *NNP-PI-404, Hosting Visiting Dignitaries at the FPL Juno Campus & Preconstruction Tours of the PTN 6 & 7 Site*
- ◆ *NNP-PI-406, Site Work Activities Incident Response Instructions*
- ◆ *NNP-PI-407, PTN Unit 6&7 Related Project Management Briefs, Project Memoranda, and Cola Related Document Reviews*
- ◆ *NNP-PI-610, Turkey Point Site Interface*
- ◆ *NNP-PI-611, NNP Standard Commitments/Licensing Attributes Data Control and NRC Commitments*
- ◆ *NNP-PI-613, Request For Information (RFI) and RFI Response*
- ◆ *NNP-PI-614, Discovery Production Instructions Related to Turkey Point 6 & 7 Combined License Hearing*
- ◆ *NNP-DI-200, Exemption Requests*
- ◆ *NNP-DI-210, Regulatory Reporting*
- ◆ *NNP-DI-225, NRC Correspondence Processing Desktop Instruction*
- ◆ *NNP-DI-402, Preparation, Revision, Review and Approval of New Nuclear Projects Project/Desktop Instructions*

FPL states that revisions to existing instructions and addition of those newly approved were needed due to the changes in project activity to a license maintenance phase during the pause period.

PTN 6&7 project leadership has the ongoing option of presenting information to and obtaining advice from the FPL Risk Committee. No presentations were made to the Committee from January 2017 thru April 2018 due to the project's paused status.

Commission audit staff believes current FPL risk controls are adequate and responsive to the state of the project. Weekly updates, monthly dashboards and cost variance reports, and quarterly assessments inform all levels of FPL management. Commission audit staff observes that if the project transitions from the pause to construction, associated project scope will expand many times over, making a comprehensive project risk reassessment critical to success. Restructuring of risk management will likely be required.

2.2.2 Risk Management Reporting

A monthly risk assessment is completed and presented to PTN 6&7 project management in a dashboard format focused on prior month, current month, and the trend between them. Color coding and a short narrative indicate the status of these subject areas:

- ◆ NRC Licensing
- ◆ US Army Corps of Engineers permitting
- ◆ Site Certification
- ◆ Underground injection
- ◆ Miami-Dade county issues

- ◆ Development
- ◆ Project design
- ◆ Pre-construction planning
- ◆ Budget
- ◆ Schedule
- ◆ Procurement
- ◆ Safety

An information review and discussion of project risk is a regular component of weekly status meetings attended by FPL project staff and contractor representatives. FPL stated that because there have been no material changes in project schedule, cost, or from the current pause, no additional project risk assessments or reviews are warranted at this point in the project.

2.2.3 Management Oversight

Minor changes to the PTN 6&7 project management organization occurred in the last year. One FPL project engineering team member retired; the position remains open. In addition, FPL anticipates contractor staffing will be reassigned off the PTN 6&7 project after receiving the COL.

2.2.4 Audits

In early 2018, the FPL Internal Audit Department conducted its annual audit of PTN 6&7 project expenditures. Audited areas included employee reimbursed expenses, third-party invoices, payroll, and reconciliation actions. The audit report noted no major exceptions.

2.3 Contract Oversight and Management

Project contract management and oversight processes remain unchanged, employing project management, technical representatives, and QA personnel to monitor vendor performance. Vendors are required to provide regular progress reports.

FPL's policies and procedures direct the monitoring of change orders and invoices for errors. Invoicing specialists review invoices for accuracy and compliance with provisions of the contract and current labor rates. Billed hours are checked against job categories. Travel expense requests are vetted for project applicability, linkage to an existing contract, and proper authorization.

Sourcing specialists and contract managers monitor contract change orders and invoices for errors. Anomalies are reported; potential schedule and/or cost impacts are identified and quantified.

Contract oversight is unchanged from 2017. Controls include project policies and instructions, authorization requirements, approval methodologies, and invoicing procedures. FPL made no revisions or changes to contractor selection or contractor management policies and procedures during 2017 through May 2018.

Commission audit staff believes that the FPL invoicing and contracting policies and procedures are adhered to. Required authorizations examined were present and complied with procedures. Vendor invoices and supporting documentation are vetted by FPL project sourcing personnel.

There were no new contracts valued at \$100,000 or more from January 2017 through May 2018. **Exhibit 3** shows the seven current contracts valued at \$250,000 or more. This number has increased from the prior year.

Florida Power & Light Company Turkey Point 6&7 Existing Contracts Greater than \$250,000 2017 – YTD 2018		
Vendor	Description	Type*
AMEC Environment & Infrastructure	RFI response review / FSAR 2.5.4	S
Bechtel Power Corporation	COLA / SCA prep & RAI support	C, S, P
EPRI - Electric Power Research Institute	Nuclear technology; membership	S
Paul C. Rizzo Associates, Inc.	Field Investigation; FSAR 2.5 Revision	S
Power Engineers, Inc.	Prelim Analysis of Miami River crossing and Davis/Miami Line	S
Westinghouse Electric Co.	COLA prep & RAI support	C, S, P
McNabb Hydrogeologic Consulting, Inc.	NRC Support Activities	S
* C = Competitive Bid S = Single/Sole Source P = Predetermined Source		

EXHIBIT 3

Source: FPL Response to Document Request 1-21

Contract change orders add or delete scope, increase or decrease contract value, or represent an administrative adjustment. During 2017 to 2018 YTD, FPL executed one contract change order valued at \$50,000 or more.