

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**DOCKET NO. 140009-EI
FLORIDA POWER & LIGHT COMPANY**

MARCH 3, 2014

**IN RE: NUCLEAR POWER PLANT COST RECOVERY
FOR THE YEAR ENDING
DECEMBER 2013**

TESTIMONY & EXHIBITS OF:

JOHN J. REED

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**
2 **FLORIDA POWER & LIGHT COMPANY**
3 **DIRECT TESTIMONY OF JOHN J. REED**
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5 **March 3, 2014**

6
7 **Section I: Introduction**

8 **Q. Please state your name and business address.**

9 A. My name is John J. Reed. My business address is 293 Boston Post Road West,
10 Marlborough, Massachusetts 01752.

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

12 A. I am the Chairman and Chief Executive Officer of Concentric Energy Advisors,
13 Inc. (“Concentric”).

14 **Q. Please describe Concentric.**

15 A. Concentric is an economic advisory and management consulting firm,
16 headquartered in Marlborough, Massachusetts, which provides consulting
17 services related to energy industry transactions, energy market analysis, litigation,
18 and regulatory support.

19 **Q. Please describe your educational background and professional experience.**

20 A. I have more than 37 years of experience in the energy industry, having served as
21 an executive in energy consulting firms, including the position of Co-Chief
22 Executive Officer of the largest publicly-traded management consulting firm in
23 the United States and as Chief Economist for the largest gas utility in the United
24 States. I have provided expert testimony on a wide variety of economic and

1 financial issues related to the energy and utility industry on numerous occasions
2 before administrative agencies, utility commissions, courts, arbitration panels and
3 elected bodies across North America. I also have provided testimony on behalf
4 of FPL in its NCRC proceedings for the last six years. A summary of my
5 educational background can be found on Exhibit JJR-1.

6 **Q. Are you sponsoring any exhibits in this case?**

7 A. Yes. I am sponsoring Exhibits JJR-1 through JJR-4, which are attached to my
8 direct testimony.

9	Exhibit JJR-1	Résumé of John J. Reed
10	Exhibit JJR-2	Expert Testimony of John J. Reed
11	Exhibit JJR-3	Index of the EPU Project's Periodic Meetings
12	Exhibit JJR-4	PTN 6 & 7 Project Organization Charts

13 **Q. What is the purpose of your testimony in this proceeding?**

14 A. The purpose of my testimony is to review the benefits of nuclear power and the
15 appropriate prudence standard to be applied to Florida Power & Light's ("FPL"
16 or the "Company") decision-making processes in this Nuclear Cost Recovery
17 Clause ("NCRC") proceeding before the Florida Public Service Commission (the
18 "FPSC" or the "Commission"). In addition, I provide a review of the system of
19 internal controls used by the Company in 2013 during construction phases of the
20 Extended Power Uprate ("EPU") project at the Turkey Point ("PTN") and St.
21 Lucie ("PSL") generating stations (together, the "EPU Project"), and in creating
22 the opportunity to construct two new nuclear generating units ("PTN 6 & 7" or
23 the "New Nuclear Project") at FPL's existing PTN site. Finally, I provide an

1 opinion on whether the EPU and PTN 6 & 7 expenditures for which FPL is
2 seeking recovery in this proceeding have been prudently incurred.

3 **Q. Please describe your experience with nuclear power plants, and**
4 **specifically your experience with major construction programs at these**
5 **plants.**

6 A. My consulting experience with nuclear power plants spans more than 30 years.
7 My clients have retained me for assignments relating to the construction of
8 nuclear plants, the purchase, sale and valuation of nuclear plants, power uprates
9 and major capital improvement projects at nuclear plants, and the
10 decommissioning of nuclear plants. In addition to my work at FPL's plants, I
11 have had significant experience with those activities at the following plants:

- | | | |
|----|-------------------|------------------|
| 12 | • Big Rock Point | • Oyster Creek |
| 13 | • Callaway | • Palisades |
| 14 | • Darlington | • Peach Bottom |
| 15 | • Duane Arnold | • Pilgrim |
| 16 | • Fermi | • Point Beach |
| 17 | • Ginna | • Prairie Island |
| 18 | • Hope Creek | • Salem |
| 19 | • Indian Point | • Seabrook |
| 20 | • Limerick | • Vermont Yankee |
| 21 | • Millstone | • Wolf Creek |
| 22 | • Monticello | • Vogtle |
| 23 | • Nine Mile Point | |

24 I recently have been active on behalf of a number of clients in pre-
25 construction activities for new nuclear plants across the United States and in
26 Canada. Preconstruction activities I have supported include state and federal
27 regulatory processes, raising debt and equity financing for new projects, and
28 evaluating the costs, schedules and economics of new nuclear facilities. In
29 addition, I have provided nuclear industry clients with detailed reviews of

1 contracting strategies, cost estimation practices, and construction project
2 management.

3 **Q. Please summarize your testimony.**

4 A. The remainder of my testimony covers six main topic areas. Section II contains
5 an introduction to the projects and a brief discussion of the benefits of nuclear
6 power to Florida. Section III describes the appropriate prudence standard that
7 should be applied in this case, and discusses precedent with respect to the
8 prudence standard in Florida. In Section IV, I discuss the internal controls,
9 processes, and procedures that were the focus of Concentric's review. In Section
10 V, I discuss Concentric's assessment of the EPU Project, which added
11 approximately 522 megawatts electric ("MWe") of capacity for FPL's customers
12 across the existing PSL and PTN units, and which drew to a close at the end of
13 2013. In Section VI, I present Concentric's review of the New Nuclear Project.
14 My conclusions are provided in Section VII. Each of those topics is summarized
15 below.

16 FPL's four existing nuclear reactors in Florida have provided, and
17 continue to provide, substantial benefits to Florida customers. Those benefits
18 include virtually no air emissions, increased fuel diversity, reduced exposure to
19 fuel price volatility, fuel cost savings, highly reliable base load capacity, and
20 efficient land use. Additional nuclear capacity that has been enabled through the
21 EPU Project and that is being developed in the PTN 6 & 7 Project provides
22 more of those same benefits to Florida.

23 The rule that governs the Commission's review of FPL's nuclear projects
24 calls for an annual prudence determination. The prudence standard encapsulates

1 three main elements. First, prudence relates to the reasonableness of decisions
2 and actions, not costs incurred by a utility. Second, the prudence standard
3 includes a presumption of prudence with regard to the utility's actions. Absent
4 evidence to the contrary, a utility is assumed to have acted prudently. Third, the
5 prudence standard excludes the use of hindsight. Thus, the prudence of a
6 utility's actions must be evaluated on the basis of information that was known or
7 could have been known at the time the decision was made.

8 Finally, Concentric has reviewed the processes and procedures that were
9 used to manage and implement the EPU and PTN 6 & 7 projects in 2013. That
10 review has focused on the Company's internal controls that are in place to
11 provide assurance that the Company meets its strategic, financial, and regulatory
12 objectives related to the projects. Our review is premised on a framework
13 developed by Concentric when advising potential investors in new nuclear
14 development projects and our recent regulatory experience.

15 **Q. What are your conclusions with regard to the costs at issue in this**
16 **proceeding?**

17 A. Concentric has concluded that all of the 2013 costs for which FPL is seeking
18 recovery have been prudently incurred.

19

20 **Section II: Introduction to the Projects and Benefits of Nuclear Power to Florida**

21 **Q. Please provide a brief introduction to FPL's EPU Project.**

22 A. FPL recently completed the EPU Project at PSL and PTN. The EPU Project
23 modified and upgraded specific components at all four operating units at PSL
24 and PTN in order to increase the maximum power level at which the two

1 stations can operate. In total, the EPU Project increased the nuclear generating
2 capacity of PSL and PTN by 522 MWe for FPL's customers, which is 123 MWe
3 greater than the original plan of 399 MWe for the EPU Project.

4 **Q. Please generally describe PTN 6 & 7.**

5 A. The PTN 6 & 7 Project remains focused on obtaining the licenses and permits
6 that will provide FPL and its customers the option to construct two nuclear units
7 at the existing PTN site. Specifically, through PTN 6 & 7, FPL continues to
8 create the opportunity to construct approximately 2,200 MWe of new nuclear
9 capacity. The Company's project management strategy remains focused on
10 preserving flexibility and maintaining periodic hold points and off-ramps during
11 which PTN 6 & 7's progress can be delayed for further analysis or progressed to
12 more advanced stages of development. At each major hold point a decision on
13 whether to move forward with development will be made based on the project's
14 ability to achieve a balance of high value to customers and decreased exposure to
15 risk. Once the project has obtained all relevant permits and its Construction and
16 Operating License ("COL") from the Nuclear Regulatory Commission ("NRC"),
17 the option to construct will last for a period of at least 20 years.

18 **Q. Has nuclear power benefited FPL customers?**

19 A. Yes it has. Nuclear power continues to play a crucial role in FPL's power
20 generating fleet. The four reactors at FPL's existing PSL and PTN sites have
21 been in operation for an average of over 37 years. Throughout almost four
22 decades, these units have provided numerous and substantial benefits to Florida
23 customers by reliably producing carbon-free energy, enhancing fuel diversity and
24 insulating customers from commodity price spikes.

1 **Q. Is it prudent to continue the development of additional nuclear capacity in**
2 **Florida?**

3 A. Yes. It is prudent to continue the development of additional nuclear capacity in
4 Florida to the degree that the capacity can be developed on an economic basis
5 over its full life-cycle.

6 **Q. What are the advantages of using nuclear power as a base load energy**
7 **source?**

8 A. One of the greatest advantages to additional nuclear power is that it has virtually
9 no carbon dioxide emissions. Unlike alternative, carbon-intensive base load
10 sources in Florida, nuclear energy does not burn fossil fuels and, therefore, emits
11 no greenhouse gases (“GHG”). Based on FPL’s 2012 generation data and the
12 Environmental Protection Agency’s (“EPA”) eGrid tool, the four nuclear units
13 FPL operates in Florida currently avoid between seven and eight million tons of
14 CO₂ emissions per year compared to an average natural gas-fired, combined cycle
15 generating station.¹ The magnitude of avoided emissions is even greater when
16 compared to other carbon-based fuels (*e.g.*, oil, coal) assuming each fuel is used
17 to produce the same amount of energy.

18 In addition to its environmental benefits, nuclear power provides a vital
19 source of diversification to the electric generation mix. In recent years, Florida
20 has become increasingly dependent on natural gas as a fuel source for electric
21 generating facilities. According to the Florida Reliability Coordinating Council’s
22 2013 Load and Resource Plan, natural gas generated more net energy for load in
23 2012 than all other fuels combined in Florida. By 2022, natural gas generation
24 could approach 58.8%.² In order to mitigate the incremental dependence on

1 natural gas, utilities in the state should continue to develop alternatively-fueled
2 facilities. This will help limit the state's exposure to natural gas price spikes and
3 potential supply disruptions.

4 **Q. How does the current price of natural gas compare with recent trends in**
5 **natural gas prices?**

6 A. Although the price of natural gas is currently on the low end of what we have
7 observed in recent years, it is naturally subject to price changes. From 2002-2008
8 spot natural gas prices at Henry Hub rose from approximately \$2.50 to over
9 \$14.00 per million British Thermal Units ("MMBtu")³ before falling to current
10 levels in response to new supply discoveries and advances in technologies used
11 to recover gas from shale formations. The price of natural gas at the Henry Hub,
12 a common trading location, fell to approximately \$2 per MMBtu in July 2012 but
13 has since increased to approximately \$4 per MMBtu. While even the current
14 wholesale price of natural gas remains below historical levels, it is important to
15 consider the long-term outlook when evaluating the benefits of resource diversity
16 over the anticipated 60-year life-span of a nuclear facility.

17 **Q. What factors could affect the market for natural gas?**

18 A. There are a number of factors that could have a significant impact on the market
19 for natural gas, including the export of natural gas in the form of liquefied
20 natural gas ("LNG"). There are a number of LNG export facilities at various
21 stages of permitting and development in North America. These export terminals
22 are being developed to serve the considerable demand for natural gas from
23 markets outside the country. If and when the terminals enter service, the volume
24 of gas flowing through them could significantly affect the domestic market for

1 gas both as a source of home heating and for power generation and industrial
2 use.

3 It is conceivable that incremental demand from export terminals can be
4 met by increases in the development of natural gas resources in the shale
5 formations throughout the United States. However, at this early stage we are
6 already seeing changes in the flow of gas along major interstate pipelines, which
7 could affect the regional market for natural gas. Natural gas to serve Florida
8 currently comes largely from resources in Texas and the Gulf of Mexico, but is
9 expected to come from resources in the Marcellus Shale in the near future as
10 additional infrastructure to bring gas resources to the state come online.

11 **Q. How does resource diversity benefit customers in Florida?**

12 A. Resource diversification provides numerous benefits to Florida residents by
13 mitigating exposure to any single fuel source. This concept, as explained in
14 modern portfolio theory, is based on the idea that a group of diverse assets may
15 collectively lower the risks relative to holding any individual asset or type of
16 asset. Diversification of fuel sources—through added nuclear power and
17 additional renewables—insulates consumers from commodity price fluctuations
18 and reduces the risk profile of Florida’s electric generation mix.

19 Diversification through pursuit of the option to construct new base load
20 alternatives to natural gas is particularly important in the wake of decisions to
21 permanently retire nuclear facilities and to halt development of new nuclear units
22 outside of FPL’s system.

23 **Q. Is it appropriate for the Commission to continue to allow recovery of**
24 **costs, including carrying costs, through the annual NCRC process?**

1 A. Yes. It is appropriate to allow for cost recovery through the annual NCRC
2 process given the magnitude of the potential benefits of additional nuclear
3 capacity. The NCRC is important for both the Company and its customers. It
4 provides FPL's debt and equity investors with some measure of assurance
5 concerning cost recovery if their investments are used to prudently incur costs.
6 In addition, by permitting recovery of carrying costs associated with
7 construction, the NCRC eliminates the effect of compound interest on the total
8 project costs, which will reduce customer bills when the facilities are fully
9 implemented.

10 **Q. Are there benefits of nuclear power other than those that quantitatively**
11 **affect the price of electricity?**

12 A. Yes. One benefit of nuclear generation that is often overlooked is its relatively
13 small footprint compared to other clean, emissions-free technologies. Nuclear
14 power plants require less land, and thus limit the degree of forest clearing,
15 wetlands encroachments, and other environmental impacts associated with siting
16 a generating facility.

17

18 **Section III: The Prudence Standard**

19 **Q. Please generally describe the prudence standard as you understand it.**

20 A. The prudence standard is captured by three key features. First, prudence relates
21 to actions and decisions. Costs themselves are neither prudent nor imprudent.
22 It is the decision or action that must be reviewed and assessed, not simply
23 whether the costs are above or below expectations. The second feature is a
24 presumption of prudence, which is often referred to as a rebuttable presumption.

1 The burden of showing that a decision is outside of the reasonable bounds falls,
2 at least initially, on the party challenging the utility's actions. The final feature is
3 the total exclusion of hindsight. A utility's decisions must be judged based upon
4 what was known or knowable at the time the decision was made by the utility.

5 **Q. What test for prudence has been adopted by the Commission?**

6 A. The Commission has prohibited the use of hindsight when reviewing utility
7 management decisions and has instead chosen to strictly follow the standard I
8 described above. In 2013, the Commission reaffirmed this approach, referring to
9 its "longstanding practice" (Order No. PSC-13-0493-FOF-EI):

10 [T]he standard for determining prudence is consideration of what
11 a reasonable utility manager would have done, in light of the
12 conditions and circumstances which were known, or should have
13 been known, at the time the decision was made.

14 As the Commission notes in the Order in last year's NCRC proceeding, this
15 same standard has been applied consistently since 2007.

16

17 **Section IV: Framework of Internal Controls Review**

18 **Q. What is meant by the term "internal control" and what does it intend to**
19 **achieve?**

20 A. Internal control is a process used by organizations to provide a reasonable
21 assurance of the effectiveness of operations, the reliability of financial reporting,
22 and compliance with applicable laws and regulations. Internal controls inform
23 decision-making by tracking the organization's performance relative to its various
24 objectives. Internal control is a process that responds to the dynamic nature of
25 organizations and projects over time. Finally, internal control can provide only
26 reasonable assurance. Expectations of absolute assurance cannot be achieved.

1 **Q. Please describe the framework Concentric used to review the Company's**
2 **system of internal control as implemented by the EPU Project and PTN 6**
3 **& 7 in 2013.**

4 **A.** As in prior years, Concentric focused on six elements of the Company's internal
5 controls:

- 6 • Defined corporate procedures;
- 7 • Written project execution plans;
- 8 • Involvement of key internal stakeholders;
- 9 • Reporting and oversight requirements;
- 10 • Corrective action mechanisms; and
- 11 • Reliance on a viable technology.

12 Each of these elements was reviewed for the following five processes:

- 13 • Project estimating and budgeting processes;
- 14 • Project schedule development and management processes;
- 15 • Contract management and administration processes;
- 16 • Internal oversight mechanisms; and
- 17 • External oversight mechanisms.

18 Concentric's work in this proceeding is additive to our work reviewing the
19 projects in prior years. In other words, Concentric's review of the EPU Project's
20 and PTN 6 & 7's 2013 activities incorporates the information and understanding
21 of the projects gained during Concentric's reviews of FPL's activities from 2008
22 through 2013.

1 **Q. Please describe how Concentric performed this review.**

2 A. Concentric's review was performed over the period from December 2013 to
3 February 2014. We began by reviewing the Company's policies, procedures and
4 instructions with particular emphasis placed on those policies, procedures or
5 instructions that may have been revised since the time of Concentric's previous
6 review. In addition, Concentric reviewed the current project organizational
7 structures and key project milestones that were achieved in 2013. Concentric
8 then reviewed other documents and conducted in-person interviews of more
9 than 20 FPL personnel to make certain the EPU Project's and PTN 6 & 7's
10 policies, procedures and instructions were known by the project teams, were
11 being implemented by the projects and have resulted in prudent decisions based
12 on the information that was available at the time of each decision.

13 Concentric's interviews included representatives from each of the
14 following functional areas:

- 15 • Project Management;
- 16 • Project Controls;
- 17 • Integrated Supply Chain Management ("ISC");
- 18 • Employee Concerns Program;
- 19 • Quality Assurance/Quality Control ("QA/QC");
- 20 • Internal Audit;
- 21 • Transmission;
- 22 • Environmental Services; and
- 23 • Licensing and Permitting.

1 **Q. Please describe why you believe it is important for FPL to have defined**
2 **corporate procedures in place throughout the development of the projects.**

3 A. Defined corporate procedures are critical to any project development process as
4 they detail the methodology with which the project will be completed and make
5 certain that business processes are consistently applied to the project. To be
6 effective, these procedures should be: (1) documented with sufficient detail to
7 allow project teams to implement the procedures; (2) clear enough to allow
8 project teams to easily comprehend the procedures; and (3) revisited and revised
9 as the project evolves and as lessons are learned. It is also important to assess
10 whether the procedures are known by the project teams and adopted into the
11 Company's culture, including a process that allows employees to openly
12 challenge and seek to improve the existing procedures and to incorporate lessons
13 learned from other projects into the Company's procedures. Within the EPU
14 Project and PTN 6 & 7, the Project Controls staff is primarily responsible for
15 ensuring the Company's corporate procedures are applied consistently by the
16 various FPL and contractor staff members who are working on the projects.
17 However, it is acknowledged that this is a shared responsibility held by all project
18 team members, including the project managers.

19 **Q. Please explain the importance of written project execution plans.**

20 A. Written project execution plans are necessary to prudently develop a project.
21 These plans lay out the resource needs of the project, the scope of the project,
22 key project milestones or activities and the objectives of the project. These
23 documents are critical as they provide a "roadmap" for completing the project as
24 well as a "yardstick" by which overall performance can be monitored and

1 managed. It is also important for the project sponsor to require its large-value
2 contract vendors to provide similar execution plans. Such plans allow the project
3 sponsor to accurately monitor the performance of these vendors and make
4 certain at an early stage of the project that each vendor's approach to achieving
5 key project milestones is consistent with the project sponsor's needs. These
6 project plans must be updated to reflect changes to the project scope and
7 schedule as warranted by project developments.

8 **Q. Why is it important that key internal stakeholders are involved in the**
9 **project development process?**

10 A. One of the most challenging aspects of prudently developing a large project is
11 the ability to balance the needs of all stakeholders, including various Company
12 representatives and the Company's customers. This balance is necessary to make
13 certain that the maximum value of the project is realized. By including these
14 stakeholders in a transparent project development process and by continuing to
15 engage stakeholders throughout the execution of the project, key project
16 sponsors will be better positioned to deliver on high-value projects.

17 **Q. Why is it important to have established reporting and oversight**
18 **requirements?**

19 A. Effective internal and external communications enable an organization to meet
20 its key objectives, and allow employees to effectively discharge their
21 responsibilities. By having an established reporting structure and periodic
22 reporting requirements, the project sponsor's senior management will be well-
23 informed of the status of the project's various activities. Reporting requirements
24 give senior management the information it needs to use its background and

1 previous experience to prudently direct the many facets of the project. In
2 addition, established reporting requirements ensure that senior management is
3 fully aware of the activities of the respective project teams so management can
4 effectively control the overall project risks. In the case of the EPU Project and
5 PTN 6 & 7, this level of project administration by senior management is prudent
6 considering the large expenditures required to complete the projects and the
7 potential impact of the projects on the Company overall.

8 In order to be considered robust, these reporting requirements should be
9 frequent and periodic (*i.e.*, established daily, weekly and monthly reporting
10 requirements) and should include varying levels of detail based on the frequency
11 of the report. The need for timely and effective project reporting is well
12 recognized in the industry. A field guide for construction managers notes:

13 Cost and time control information must be timely with little delay
14 between field work and management review of performance.
15 This timely information gives the project manager a chance to
16 evaluate alternatives and take corrective action while an
17 opportunity still exists to rectify the problem areas.⁴

18 **Q. What is the purpose of corrective action mechanisms and why are they**
19 **important to ensure the Company is prudently incurring costs?**

20 A. A corrective action mechanism is a defined process whereby a learning culture is
21 implemented and nurtured throughout an organization to help eliminate
22 concerns that can interfere with the successful completion of the project.
23 Corrective action mechanisms help identify the root cause of issues, such as an
24 activity that is trending behind schedule, and provide the opportunity to adopt
25 mechanisms that mitigate and correct the negative impact from these issues. A
26 robust corrective action mechanism assigns responsibility for implementing the

1 corrective actions and a means by which these activities are managed. In
2 addition, a corrective action mechanism educates the project team in such a
3 manner as to ensure project risks are prudently managed in the future.

4 **Q. Are there any other elements of the Company's internal controls included**
5 **in your review?**

6 A. No. There were no other elements of the Company's internal controls included
7 in my review.

8

9 **Section V: EPU Project Activities in 2013**

10 **Q. How is this section of your testimony organized?**

11 A. This section describes my review of the five key processes (*i.e.*, project estimating
12 and budgeting, project schedule development and management, contract
13 management and administration, internal oversight mechanisms, and external
14 oversight mechanisms), described above, as they related to the EPU Project in
15 2013.

16 **Q. As a preliminary matter, what did your review lead you to conclude with**
17 **regard to the prudence of FPL's actions in 2013 as they related to the EPU**
18 **Project?**

19 A. FPL's decision making and management actions as they related to the costs for
20 which FPL is seeking recovery for the EPU Project in 2013 were prudent, and it
21 is thus my opinion that FPL's 2013 expenditures on the EPU Project were
22 prudently incurred. The Company's decisions and actions in 2013 included
23 management of the final EPU implementation outage at PTN Unit 4, which
24 included incorporation of lessons learned from earlier outages, and execution of

1 the necessary closeout activities at PSL and PTN to ensure the continued safe
2 and reliable operation of FPL's nuclear facilities. The result of FPL's oversight
3 of the EPU Project in 2013 was that all activities necessary to close out the
4 project were performed, and the EPU Project was completed.⁵

5 **Q. What period of time did your review of the EPU Project encompass?**

6 A. Concentric's review of the EPU Project was for the period January 1, 2013
7 through December 31, 2013. Concentric's review of this time period relied upon
8 data that was provided to Concentric in the period from December 2013 to
9 February 2014.

10 **Q. What were the main phases of the EPU Project, and in which phase was**
11 **FPL in 2013?**

12 A. The EPU Project consisted of four overlapping phases: (1) the Engineering
13 Analysis Phase; (2) the Long Lead Equipment Procurement Phase; (3) the
14 Engineering Design Modification Phase; and (4) the Implementation Phase.
15 Following the implementation of nuclear upgrades, nuclear plant operators must
16 also undertake activities to close out construction projects before those projects
17 can be considered completed and to ensure continued safe operations.

18 The Engineering Analysis, Long Lead Equipment Procurement, and the
19 Engineering Design Modification Phases were completed prior to 2013. In the
20 Implementation Phase, the final EPU implementation outage at PTN Unit 4,
21 which began in 2012, was completed. In addition, FPL performed the closeout
22 activities necessary to complete the EPU Project. The activities undertaken in
23 2013 are further described in the testimony of FPL Witness Jones.

1 **Q. As of the end of 2013, what activities remain in the EPU Project?**

2 A. No activities remain in the EPU Project as of the end of 2013. The majority of
3 closeout activities at PSL and PTN were completed in 2013 while the remaining
4 activities were transferred from the EPU Project organization to the respective
5 plant organizations for completion in 2014.

6 **Q. How was the EPU Project organized in 2013?**

7 A. At the beginning of 2013, there remained in place much of the same EPU
8 organizational structure at PTN as the Company had in 2012 in order to oversee
9 the final implementation outage at that plant. That structure included an EPU
10 Site Director at PTN to oversee construction, project controls, licensing,
11 procurement, and other critical functions, as well as an EPU Implementation
12 Owner at FPL's headquarters in Juno Beach. In addition to the Implementation
13 Owner, there remained a centralized core project management team in Juno
14 Beach providing oversight of the EPU Project from FPL's headquarters, as well
15 as a Quality Assurance ("QA") Manager, whose function necessarily acted
16 separately from the core team to maintain independence when assessing the EPU
17 Project. After the completion of the PTN outage, project staffing began to ramp
18 down according to FPL's staffing plan.

19

20 *Project Estimating and Budgeting Processes*

21 **Q. Please describe the mechanisms utilized to track the project's budgets and**
22 **cost estimate in 2013.**

23 A. Several budget and cost reporting mechanisms continued to be used in 2013 to
24 ensure that key decisions related to the EPU Project were prudent and made at

1 the appropriate level of FPL's management structure. Those reporting
2 mechanisms included presentations and status calls as well as periodic reports
3 that allowed the Company to leverage the experience of its executive team.
4 Those reports included the Monthly Operating Performance Report that
5 categorized the overall performance of the EPU Project as either on budget,
6 budget-challenged, or out of budget. Each site also continued to produce
7 monthly cash flow reports in 2013 that contained monthly actual capital
8 expenditures as compared to the budget, and explanations of any increases or
9 decreases. Those reports were reviewed and discussed during formal project
10 management meetings.

11 As the Implementation Phase of the EPU Project was completed, certain
12 meetings and reports were no longer necessary, and thus were no longer
13 undertaken by FPL, while other meetings and reports were added to track
14 closeout activities to completion. A list of the EPU Project's periodic meetings
15 can be found in Exhibit JJR-3, and a list of the reports used to monitor the EPU
16 Project's cost performance can be found in the testimony of FPL Witness Jones
17 as Exhibit TOJ-14.

18 **Q. In 2013, how did the EPU Project track and identify risks to the project's**
19 **budgets and cost estimate?**

20 A. Through the end of the Implementation Phase, the EPU Project continued to
21 use a risk matrix, referred to as the "Risk Register," to track challenges to the
22 current budgets and cost estimate and to provide a brief explanation of the
23 reasons for the challenges. According to EPPI-340, "EPU Project Risk
24 Management Program," the risk identification process covered identification,

1 assessment and analysis, handling strategy, risk management, categorization,
2 reporting, and mitigation. The Company defined risks as issues that affect
3 nuclear quality, environment, project cost, schedule, safety, security, legal, plant
4 operations, regulatory, and reputation.

5 **Q. What steps did FPL take to control the costs of the EPU Project in 2013?**

6 A. FPL continued to work closely with its vendors to focus them on productivity,
7 safety, and performance. The Company also monitored its EPU Project closeout
8 activities to keep those activities on budget. In addition, in 2012, the Company
9 had sought and obtained concessions from vendors that worked on the EPU
10 Project, including reductions in labor rates and daily living allowances, as well as
11 the elimination of the EPC vendor's (*i.e.*, Bechtel's) incentive fee. Those
12 negotiations resulted in additional concessions by the vendors in 2013. Lastly,
13 FPL incorporated lessons learned both in 2013 and throughout the EPU Project
14 to improve the project as it progressed, and to prevent recurrence of emergent
15 issues. In 2013, that incorporation of lessons learned was evidenced by the
16 reduced cost and schedule that was required to complete the final PTN Unit 4
17 implementation outage as compared to the final PTN Unit 3 implementation
18 outage, following similar results at PSL Units 1 and 2.

19 **Q. Did Concentric review the process by which the EPU Project team made
20 certain that each plant modification or component replacement is
21 necessary for the completion of the EPU Project?**

22 A. Yes, Concentric reviewed the process by which FPL made certain that the costs
23 being charged to the EPU Project in 2013 were separate and apart from the
24 normal maintenance and operations of PSL and PTN, and, therefore eligible for

1 recovery under the NCRC. That process was previously reviewed and approved
2 by the Commission.⁶

3 **Q. Did the EPU Project perform an analysis of its cost effectiveness in 2013?**

4 A. No. While FPL performed a review and update to its cost estimate in 2013 in
5 adherence with FPL procedure EPPI-302, “Nonbinding Cost Estimate Range,”
6 no further feasibility analysis was necessary due to the completion of the project.
7 In terms of the nonbinding costs estimate, FPL updated its cost estimate for
8 direct EPU Project costs from a range of \$2.96 billion to \$3.15 billion to a point
9 estimate of approximately \$3.40 billion, which reflected changes based on the
10 final EPU implementation outages.

11 **Q. What is your conclusion with regard to the EPU Project’s processes used
12 to track cost performance in 2013?**

13 A. My conclusion is that the EPU Project continued to use a robust set of policies
14 and procedures to track and control cost performance, and that those policies
15 and procedures were appropriate for the final year of implementation and
16 closeout.

17

18 *Project Schedule Development and Management Process*

19 **Q. How did the EPU Project team monitor its schedule performance in 2013?**

20 A. In 2013, the EPU Project team continued to utilize daily, weekly, bi-weekly,
21 monthly, and quarterly conference calls and meetings. Presentations and reports
22 were developed to facilitate many of these conference calls and meetings.
23 Exhibit JJR-3 provides a listing of the meetings used in 2013 to monitor the EPU
24 Project’s schedule performance, and a list of the reports used to monitor the

1 EPU Project's schedule performance can be found in the testimony of FPL
2 Witness Jones as Exhibit TOJ-14.

3 **Q. With the EPU Project moving into the closeout stage, what reports did**
4 **FPL use to track closeout activities?**

5 A. FPL developed closeout plans for both sites that provided a roadmap for
6 closeout activities. Those plans described the "end state" that the Company
7 sought to achieve with regard to each site, along with the necessary activities to
8 reach that goal. Importantly, the closeout plans included lessons learned from
9 NextEra's nuclear fleet, along with PTN and PSL's response to those lessons.

10 With the completion of the implementation outages, FPL also continued
11 to use a project closeout dashboard report and closeout metrics package that it
12 created in 2012 to track project closeout activities such as engineering change
13 package closeouts, procedure revisions, training material revisions, and purchase
14 order and contract closeouts. Those reports were reviewed approximately
15 weekly.

16 **Q. Did the EPU Project use any other methods to monitor schedule**
17 **performance in 2013?**

18 A. Yes. FPL continued to use an industry standard software package known as
19 Primavera P6 Professional Project Management to review the project schedule
20 based on approved updates on an almost real-time basis.

21 **Q. What status reports did the EPU Project's key vendors provide to the**
22 **Company?**

23 A. In addition to monitoring the EPU Project team's efforts, the Company also
24 required that status reports be provided by its key vendors in 2013. Specifically,

1 the vendors were responsible for providing daily, weekly, and monthly progress
2 reports regarding their schedule. During the final implementation outage at PTN
3 Unit 4, vendors were required to provide status updates on a daily basis. As
4 vendors demobilized from the project sites after the Implementation Phase, their
5 reporting to FPL was no longer necessary.

6 **Q. How did the EPU Project track and identify risks to the project schedule?**

7 A. In 2013, the EPU Project continued to use the same Risk Register, described
8 earlier, to track challenges to the current schedule and to provide a brief
9 explanation of the reasons for the challenges. Bechtel, the EPC contractor, also
10 provided FPL with a “Trend Log” to track risks to the schedule. The Trend Log
11 was integrated into the Risk Register.

12 **Q. Was the project schedule altered in 2013?**

13 A. No, the overall EPU Project implementation schedule was not altered in 2013.
14 While the final implementation outage at PTN Unit 4 took approximately five
15 days longer than originally planned, that outage was 15 percent shorter in
16 duration than the final PTN Unit 3 outage, and the EPU Project was completed
17 in 2013 as anticipated.

18 **Q. Please describe Concentric’s observations related to the EPU Project’s
19 schedule development and management in 2013.**

20 A. Concentric observed that FPL had sufficient systems and procedures in place to
21 allow for appropriate oversight of the project schedule development and
22 management process. In addition, the Company appropriately integrated new
23 reporting mechanisms to track and complete the many closeout activities
24 necessary to complete the EPU Project.

1

2 Contract Management and Administration Processes

3 **Q. What was the focus of FPL's contracting activities in 2013 related to the**
4 **EPU Project?**

5 A. In 2013, FPL was focused on working with vendors to complete the final
6 implementation outage at PTN Unit 4 and to perform closeout activities, as well
7 as closing out the contracts it had entered into over the course of the EPU
8 Project.

9 **Q. In 2013, what processes were used to ensure the EPU Project was**
10 **prudently managing and administering the Company's procurement**
11 **functions?**

12 A. The procurement function continued to be governed by several well-defined
13 policies and procedures in 2013. Those policies continued to be administered
14 through the ISC organization and included a significant breadth and depth of
15 procurement processes, including a stated preference for competitive bidding
16 wherever possible, the proper means for conducting a comprehensive
17 solicitation, initial contract formation, and administration and close out of the
18 contract.

19 **Q. Were there cases in 2013 when contracts were executed without first**
20 **having gone through a competitive bidding process?**

21 A. Yes. While fewer in number in 2013 than in prior years due to the stage of the
22 EPU Project, certain situations called for the use of single source procurement
23 methods. The reasons for that included the fact that there are very few suppliers
24 qualified to handle the vast amount of proprietary technical information relied

1 upon when operating or working on a nuclear plant. Additionally, single
2 sourcing is appropriate in certain situations that involve leveraging existing
3 knowledge or expertise or otherwise capitalizing on synergies.

4 **Q. What process did FPL use to close out its EPU contracts at the**
5 **completion of the project?**

6 A. The contract close out process involved the collaboration of several FPL
7 departments, including ISC and Project Controls, to perform the necessary
8 activities to ensure that all requirements of the contract had been met in order
9 for ISC to mark the contract as closed and completed in FPL's asset
10 management system. Those activities included verification of receipt of all
11 deliverables, completion of work, verification that all invoices had been received
12 and paid, and resolution of outstanding change requests or claims.

13 **Q. What process was used in 2013 to make certain that the Company and its**
14 **customers received the full value of the various contracts for services and**
15 **materials?**

16 A. FPL continued to utilize an invoice review process to make certain that the
17 Company and its customers received the full value of the goods and services
18 being procured for the EPU Project. That process required a review of each
19 invoice by key project team members who worked closely with the vendor on the
20 goods and services for which payment was requested to make certain that the
21 costs being billed were correct and appropriate. Each invoice review required
22 approval by certain senior project team members based upon the individual's
23 corporate approval authority. That tiered oversight structure, including technical
24 specialists who were most familiar with the contracted work, ensured that the

1 EPU Project's procured goods and services provided their full value to the
2 Company and its customers.

3 **Q. Does Concentric have any observations and recommendations related to**
4 **the processes used to manage the EPU Project's procurement functions in**
5 **2013?**

6 A. Yes. Overall, Concentric noted that the EPU Project's procurement functions
7 performed quite well in 2013. FPL continued to apply robust procedures to its
8 purchasing activities, and worked to close out the significant number of contracts
9 required for the EPU Project.

10

11 *Internal Oversight Mechanisms*

12 **Q. What mechanisms exist for internal oversight and review of the EPU**
13 **Project?**

14 A. There continued to be several mechanisms used to make certain the EPU Project
15 received adequate oversight in 2013. First, the Company has in place senior
16 oversight and management committees, including the Board of Directors, the
17 Nuclear Committee on the Board of Directors, and the Company's Nuclear
18 Review Board. FPL also had an On-Site Review Group at PTN during the final
19 implementation outage. Second, the Company's senior management received a
20 briefing on the EPU Project on a periodic basis while the Company's Chief
21 Nuclear Officer ("CNO") received regular briefings, including during the
22 closeout process.

23 The EPU Project was also subject to an annual review by the FPL
24 Internal Audit Department, and the FPL QA/QC Department was responsible

1 for making certain that the FPL QA program was being implemented by the
2 EPU Project team. The FPL Employee Concerns Program (“ECP”) provided
3 FPL employees and contract workers with the ability to confidentially express
4 concerns related to the EPU Project.

5 Lastly, FPL transferred operational experience from NextEra’s nuclear
6 fleet to the EPU Project. That internal transfer of knowledge allowed FPL to
7 benefit from lessons learned within NextEra that resulted in improved efficiency
8 in the implementation of the EPU Project and during closeout activities.

9 **Q. Please describe the Internal Audit Department and its functions.**

10 A. The internal audit process was a backstop to make certain the EPU Project
11 complied with the Company’s internal policies and procedures. The Internal
12 Audit Department did not report to any of the EPU Project team members in
13 order to protect the Internal Audit Department’s employees’ independence.
14 Rather, Internal Audit reported administratively to the Senior Vice President of
15 Internal Audit and Compliance (who reported directly to the Chairman and CEO
16 of NextEra Energy), and functionally to the Audit Committee of the Board of
17 Directors.

18 **Q. Did the Internal Audit Department complete any audits in 2013?**

19 A. Yes. FPL’s Internal Audit Department completed several audits in 2013.
20 Although I have reviewed these, I will not be discussing them in my testimony
21 because the Company maintains confidentiality with respect to these audits.

1 **Q. Did those audits result in findings that were adverse to FPL's application**
2 **of its procedures and management of the EPU Project?**

3 A. No. While Internal Audit typically issues findings and recommendations as part
4 of its audits, the findings and recommendations did not indicate imprudent
5 management by FPL, and FPL took steps to address those findings to improve
6 its oversight of the project. As I described above, Internal Audit acted as a
7 backstop to the EPU's project controls functions, and its investigations and
8 findings allowed the project to address issues of human performance and, in
9 some instances, further improve upon its procedures.

10 **Q. Is Internal Audit conducting a review of the EPU Project costs charged in**
11 **2013?**

12 A. Yes. Costs incurred by the EPU Project in 2013 were reviewed by the
13 Company's Internal Audit Department. The Department's final report was
14 issued in February 2014 with no significant findings. Internal Audit performed a
15 similar review in 2013, which also had no significant findings.

16 **Q. Please describe the FPL QA/QC function and its purpose.**

17 A. In 2013, the FPL QA/QC employees were responsible for implementing the
18 Company's QA Program that was mandated by the NRC in 10 CFR 50,
19 Appendix B. The QA/QC function was separate from the EPU Project and
20 reported to the Company's CNO through the Director of Nuclear Assurance.
21 Federal regulations define eighteen criteria for an NRC licensee's QA program.
22 It was the responsibility of the QA/QC employees to ensure that FPL's QA
23 program met those criteria.

1 **Q. What QA activities related to the EPU Project took place in 2013?**

2 A. The QA/QC function oversaw the completion of the Implementation Phase of
3 the EPU Project. The QA/QC evaluators were also responsible for reviewing
4 certain activities by the EPU Project's vendors, both at the EPU Project sites as
5 well as at certain vendors' manufacturing facilities. Those activities included in-
6 person reviews of the project vendors' methodologies, qualifications and QA
7 programs. Finally, the QA/QC evaluators monitored NRC QA activities and
8 suggested changes to the EPU Project in order to respond to the NRC's findings
9 at other power uprate projects.

10 **Q. Please describe the FPL ECP and its purpose.**

11 A. The FPL ECP is a confidential process through which employees and
12 contractors can raise concerns regarding nuclear safety and hostile work
13 environments, among other issues. ECP has a physical presence at both PSL
14 and PTN, and ECP coordinators conducted outreach in order to educate
15 employees and contractors about the existence of the program. ECP personnel
16 perform investigations of employee concerns as necessary. The ECP does not
17 advocate on behalf of employees, but rather serves as an impartial reviewer and
18 investigator of issues in order to bolster a safe work environment.

19 **Q. What internal operational experience did FPL incorporate into the EPU
20 Project in 2013?**

21 A. In 2013, FPL incorporated operational experience learned from other plants
22 within NextEra's nuclear fleet in order to effectively perform close out activities
23 at the facilities. That operational experience was incorporated directly into FPL's
24 closeout plans for PSL and PTN.

1 **Q. Please provide Concentric’s observations related to the internal oversight**
2 **and review mechanisms utilized in 2013.**

3 A. FPL had in place the appropriate internal oversight and audit functions to
4 properly manage and survey the EPU Project, including processes to address
5 emerging issues and perform closeout activities. Those are important functions
6 to have within a mega project organization to ensure prudent execution of the
7 project.

8

9 *External Oversight Mechanisms*

10 **Q. What external oversight mechanisms did the Company utilize in 2013 to**
11 **ensure the EPU Project had adequate internal controls and was prudently**
12 **incurring costs?**

13 A. As in prior years, there were several external oversight and review mechanisms in
14 place for the EPU Project. Those oversight and review mechanisms included the
15 retention of my firm, Concentric, to perform the review described in this
16 testimony, ongoing contact with the project’s major vendors’ quality oversight
17 functions, industry contacts, and the FPSC Staff’s financial and internal controls
18 audits. Additionally, as a publicly-traded company, NextEra Energy must
19 undergo an annual company-wide audit of its financial and internal controls.

20 **Q. In 2013 did industry contacts provide a form of external oversight and**
21 **review?**

22 A. Yes. FPL is a member of several industry groups, including the Institute of
23 Nuclear Power Operations, the World Association of Nuclear Operators, the
24 Electric Power Research Institute and Nuclear Energy Institute (“NEI”), among

1 others, which provided further guidance about uprate projects. Each of those
2 groups provided the EPU Project team with access to a wide breadth and depth
3 of information that was used to enhance the project team's effectiveness.
4 Additionally, relationships that the EPU Project team members have with their
5 counterparts at other nuclear power plants around the country allowed the EPU
6 Project team to benefit from operating and construction experience at other
7 plants and incorporate that experience into the planning, implementation, and
8 closeout at PSL and PTN.

9 **Q. Did Concentric have any observations related to external oversight and**
10 **review of the project in 2013?**

11 A. During its review, Concentric noted that FPL appeared to have taken reasonable
12 steps to obtain and implement lessons learned from outside sources in 2013.
13 These lessons learned were vital to the successful execution of the projects.
14

15 **Section VI: PTN 6 & 7 Project Activities in 2013**

16 **Q. How is this section of your testimony organized?**

17 A. This section describes Concentric's review of the five key processes (*i.e.*, project
18 estimating and budgeting, project schedule development and management,
19 contract management and administration, internal oversight mechanisms, and
20 external oversight mechanisms) as they were applied to PTN 6 & 7 in 2013.

21 **Q. As a preliminary matter, what did your review lead you to conclude with**
22 **regard to the prudence of FPL's actions in 2013 on the PTN 6 & 7 Project?**

23 A. FPL's decision to continue pursuing PTN 6 & 7 in 2013 was prudent and was
24 expected to be beneficial to customers. In addition, Concentric's review

1 indicates that FPL's management of the PTN 6 & 7 Project over the course of
2 2013 has resulted in prudently-incurred costs. During 2013, FPL continued its
3 methodical approach to achieving its licensing goals, which will allow it to
4 continue to create the option to build new nuclear capacity for the benefit of its
5 customers.

6 **Q. How was PTN 6 & 7 organized in 2013?**

7 A. Since 2008, few changes have occurred in the PTN 6 & 7 Project organization,
8 and no changes were made in 2013. The 2013 PTN 6 & 7 organizational
9 structure is depicted in Exhibit JJR-4. The project continues to be developed
10 within two separate, but collaborative business units: Project Development and
11 New Nuclear Projects. While both organizations ultimately report through the
12 same executive management chain, their objectives are tied to each group's
13 respective capabilities. That approach allows FPL to ensure the most qualified
14 group is utilized to accomplish the project's objectives.

15 The Project Development organization was responsible for all aspects of
16 the project not related to the NRC in 2013, while the New Nuclear Projects
17 organization remains responsible for submitting and defending the PTN 6 & 7
18 Construction and Operating License Application ("COLA"). The New Nuclear
19 Projects organization will also be responsible for the engineering, procurement,
20 construction, and subsequent start-up of the project if a decision to proceed is
21 ultimately made.

1 **Q. Were there any changes in executive responsibility for the PTN 6 & 7**
2 **project in 2013?**

3 A. In March 2013, the New Nuclear Projects and Project Development
4 organizations were moved from the Engineering and Construction organization
5 to the Nuclear Division within FPL, which is led by the Company's CNO. This
6 change was made to reflect the project's current focus on licensing and
7 development of the option to construct the new units. It is anticipated that the
8 project will transition back into the Engineering and Construction organization if
9 and when a decision is made to move beyond the licensing phase of the project.

10 **Q. In 2013, who was responsible for the New Nuclear Projects organization?**

11 A. The CNO was supported directly by a Licensing Director who manages the New
12 Nuclear Projects organization. The Licensing Director was supported by
13 multiple Licensing Engineers and Document Control personnel, as well as by a
14 matrix relationship to other departments within FPL.

15 **Q. Who was responsible for the Project Development organization in 2013?**

16 A. The Project Development organization is led on a day-to-day basis by a Senior
17 Director of Development who was supported via matrix relationships by a
18 variety of FPL functional departments.

19 **Q. What internal FPL departments supported the New Nuclear Projects and**
20 **Project Development organizations in 2013?**

21 A. Both organizations received support from FPL's Juno Environmental Services,
22 Law Department, and ISC, among others.

1 **Q. Did Concentric have any observations related to the PTN 6 & 7**
2 **organizational structure in 2013?**

3 A. Yes. Concentric believes the organizational structure appropriately assigned
4 responsibility to those employees best equipped to respond to the project needs
5 and properly reflected the project's focus on the licensing and permitting stage
6 that the project is currently in.

7 **Q. What major milestones were achieved by PTN 6 & 7 in 2013?**

8 A. The main focus of the New Nuclear Project in 2013 was to continue to make
9 progress with federal and state licensing reviews. To that end, PTN 6 & 7
10 achieved several important milestones during the year.

11 The project's state Site Certification Application ("SCA") was the subject
12 of nearly eight weeks of hearings beginning in July, and extending into October.
13 In early December 2013, the Administrative Law Judge ("ALJ") hearing the case
14 issued a recommended order, stating that the Siting Board should grant final
15 certification to FPL for PTN 6 & 7 and approve its proposed eastern and western
16 transmission lines (*i.e.*, the East Preferred Corridor and West Consensus
17 Corridor/MDLPA #2). A final order is expected from the Siting Board in
18 March 2014.

19 At the federal level the project continued to respond to Requests for
20 Additional Information ("RAIs") from the NRC as that agency's staff reviews
21 the PTN 6 & 7 COLA. FPL provided responses to the NRC's RAIs regarding
22 seismic issues, geotechnical engineering, and the alternate site analysis. The
23 Company also participated in a series of public meetings between April and
24 November 2013 to discuss the NRC's concerns.

1 In addition, the PTN 6 & 7 project received zoning approval for plant
2 structures from Miami-Dade County in January 2013.

3 **Q. Were there changes in 2013 that affect expectations for the timing of future**
4 **regulatory approvals?**

5 A. Yes. The project expected to receive an updated licensing review schedule in
6 2013, but the NRC has not yet issued a revision. Because of the shutdown of the
7 federal government in the fall of 2013, expectations with respect to the waste
8 confidence rule, which I discuss in greater detail below, have been extended by at
9 least one month.

10 In addition, delays with respect to the SCA have resulted in the Site
11 Certification Board Meeting being moved to March 2014 from December 2013.

12 **Q. Do challenges facing the NRC affect the PTN 6 & 7 Project?**

13 A. Yes. The NRC was presented with two significant challenges in 2011 that I have
14 discussed in prior years and that continue to affect the nuclear industry. In
15 March 2011, the earthquake near Japan's Fukushima Daiichi Nuclear Generating
16 Station prompted the NRC to shift considerable personnel resources to an
17 emergency task force assigned with ensuring that both existing and proposed
18 U.S. nuclear facilities are adequately protected from similar seismic events. An
19 earthquake that struck Virginia only months later caused additional reassignment
20 of NRC engineering staff members to an assessment of that incident. As a result
21 of these emergent priorities, members of the teams assigned to review licensing
22 applications for new nuclear projects were tasked with other assignments,
23 delaying technical reviews of new nuclear licensing applications. The PTN 6 & 7
24 Project is not alone in having been affected by those staffing challenges. Exelon,

1 Tennessee Valley Authority, PSEG, and other projects have also received revised
2 review schedules.

3 In June 2012, the United States Court of Appeals for the District of
4 Columbia Circuit overturned the NRC's 2010 update to its waste confidence
5 rule. That update determined that spent fuel could be safely stored at power
6 plants for 60 years beyond their operation. According to the Court, the NRC
7 issued a flawed decision as it had not conducted sufficient environmental studies
8 before approving the revisions. In response to the Court's decision, the NRC
9 issued an order on August 7, 2012 stating it would wait before approving licenses
10 for new nuclear plants or renewing licenses of existing facilities until the issue of
11 how to store radioactive waste is resolved. Though no final decisions will be
12 made regarding approvals, the underlying process for licensing new and existing
13 plants continue to progress.

14 In September 2013, the NRC completed the draft generic environmental
15 impact statement ("GEIS") in support of the proposed waste confidence
16 rulemaking and submitted it to the EPA. It released the draft to the public for a
17 comment period intended to last 75 days. However, the federal government
18 shutdown in October 2013 forced the NRC to furlough 3,600 of its 3,900
19 employees. While essential personnel remained available for safety inspections
20 and emergencies, the NRC suspended all nonemergency reactor-licensing,
21 including postponing several public meetings concerning the draft GEIS. The
22 comment period was subsequently extended from its initial close date of
23 November 27, 2013 to December 20, 2013. The NRC currently expects to
24 deliver the final GEIS and rule by October 2014.

1 **Q. Please describe what decisions related to PTN 6 & 7 were made in 2013.**

2 A. Key decisions made in 2013 involved the state and federal licensing efforts. In
3 order to support the geotechnical documentation of features of the PTN 6 & 7
4 in responses to the NRC's RAIs, FPL engaged Rizzo and Associates ("Rizzo"), a
5 highly-respected geotechnical engineering firm. FPL engaged Rizzo because of
6 the vendor's significant contributions to the geotechnical analyses that have been
7 conducted at other new nuclear development sites.

8 On the state level, FPL made a number of key decisions regarding
9 stipulation agreements with stakeholders in the SCA process. By working closely
10 with other parties, FPL was able to reach agreements that limited the scope of
11 the SCA hearings, preventing an even more protracted schedule.

12 As it has in years past, FPL determined in 2013 that continuing to extend
13 PTN 6 & 7's reservation agreement with Westinghouse for reactor vessel head
14 ultra-heavy forgings presented the best value to customers. Constraints with
15 regard to ultra-heavy forgings have loosened considerably in recent years, and
16 FPL has continued to maintain flexibility with regard to the agreement by
17 regularly extending the terms while the Company evaluates the risks and benefits
18 of maintaining the reservation.

19 Lastly, due to ongoing uncertainty with the timing of the NRC's license
20 review process for PTN 6 & 7, FPL has made plans to reevaluate its execution
21 schedule for the units after the NRC publishes a new review schedule.

1 **Q. Was PTN 6 & 7 deemed feasible by the Company during the period of**
2 **your review?**

3 A. Yes. In the second fiscal quarter of 2013, the Company performed a feasibility
4 analysis regarding PTN 6 & 7, concluding that the project continued to be
5 feasible in five of the seven scenarios of fuel and environmental compliance
6 costs considered. FPL revisits its feasibility analysis on an annual basis in
7 accordance with NCRC requirements.

8

9 *Project Estimating and Budgeting Processes*

10 **Q. Please describe how the project budgets were developed for PTN 6 & 7 in**
11 **2013.**

12 A. As in prior years, the PTN 6 & 7 budgets were developed based on feedback
13 from each department supporting the New Nuclear Project. Those budgets
14 included a bottom-up analysis that assessed the resource needs of each
15 department during the year. A 15% contingency adjustment was applied to each
16 request for undefined scope or project uncertainties that could not be predicted
17 at the beginning of the year.

18 **Q. Was the process used by PTN 6 & 7 to develop its budgets consistent with**
19 **the Company's policies and procedures?**

20 A. Yes, the process utilized by PTN 6 & 7 to develop its 2013 budgets was
21 consistent with FPL's corporate procedures, which outline the process to be
22 used by each business unit when developing annual budgets.

23 No changes were made to the procedures that govern the development
24 of project budgets during 2013.

1 **Q. What mechanisms did the PTN 6 & 7 Project team use to monitor budget**
2 **performance in 2013?**

3 A. The PTN 6 & 7 Project team used numerous reports to manage budget
4 performance. Those reports are more fully described by FPL Witness Scroggs in
5 Exhibit SDS-4. Throughout the year, on a monthly basis, the PTN 6 & 7 Project
6 Management team received several reports detailing budget variances by
7 department, with explanations of the variances. Those reports included a
8 description of all costs expended in the current month and quarter as well as
9 year-to-date and total cumulative spending. In addition, the PTN 6 & 7 Project
10 team published quarterly “Due Diligence” reports for the Company’s senior
11 executives. Further, project management presented a status update to FPL’s
12 senior management on a monthly basis. Those presentations included a
13 description and explanation of any budget variances or significant project
14 challenges.

15 **Q. Are those reporting mechanisms consistent with the PTN 6 & 7 Project**
16 **Execution Plan?**

17 A. Yes. Reporting mechanisms in place throughout 2013 were consistent with the
18 PTN 6 & 7 Project Execution Plan, which was last revised in March 2010.

19 **Q. Within the PTN 6 & 7 Project team, who was responsible for tracking and**
20 **reporting project expenditures?**

21 A. Responsibility for tracking and reporting project expenditures was held by the
22 PTN 6 & 7 Project Controls Manager, who worked with a Senior Financial
23 Analyst to review and approve significant vendor invoices, and to track the
24 project’s expenditures relative to PTN 6 & 7’s annual budget. The processes in

1 place for approving invoices and tracking project expenditures are contained in
2 formal procedures used by the PTN 6 & 7 Project team. These procedures are
3 reviewed regularly, and are updated as changes become necessary.

4 **Q. Did Concentric have observations related to the PTN 6 & 7 budget**
5 **processes?**

6 A. Concentric found that in 2013 the PTN 6 & 7 Project team acted prudently
7 when developing its annual budget and in tracking its performance relative to the
8 annual budget. As in years past, the PTN 6 & 7 Project team developed a series
9 of reports that track budget performance on a cumulative and periodic basis,
10 along with a process for describing variances in actual expenditures relative to
11 the budget. The PTN 6 & 7 budget processes continue to include a variety of
12 mechanisms that ensure that the project's management and the Company's
13 senior management are well informed of the project's performance.

14 **Q. What are your observations regarding the Company's Quarterly Risk**
15 **Assessments?**

16 A. The Quarterly Risk Assessments, which contain an assessment of key issues in
17 six areas (*i.e.*, NRC License, Army Corps of Engineers Section 404b and Section
18 10 Permits, State Site Certification, Underground Injection Control Permit,
19 Miami Dade County Zoning and Land Use, and Development Agreements),
20 along with FPL's mitigation strategy, continue to be important tools to assist the
21 Company in analyzing, monitoring, and mitigating risks. The Quarterly Risk
22 Assessments also provide the Company with another method of tracking trends
23 in key issues facing the project, as well as the potential impacts to
24 implementation, cost, and schedule.

1 The Quarterly Risk Assessments are one of the methods by which FPL's
2 senior leadership is apprised of the PTN 6 & 7 Project's status. The assessments
3 are, therefore, very important to clearly communicate all risks and the full suite
4 of mitigation strategies being considered for the project.

5 **Q. Has FPL developed a cost estimate that is sufficiently detailed for the**
6 **current phase of the project?**

7 A. Yes. FPL's cost estimate is currently indicative in nature and will need to be
8 much more definitive before FPL commits to the construction phase of the
9 project. The Company plans to obtain a more definitive cost estimate as the
10 project progresses beyond the licensing phase.

11 **Q. Did FPL review its overnight cost estimate for the PTN 6 & 7 Project?**

12 A. Yes. FPL regularly evaluates whether design changes incorporated by
13 Westinghouse in response to the Fukushima incident or for other reasons are
14 likely to materially affect FPL's cost estimate for PTN 6 & 7.

15 After conducting a review of cost trends among other AP1000 projects,
16 FPL determined that no change in its cost estimate is warranted at this time.
17 Concentric understands that the Company plans to continue monitoring cost
18 trends among the other utilities pursuing new nuclear units, and FPL will work
19 with them and its contractors to update cost estimates in the future, as
20 appropriate.

21

1 Project Schedule Development and Management Processes

2 **Q. Please describe how the PTN 6 & 7 Project team produced and managed**
3 **the PTN 6 & 7 schedule in 2013.**

4 A. The initial PTN 6 & 7 Project schedule was developed earlier in PTN 6 & 7's life
5 cycle. This schedule continues to be refined and managed using an industry
6 standard software package developed by Primavera Systems, Inc., which I
7 described in the context of the EPU Project's schedule development.

8 As I discussed above, state and federal review schedules continue to
9 evolve. When a revised schedule from the NRC becomes available, FPL will
10 evaluate the effect that any schedule adjustments may have on the project
11 timeline, including the assessment of whether early construction phases can be
12 further condensed to capture lost time from extended regulatory reviews.

13 The PTN 6 & 7 project schedule is currently managed by the New
14 Nuclear Projects and Project Development organization leaders. If and when
15 the project moves beyond the licensing phase, responsibility for the PTN 6 & 7
16 schedule will transition to the Project Controls organization.

17 **Q. What procedures or project instructions existed in 2013 to govern the**
18 **development and refinement of the PTN 6 & 7 schedule?**

19 A. New Nuclear Project - Project Instruction 100 continues to govern the
20 development, refinement and configuration of the project schedule. No
21 substantive changes were made to this project instruction in 2013, although the
22 Company expects to revisit this document in 2014.

1 **Q. What mechanisms were in place to ensure that the PTN 6 & 7 Project**
2 **team prudently managed its schedule performance?**

3 A. The PTN 6 & 7 Project team proactively monitored and managed its schedule
4 performance on a weekly and monthly basis. In addition, the PTN 6 & 7 Project
5 team has incorporated similar reporting requirements into its contracts with key
6 vendors, such as Bechtel, requiring them to submit monthly progress reports
7 detailing their progress to date, including any projected delays.

8 **Q. Did Concentric have any observations related to how the PTN 6 & 7**
9 **Project team managed and reported its schedule performance in 2013?**

10 A. Yes. Concentric believes PTN 6 & 7 has taken appropriate steps to prudently
11 manage and report on its schedule performance, which include keeping executive
12 management informed on the project's progress against its schedule plans.

13

14 *Contract Management and Administration Processes*

15 **Q. Did PTN 6 & 7 require the use of outside vendors in 2013?**

16 A. Yes. In order to avoid the need to recruit, train and retain the significant number
17 of employees required to obtain a COL and Site Certification, to complete other
18 project activities, and to respond to interrogatories from federal, state, and local
19 agencies, FPL continued to use a number of outside vendors in 2013. Those
20 vendors were utilized to provide ongoing post-submittal support, among other
21 tasks. As has been the case in years past, FPL's use of outside vendors and
22 contractors is consistent with standard practices in the new nuclear industry.

1 **Q. How did the PTN 6 & 7 Project team make certain that it was prudently**
2 **managing and administering its procurement processes?**

3 A. FPL has a number of corporate procedures related to the procurement function.
4 In addition, ISC, which has overall responsibility for managing FPL's commercial
5 interactions with vendors, produced a desktop Procurement Process Manual that
6 provides more detailed instructions for implementing the corporate procedures,
7 while also containing nuclear-specific procurement procedures. The corporate
8 procedures, along with the Procurement Process Manual, are sufficiently detailed
9 to ensure that ISC prudently manages the procurement activities that must take
10 place to support an endeavor such as PTN 6 & 7. Additionally, those procedures
11 clearly state a preference for competitive bidding except in instances where no
12 other supplier can be identified, in cases of emergencies, or when a compelling
13 business reason not to seek competitive bids exists.

14 **Q. Were any procedures used by the ISC team revised in 2013?**

15 A. In 2013, no changes were made to procedures governing contractor oversight
16 and management. However, one change was made to procedures related to
17 contractor selection. The instructions outlining the use of pre-determined
18 sources were revised to require approval from an ISC Vice President or a higher
19 level in the project organization.

20 **Q. Did Concentric review examples of how these processes were**
21 **implemented throughout 2013?**

22 A. Yes. Concentric reviewed information related to new contracts, purchase orders
23 and change orders issued for the PTN 6 & 7 Project that involved at least
24 \$100,000. Relative to prior years, PTN 6 & 7 entered into comparatively few

1 new contracts in 2013, executing only four such contracts during the year. Of
2 these, all four were single-sourced.

3 **Q. What processes were in place to ensure that PTN 6 & 7 received the full**
4 **value for the goods and services that were procured in 2013 and that**
5 **appropriate charges were invoiced to the project?**

6 A. In order to ensure that the Company and its customers received the full value of
7 the goods and services that were procured, the PTN 6 & 7 project directors and
8 their staffs were responsible for reviewing each invoice received from the major
9 PTN 6 & 7 Project vendors. To perform that review, the Business Manager's
10 staff received the invoices from each of the project's vendors. Upon receipt, an
11 Invoice Review/Verification Form that detailed which technical or functional
12 representative was responsible for reviewing each section of the invoice was
13 attached to the invoice. That form and the respective invoice were then sent to
14 each reviewer to verify that the appropriate charges were included in the invoice
15 and that the work product met PTN 6 & 7's needs and contractual provisions
16 prior to payment. When discrepancies were identified, FPL sought a credit on a
17 future invoice or deducted the amount from the current invoice depending on
18 discussions with the vendor. Similar processes are utilized by the FPL
19 departments that support PTN 6 & 7.

20 **Q. Does Concentric have any observations related to FPL's management of**
21 **the contract management and administration processes?**

22 A. Yes. Concentric found that FPL managed the contract management and
23 administration process according to its corporate procedures and guidelines in
24 2013.

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Internal Oversight Mechanisms

Q. What internal reporting mechanisms were used to inform the Company's senior management of PTN 6 & 7's status and key decisions?

A. As I discuss above, the PTN 6 & 7 Project team continued to use a number of periodic reports in 2013 to inform the project management team and the Company's executive management of progress with PTN 6 & 7. Those reports are described in greater detail in the direct testimony of FPL Witness Scroggs and are used to make certain that the costs PTN 6 & 7 is incurring are the result of prudent decision-making processes. Those reports included monthly reports that detailed key budget and schedule performance.

Q. What other internal oversight and review mechanisms exist for the New Nuclear Project?

A. PTN 6 & 7 is subject to FPL's corporate procedures, but prior to March 2013 had been developed outside of the FPL Nuclear Division. Therefore, PTN 6 & 7 had not been automatically subject to the Nuclear Division's policies. To address this condition, and to remain in compliance with the NRC's QA requirements, the FPL QA/QC department developed a procedure, QI-2-NNP-01, that identifies which FPL Nuclear Division polices are applicable to PTN 6 & 7. QA/QC staff created a regular update schedule to revise and update this procedure in order to adapt to the dynamic nature of the project. As of March 2013 PTN 6 & 7 became a part of the Nuclear Division, and continued to follow the applicable policies identified by Procedure QI-2-NNP-01.

1 Additionally, there were two active internal oversight and review
2 mechanisms for PTN 6 & 7: the FPL Internal Audit Department and the FPL
3 QA/QC department.

4 **Q. Please describe the FPL Internal Audit Department and its function.**

5 A. FPL's Internal Audit Department, described earlier in the context of the EPU
6 project, performs regular audits of PTN 6 & 7, not only focusing on the
7 eligibility of the costs being recorded to the NCRC for recovery from customers,
8 but also considering internal controls as part of its procedures, and commenting
9 to PTN 6 & 7 if it finds areas for improvement. Each year, the FPL Internal
10 Audit Department performs an audit of PTN 6 & 7 to test whether charges
11 billed to the project are appropriate and that those charges are being accounted
12 for correctly. Very often, findings are resolved during the course of the audit,
13 and any unresolved items are tracked within a database to make sure they are
14 completed on schedule.

15 Costs incurred by the New Nuclear Project in 2013 are currently being
16 reviewed by the Company's Internal Audit Department. As of January 2014, a
17 final report was expected to be issued by Internal Audit in April 2014.

18 **Q. Did the Internal Audit Group have any adverse findings related to PTN 6
19 & 7 in 2013?**

20 A. No, it did not.

21 **Q. Please describe the FPL QA/QC function and its purpose.**

22 A. The FPL QA/QC function has a similar mandate with regard to PTN 6 & 7 as it
23 does for the EPU Project, which was discussed earlier in my testimony.

1 **Q. Were any QA/QC issues found in 2013?**

2 A. The QA/QC function performed several surveillance audits of vendors working
3 on the PTN 6 & 7 project, and produced minor findings in its surveillance of one
4 vendor in July 2013. These concerns were quickly addressed to the satisfaction
5 of the QA/QC team.

6 **Q. Does the Company maintain other internal oversight and review
7 mechanisms for PTN 6 & 7?**

8 A. Yes. The Company maintains other internal oversight mechanisms that are
9 available to help ensure that PTN 6 & 7 is prudently incurring costs. The first of
10 those mechanisms is the FPL Corporate Risk Committee. This committee
11 consists of FPL director-level and other senior employees, and is charged with
12 ensuring that the project appropriately considers risks when making key project
13 decisions. That committee is available to the project when necessary as an
14 additional oversight tool.

15 **Q. Did Concentric have any observations related to PTN 6 & 7's internal
16 oversight mechanisms?**

17 A. Yes. Concentric has found that FPL's internal oversight mechanisms were
18 prudently and appropriately applied in 2013.

19

20 *External Oversight Mechanisms*

21 **Q. What external review mechanisms were used by the PTN 6 & 7 Project
22 team in 2013 to ensure the Company is prudently incurring costs?**

23 A. PTN 6 & 7 and FPL have been subject to several external reviews. These
24 reviews are utilized to make certain industry best practices are incorporated into

1 PTN 6 & 7 and to improve overall project and senior management performance.
2 These reviews include Concentric's review of the Company's activities and
3 project controls and the FPSC Staff's financial and internal controls audits.
4 Those reviews are in addition to NextEra Energy's company-wide audit of its
5 financial and internal controls, discussed earlier.

6 **Q. Are there other external information sources relied upon by the PTN 6 & 7**
7 **Project team?**

8 A. Yes. In 2013, FPL maintained membership in several industry groups that relate
9 to the development of new nuclear projects. Those groups include APOG (the
10 AP1000 owners group), the Electric Power Research Institute, and NEI, among
11 others. Each of those groups provides the PTN 6 & 7 Project team with access
12 to a breadth and depth of information that can be used to enhance the PTN 6 &
13 7 Project team's effectiveness.

14 **Q. Did Concentric have any observations related to the external oversight**
15 **mechanisms utilized by FPL in 2013?**

16 A. Based on Concentric's review to date, Concentric believes the PTN 6 & 7
17 Project team is proactively seeking to incorporate best practices into the
18 management of PTN 6 & 7. That is being achieved by retaining outside experts
19 to review and comment on certain aspects of the project and by soliciting
20 external information sources that can provide useful guidance to the project
21 team.

22

23 **Section VII: Conclusions**

24 **Q. Please summarize your conclusions.**

1 A. It is my conclusion that FPL's decision making and management actions as they
2 related to the costs for which FPL is seeking recovery for the EPU Project and
3 PTN 6 & 7 in 2013 were prudent, and it is thus my opinion that FPL's 2013
4 expenditures on the EPU Project and PTN 6 & 7 were prudently incurred.
5 FPL's decision making and management actions as they related to the EPU
6 Project in 2013 included: management of the final implementation outage at
7 PTN Unit 4, incorporation of lessons learned from earlier outages into the
8 implementation of the final outage, execution of closeout activities at PSL and
9 PTN, incorporation of lessons learned from NextEra's nuclear fleet into the
10 closeout phase, demobilization of vendors, and de-staffing of the EPU Project
11 organization. For PTN 6 & 7, FPL continued its methodical approach to
12 achieving its licensing goals, which will allow it to continue to create the option
13 to build new nuclear capacity for the benefit of its customers. As a consequence,
14 it is my opinion that FPL's 2013 expenditures on the EPU Project and PTN 6 &
15 7 were prudently incurred.

16 It is important to note that for over three decades nuclear power has
17 provided a number of substantial benefits to utility customers in Florida. Those
18 benefits include electric generation with virtually no GHG emissions, fuel cost
19 savings, fuel diversity, reduced exposure to fuel price volatility and efficient land
20 use. As a result, it is prudent for FPL to develop additional nuclear capacity for
21 its customers. FPL has carefully managed the EPU Project, and the Company
22 continues to develop PTN 6 & 7 through capable project managers and directors
23 that are guided by detailed company procedures and appropriate management
24 oversight.

1 Q. Does this conclude your testimony?

2 A. Yes, it does.

1 Endnotes:

-
- 2 ¹ U.S. Department of Energy, The Energy Information Administration (EIA),
3 Monthly Nuclear Utility Generation (MWh) by State and Reactor, 2012 Final
4 Release.
- 5 Environmental Protection Agency, eGRIDweb online application.
6 <http://cfpub.epa.gov/egridweb/view.cfm>
- 7 ² “Review of the 2013 Ten-Year Site Plans for Florida’s Electric Utilities,” *Florida*
8 *Public Service Commission*, October 2013.
- 9 ³ Bloomberg Finance, L.P.
- 10 ⁴ Sears, Keoki S., Glenn A. Sears, and Richard H. Clough, Construction Project
11 Management: A Practical Guide to Field Construction Management. 5th Edition,
12 John Wiley & Sons, Hoboken, NJ, 2008, at 20.
- 13 ⁵ Concentric understands that a few closeout activities remain for completion in
14 2014 but these activities were transferred from the EPU organization to the
15 appropriate plant organization.
- 16 ⁶ Florida Public Service Commission Order No. PSC-090783-FOF-EI.

John J. Reed
Chairman and Chief Executive Officer

John J. Reed is a financial and economic consultant with more than 35 years of experience in the energy industry. Mr. Reed has also been the CEO of an NASD member securities firm, and Co-CEO of the nation's largest publicly traded management consulting firm (NYSE: NCI). He has provided advisory services in the areas of mergers and acquisitions, asset divestitures and purchases, strategic planning, project finance, corporate valuation, energy market analysis, rate and regulatory matters and energy contract negotiations to clients across North and Central America. Mr. Reed's comprehensive experience includes the development and implementation of nuclear, fossil, and hydroelectric generation divestiture programs with an aggregate valuation in excess of \$20 billion. Mr. Reed has also provided expert testimony on financial and economic matters on more than 150 occasions before the FERC, Canadian regulatory agencies, state utility regulatory agencies, various state and federal courts, and before arbitration panels in the United States and Canada. After graduation from the Wharton School of the University of Pennsylvania, Mr. Reed joined Southern California Gas Company, where he worked in the regulatory and financial groups, leaving the firm as Chief Economist in 1981. He served as executive and consultant with Stone & Webster Management Consulting and R.J. Rudden Associates prior to forming REED Consulting Group (RCG) in 1988. RCG was acquired by Navigant Consulting in 1997, where Mr. Reed served as an executive until leaving Navigant to join Concentric as Chairman and Chief Executive Officer.

REPRESENTATIVE PROJECT EXPERIENCE

Executive Management

As an executive-level consultant, worked with CEOs, CFOs, other senior officers, and Boards of Directors of many of North America's top electric and gas utilities, as well as with senior political leaders of the U.S. and Canada on numerous engagements over the past 25 years. Directed merger, acquisition, divestiture, and project development engagements for utilities, pipelines and electric generation companies, repositioned several electric and gas utilities as pure distributors through a series of regulatory, financial, and legislative initiatives, and helped to develop and execute several "roll-up" or market aggregation strategies for companies seeking to achieve substantial scale in energy distribution, generation, transmission, and marketing.

Financial and Economic Advisory Services

Retained by many of the nation's leading energy companies and financial institutions for services relating to the purchase, sale or development of new enterprises. These projects included major new gas pipeline projects, gas storage projects, several non-utility generation projects, the purchase and sale of project development and gas marketing firms, and utility acquisitions. Specific services provided include the development of corporate expansion plans, review of acquisition candidates, establishment of divestiture standards, due diligence on acquisitions or financing, market entry or expansion studies, competitive assessments, project financing studies, and negotiations relating to these transactions.

Litigation Support and Expert Testimony

Provided expert testimony on more than 150 occasions in administrative and civil proceedings on a wide range of energy and economic issues. Clients in these matters have included gas distribution utilities, gas pipelines, gas producers, oil producers, electric utilities, large energy consumers, governmental and regulatory agencies, trade associations, independent energy project developers, engineering firms, and gas and power

marketers. Testimony has focused on issues ranging from broad regulatory and economic policy to virtually all elements of the utility ratemaking process. Also frequently testified regarding energy contract interpretation, accepted energy industry practices, horizontal and vertical market power, quantification of damages, and management prudence. Has been active in regulatory contract and litigation matters on virtually all interstate pipeline systems serving the U.S. Northeast, Mid-Atlantic, Midwest, and Pacific regions.

Also served on FERC Commissioner Terzic's Task Force on Competition, which conducted an industry-wide investigation into the levels of and means of encouraging competition in U.S. natural gas markets and served on a "Blue Ribbon" panel established by the Province of New Brunswick regarding the future of natural gas distribution service in that province.

Resource Procurement, Contracting and Analysis

On behalf of gas distributors, gas pipelines, gas producers, electric utilities, and independent energy project developers, personally managed or participated in the negotiation, drafting, and regulatory support of hundreds of energy contracts, including the largest gas contracts in North America, electric contracts representing billions of dollars, pipeline and storage contracts, and facility leases.

These efforts have resulted in bringing large new energy projects to market across North America, the creation of hundreds of millions of dollars in savings through contract renegotiation, and the regulatory approval of a number of highly contested energy contracts.

Strategic Planning and Utility Restructuring

Acted as a leading participant in the restructuring of the natural gas and electric utility industries over the past fifteen years, as an adviser to local distribution companies, pipelines, electric utilities, and independent energy project developers. In the recent past, provided services to most of the top 50 utilities and energy marketers across North America. Managed projects that frequently included the redevelopment of strategic plans, corporate reorganizations, the development of multi-year regulatory and legislative agendas, merger, acquisition and divestiture strategies, and the development of market entry strategies. Developed and supported merchant function exit strategies, marketing affiliate strategies, and detailed plans for the functional business units of many of North America's leading utilities.

PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2002 – Present)

Chairman and Chief Executive Officer

CE Capital Advisors (2004 – Present)

Chairman, President, and Chief Executive Officer

Navigant Consulting, Inc. (1997 – 2002)

President, Navigant Energy Capital (2000 – 2002)

Executive Director (2000 – 2002)

Co-Chief Executive Officer, Vice Chairman (1999 – 2000)

Executive Managing Director (1998 – 1999)

President, REED Consulting Group, Inc. (1997 – 1998)

REED Consulting Group (1988 – 1997)

Chairman, President and Chief Executive Officer

R.J. Rudden Associates, Inc. (1983 – 1988)

Vice President

Stone & Webster Management Consultants, Inc. (1981 – 1983)

Senior Consultant

Consultant

Southern California Gas Company (1976 – 1981)

Corporate Economist

Financial Analyst

Treasury Analyst

EDUCATION AND CERTIFICATION

B.S., Economics and Finance, Wharton School, University of Pennsylvania, 1976

Licensed Securities Professional: NASD Series 7, 63, 24, 79 and 99 Licenses

BOARDS OF DIRECTORS (PAST AND PRESENT)

Concentric Energy Advisors, Inc.

Navigant Consulting, Inc.

Navigant Energy Capital

Nukem, Inc.

New England Gas Association

R. J. Rudden Associates

REED Consulting Group

AFFILIATIONS

American Gas Association

Energy Bar Association

Guild of Gas Managers

International Association of Energy Economists

National Association of Business Economists

New England Gas Association

Society of Gas Lighters

ARTICLES AND PUBLICATIONS

“Maximizing U.S. federal loan guarantees for new nuclear energy,” *Bulletin of the Atomic Scientists* (with John C. Slocum), July 29, 2009

“Smart Decoupling – Dealing with unfunded mandates in performance-based ratemaking,” *Public Utilities Fortnightly*, May 2012



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Alaska Public Utilities Commission				
Chugach Electric	12/86	Chugach Electric	Docket No. U-86-11	Cost Allocation
Chugach Electric	6/87	Enstar Natural Gas Company	Docket No. U-87-2	Tariff Design
Chugach Electric	12/87	Enstar Natural Gas Company	Docket No. U-87-42	Gas Transportation
Chugach Electric	11/87, 2/88	Chugach Electric	Docket No. U-87-35	Cost of Capital
Alberta Utilities Commission				
Alberta Utilities (AltaLink, EPCOR, ATCO, ENMAX, FortisAlberta, Alta Gas)	1/13	Alberta Utilities	Application 1566373, Proceeding ID 20	Stranded Costs
Arizona Corporation Commission				
Tucson Electric Power	7/12	Tucson Electric Power	Docket No. E- 01933A-12-0291	Cost of Capital
California Energy Commission				
Southern California Gas Co.	8/80	Southern California Gas Co.	Docket No. 80-BR-3	Gas Price Forecasting
California Public Utility Commission				
Southern California Gas Co.	3/80	Southern California Gas Co.	TY 1981 G.R.C.	Cost of Service, Inflation
Pacific Gas Transmission Co.	10/91, 11/91	Pacific Gas & Electric Co.	App. 89-04-033	Rate Design
Pacific Gas Transmission Co.	7/92	Southern California Gas Co.	A. 92-04-031	Rate Design
Colorado Public Utilities Commission				
AMAX Molybdenum	2/90	Commission Rulemaking	Docket No. 89R- 702G	Gas Transportation

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 1 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
AMAX Molybdenum	11/90	Commission Rulemaking	Docket No. 90R-508G	Gas Transportation
Xcel Energy	8/04	Xcel Energy	Docket No. 031-134E	Cost of Debt
CT Dept. of Public Utilities Control				
Connecticut Natural Gas	12/88	Connecticut Natural Gas	Docket No. 88-08-15	Gas Purchasing Practices
United Illuminating	3/99	United Illuminating	Docket No. 99-03-04	Nuclear Plant Valuation
Southern Connecticut Gas	2/04	Southern Connecticut Gas	Docket No. 00-12-08	Gas Purchasing Practices
Southern Connecticut Gas	4/05	Southern Connecticut Gas	Docket No. 05-03-17	LNG/Trunkline
Southern Connecticut Gas	5/06	Southern Connecticut Gas	Docket No. 05-03-17PH01	LNG/Trunkline
Southern Connecticut Gas	8/08	Southern Connecticut Gas	Docket No. 06-05-04	Peaking Service Agreement
District Of Columbia PSC				
Potomac Electric Power Company	3/99, 5/99, 7/99	Potomac Electric Power Company	Docket No. 945	Divestiture of Gen. Assets & Purchase Power Contracts
Fed'l Energy Regulatory Commission				
Safe Harbor Water Power Corp.	8/82	Safe Harbor Water Power Corp.		Wholesale Electric Rate Increase
Western Gas Interstate Company	5/84	Western Gas Interstate Company	Docket No. RP84-77	Load Fcst. Working Capital
Southern Union Gas	4/87, 5/87	El Paso Natural Gas Company	Docket No. RP87-16-000	Take-or-Pay Costs
Connecticut Natural Gas	11/87	Penn-York Energy Corporation	Docket No. RP87-78-000	Cost Alloc./Rate Design

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 2 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
AMAX Magnesium	12/88, 1/89	Questar Pipeline Company	Docket No. RP88-93-000	Cost Alloc./Rate Design
Western Gas Interstate Company	6/89	Western Gas Interstate Company	Docket No. RP89-179-000	Cost Alloc./Rate Design, Open-Access Transportation
Associated CD Customers	12/89	CNG Transmission	Docket No. RP88-211-000	Cost Alloc./Rate Design
Utah Industrial Group	9/90	Questar Pipeline Company	Docket No. RP88-93-000, Phase II	Cost Alloc./Rate Design
Iroquois Gas Trans. System	8/90	Iroquois Gas Transmission System	Docket No. CP89-634-000/001; CP89-815-000	Gas Markets, Rate Design, Cost of Capital, Capital Structure
Boston Edison Company	1/91	Boston Edison Company	Docket No. ER91-243-000	Electric Generation Markets
Cincinnati Gas and Electric Co., Union Light, Heat and Power Company, Lawrenceburg Gas Company	7/91	Texas Gas Transmission Corp.	Docket No. RP90-104-000, RP88-115-000, RP90-192-000	Cost Alloc./Rate Design Comparability of Svc.
Ocean State Power II	7/91	Ocean State Power II	ER89-563-000	Competitive Market Analysis, Self-dealing
Brooklyn Union/PSE&G	7/91	Texas Eastern	RP88-67, et al	Market Power, Comparability of Service
Northern Distributor Group	9/92, 11/92	Northern Natural Gas Company	RP92-1-000, et al	Cost of Service
Canadian Association of Petroleum Producers and Alberta Pet. Marketing Comm.	10/92. 7/97	Lakehead Pipe Line Co. L.P.	IS92-27-000	Cost Allocation, Rate Design

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 3 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Colonial Gas, Providence Gas	7/93, 8/93	Algonquin Gas Transmission	RP93-14	Cost Allocation, Rate Design
Iroquois Gas Transmission	94	Iroquois Gas Transmission	RP94-72-000	Cost of Service and Rate Design
Transco Customer Group	1/94	Transcontinental Gas Pipeline Corporation	Docket No. RP92-137-000	Rate Design, Firm to Wellhead
Pacific Gas Transmission	2/94, 3/95	Pacific Gas Transmission	Docket No. RP94-149-000	Rolled-In vs. Incremental Rates; rate design
Tennessee GSR Group	1/95, 3/95, 1/96	Tennessee Gas Pipeline Company	Docket Nos. RP93-151-000, RP94-39-000, RP94-197-000, RP94-309-000	GSR Costs
PG&E and SoCal Gas	8/96, 9/96	El Paso Natural Gas Company	RP92-18-000	Stranded Costs
Iroquois Gas Transmission System, L.P.	97	Iroquois Gas Transmission System, L.P.	RP97-126-000	Cost of Service, Rate Design
BEC Energy - Commonwealth Energy System	2/99	Boston Edison Company/ Commonwealth Energy System	EC99-33-000	Market Power Analysis – Merger
Central Hudson Gas & Electric, Consolidated Co. of New York, Niagara Mohawk Power Corporation, Dynegy Power Inc.	10/00	Central Hudson Gas & Electric, Consolidated Co. of New York, Niagara Mohawk Power Corporation, Dynegy Power Inc.	Docket No. EC01-7-000	Market Power 203/205 Filing
Wyckoff Gas Storage	12/02	Wyckoff Gas Storage	CP03-33-000	Need for Storage Project
Indicated Shippers/Producers	10/03	Northern Natural Gas	Docket No. RP98-39-029	Ad Valorem Tax Treatment

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 4 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Maritimes & Northeast Pipeline	6/04	Maritimes & Northeast Pipeline	Docket No. RP04-360-000	Rolled-In Rates
ISO New England	8/04 2/05	ISO New England	Docket No. ER03-563-030	Cost of New Entry
Transwestern Pipeline Company, LLC	9/06	Transwestern Pipeline Company, LLC	Docket No. RP06-614-000	
Portland Natural Gas Transmission System	6/08	Portland Natural Gas Transmission System	Docket No. RP08-306-000	Market Assessment, natural gas transportation; rate setting
Portland Natural Gas Transmission System	5/10, 3/11, 4/11	Portland Natural Gas Transmission System	Docket No. RP10-729-000	Business risks; extraordinary and non-recurring events pertaining to discretionary revenues
Morris Energy	7/10	Morris Energy	Docket No. RP10-79-000	Affidavit re: Impact of Preferential Rate
Florida Public Service Commission				
Florida Power and Light Co.	10/07	Florida Power & Light Co.	Docket No. 070650-EI	Need for new nuclear plant
Florida Power and Light Co.	5/08	Florida Power & Light Co.	Docket No. 080009-EI	New Nuclear cost recovery, prudence
Florida Power and Light Co.	3/09	Florida Power & Light Co.	Docket No. 080677-EI	Benchmarking in support of ROE
Florida Power and Light Co.	3/09, 5/09, 8/09	Florida Power & Light Co.	Docket No. 090009-EI	New Nuclear cost recovery, prudence

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 5 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Florida Power and Light Co.	3/10; 5/10, 8/10	Florida Power & Light Co.	Docket No. 100009-EI	New Nuclear cost recovery, prudence
Florida Power and Light Co.	3/11, 7/11	Florida Power & Light Co.	Docket No. 110009-EI	New Nuclear cost recovery, prudence
Florida Power and Light Co.	3/12 7/12	Florida Power & Light Co.	Docket No. 120009-EI	New Nuclear cost recovery , prudence
Florida Power and Light Co.	3/12 8/12	Florida Power & Light Co.	Docket No. 120015-EI	Benchmarking in support of ROE
Florida Power and Light Co.	3/13, 7/13	Florida Power & Light Co.	Docket No. 130009	New Nuclear cost recovery, prudence
Florida Senate Committee on Communication, Energy and Utilities				
Florida Power and Light Co.	2/09	Florida Power & Light Co.		Securitization
Hawaii Public Utility Commission				
Hawaiian Electric Light Company, Inc. (HELCO)	6/00	Hawaiian Electric Light Company, Inc.	Docket No. 99-0207	Standby Charge
Illinois Commerce Commission				
Renewables Suppliers (Algonquin Power Co., EDP Renewables North America, Invenergy, NextEra Energy Resources)	1/14	Renewables Suppliers	Docket No. 13-0546	Application for Rehearing and Reconsideration; long-term purchase power agreements

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 6 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Indiana Utility Regulatory Commission				
Northern Indiana Public Service Company	10/01	Northern Indiana Public Service Company	Cause No. 41746	Valuation of Electric Generating Facilities
Northern Indiana Public Service Company	01/08, 03/08	Northern Indiana Public Service Company	Cause No. 43396	Asset Valuation
Northern Indiana Public Service Company	08/08	Northern Indiana Public Service Company	Cause No. 43526	Fair Market Value Assessment
Iowa Utilities Board				
Interstate Power and Light	7/05	Interstate Power and Light and FPL Energy Duane Arnold, LLC	Docket No. SPU-05-15	Sale of Nuclear Plant
Interstate Power and Light	5/07	City of Everly, Iowa	Docket No. SPU-06-5	Municipalization
Interstate Power and Light	5/07	City of Kalona, Iowa	Docket No. SPU-06-6	Municipalization
Interstate Power and Light	5/07	City of Wellman, Iowa	Docket No. SPU-06-10	Municipalization
Interstate Power and Light	5/07	City of Terril, Iowa	Docket No. SPU-06-8	Municipalization
Interstate Power and Light	5/07	City of Rolfe, Iowa	Docket No. SPU-06-7	Municipalization
Maine Public Utility Commission				
Northern Utilities	5/96	Granite State and PNGTS	Docket No. 95-480, 95-481	Transportation Service and PBR
Maryland Public Service Commission				
Eastalco Aluminum	3/82	Potomac Edison	Docket No. 7604	Cost Allocation
Potomac Electric Power Company	8/99	Potomac Electric Power Company	Docket No. 8796	Stranded Cost & Price Protection

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 7 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Mass. Department of Public Utilities				
Haverhill Gas	5/82	Haverhill Gas	Docket No. DPU #1115	Cost of Capital
New England Energy Group	1/87	Commission Investigation		Gas Transportation Rates
Energy Consortium of Mass.	9/87	Commonwealth Gas Company	Docket No. DPU-87-122	Cost Alloc./Rate Design
Mass. Institute of Technology	12/88	Middleton Municipal Light	DPU #88-91	Cost Alloc./Rate Design
Energy Consortium of Mass.	3/89	Boston Gas	DPU #88-67	Rate Design
PG&E Bechtel Generating Co./ Constellation Holdings	10/91	Commission Investigation	DPU #91-131	Valuation of Environmental Externalities
Coalition of Non-Utility Generators		Cambridge Electric Light Co. & Commonwealth Electric Co.	DPU 91-234 EFSC 91-4	Integrated Resource Management
The Berkshire Gas Company Essex County Gas Company Fitchburg Gas and Elec. Light Co.	5/92	The Berkshire Gas Company Essex County Gas Company Fitchburg Gas & Elec. Light Co.	DPU #92-154	Gas Purchase Contract Approval
Boston Edison Company	7/92	Boston Edison	DPU #92-130	Least Cost Planning
Boston Edison Company	7/92	The Williams/Newcorp Generating Co.	DPU #92-146	RFP Evaluation
Boston Edison Company	7/92	West Lynn Cogeneration	DPU #92-142	RFP Evaluation
Boston Edison Company	7/92	L'Energia Corp.	DPU #92-167	RFP Evaluation
Boston Edison Company	7/92	DLS Energy, Inc.	DPU #92-153	RFP Evaluation
Boston Edison Company	7/92	CMS Generation Co.	DPU #92-166	RFP Evaluation
Boston Edison Company	7/92	Concord Energy	DPU #92-144	RFP Evaluation

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 8 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
The Berkshire Gas Company Colonial Gas Company Essex County Gas Company Fitchburg Gas and Electric Company	11/93	The Berkshire Gas Company Colonial Gas Company Essex County Gas Company Fitchburg Gas and Electric Co.	DPU #93-187	Gas Purchase Contract Approval
Bay State Gas Company	10/93	Bay State Gas Company	Docket No. 93-129	Integrated Resource Planning
Boston Edison Company	94	Boston Edison	DPU #94-49	Surplus Capacity
Hudson Light & Power Department	4/95	Hudson Light & Power Dept.	DPU #94-176	Stranded Costs
Essex County Gas Company	5/96	Essex County Gas Company	Docket No. 96-70	Unbundled Rates
Boston Edison Company	8/97	Boston Edison Company	D.P.U. No. 97-63	Holding Company Corporate Structure
Berkshire Gas Company	6/98	Berkshire Gas Mergeco Gas Co.	D.T.E. 98-87	Merge approval
Eastern Edison Company	8/98	Montaup Electric Company	D.T.E. 98-83	Marketing for divestiture of its generation business.
Boston Edison Company	98	Boston Edison Company	D.T.E. 97-113	Fossil Generation Divestiture
Boston Edison Company	2/99	Boston Edison Company	D.T.E. 98-119	Nuclear Generation Divestiture
Eastern Edison Company	12/98	Montaup Electric Company	D.T.E. 99-9	Sale of Nuclear Plant
NStar	9/07, 12/07	NStar, Bay State Gas, Fitchburg G&E, NE Gas, W. MA Electric	DPU 07-50	Decoupling, risk
NStar	6/11	NStar, Northeast Utilities	DPU 10-170	Merger approval

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 9 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
Mass. Energy Facilities Siting Council				
Mass. Institute of Technology	1/89	M.M.W.E.C.	EFSC-88-1	Least-Cost Planning
Boston Edison Company	9/90	Boston Edison	EFSC-90-12	Electric Generation Mkts
Silver City Energy Ltd. Partnership	11/91	Silver City Energy	D.P.U. 91-100	State Policies; Need for Facility
Michigan Public Service Commission				
Detroit Edison Company	9/98	Detroit Edison Company	Case No. U-11726	Market Value of Generation Assets
Consumers Energy Company	8/06, 1/07	Consumers Energy Company	Case No. U-14992	Sale of Nuclear Plant
WE Energies	12/11	Wisconsin Electric Power Co	Case No. U-16830	Economic Benefits/Prudence
Consumer Energy Company	6/2013	Consumers Energy Company	Case No. U-17429	Certificate of Need, Integrated Resource Plan
Minnesota Public Utilities Commission				
Xcel Energy/No. States Power	9/04	Xcel Energy/No. States Power	Docket No. G002/GR-04-1511	NRG Impacts
Interstate Power and Light	8/05	Interstate Power and Light and FPL Energy Duane Arnold, LLC	Docket No. E001/PA-05-1272	Sale of Nuclear Plant
Northern States Power Company d/b/a Xcel Energy	11/05	Northern States Power Company	Docket No. E002/GR-05-1428	NRG Impacts on Debt Costs
Northern States Power Company d/b/a Xcel Energy	09/06, 10/06, 11/06	NSP v. Excelsior	Docket No. E6472/M-05-1993	PPA, Financial Impacts

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 10 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
Northern States Power Company d/b/a Xcel Energy	11/06	Northern States Power Company	Docket No. G002/GR-06-1429	Return on Equity
Northern States Power	11/08, 05/09	Northern States Power Company	Docket No. E002/GR-08-1065	Return on Equity
Northern States Power	11/09 6/10	Northern States Power Company	Docket No. G002/GR-09-1153	Return on Equity
Northern States Power	11/10, 5/11	Northern States Power Company	Docket No. E002/GR-10-971	Return on Equity
Missouri Public Service Commission				
Missouri Gas Energy	1/03 04/03	Missouri Gas Energy	Case No. GR-2001- 382	Gas Purchasing Practices; Prudence
Aquila Networks	2/04	Aquila-MPS, Aquila_L&P	Case Nos. ER-2004- 0034 HR-2004-0024	Cost of Capital, Capital Structure
Aquila Networks	2/04	Aquila-MPS, Aquila_L&P	Case No. GR-2004- 0072	Cost of Capital, Capital Structure
Missouri Gas Energy	11/05 2/06 7/06	Missouri Gas Energy	Case Nos. GR-2002- 348 GR-2003-0330	Capacity Planning
Missouri Gas Energy	11/10, 1/11	KCP&L	Case No. ER-2010- 0355	Natural Gas DSM
Missouri Gas Energy	11/10, 1/11	KCP&L GMO	Case No. ER-2010- 0356	Natural Gas DSM
Laclede Gas Company	5/11	Laclede Gas Company	Case No. CG-2011- 0098	Affiliate Pricing Standards
Union Electric Company d/b/a Ameren Missouri	2/12, 8/12	Union Electric Company	Case. No. ER-2012- 0166	ROE/earnings attrition/regulatory lag

Docket No. 140009-EI
Expert Testimony of John J. Reed
Exhibit JJR-2, Page 11 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Montana Public Service Commission				
Great Falls Gas Company	10/82	Great Falls Gas Company	Docket No. 82-4-25	Gas Rate Adjust. Clause
Nat. Energy Board of Canada				
Alberta-Northeast	2/87	Alberta Northeast Gas Export Project	Docket No. GH-1-87	Gas Export Markets
Alberta-Northeast	11/87	TransCanada Pipeline	Docket No. GH-2-87	Gas Export Markets
Alberta-Northeast	1/90	TransCanada Pipeline	Docket No. GH-5-89	Gas Export Markets
Indep. Petroleum Association of Canada	1/92	Interprovincial Pipe Line, Inc.	RH-2-91	Pipeline Valuation, Toll
The Canadian Association of Petroleum Producers	11/93	Transmountain Pipe Line	RH-1-93	Cost of Capital
Alliance Pipeline L.P.	6/97	Alliance Pipeline L.P.	GH-3-97	Market Study
Maritimes & Northeast Pipeline	97	Sable Offshore Energy Project	GH-6-96	Market Study
Maritimes & Northeast Pipeline	2/02	Maritimes & Northeast Pipeline	GH-3-2002	Natural Gas Demand Analysis
TransCanada Pipelines	8/04	TransCanada Pipelines	RH-3-2004	Toll Design
Brunswick Pipeline	5/06	Brunswick Pipeline	GH-1-2006	Market Study
TransCanada Pipelines Ltd.	12/06, 04/07	TransCanada Pipelines Ltd.: Gros Cacouna Receipt Point Application	RH-1-2007	Toll Design
Repsol Energy Canada Ltd	3/08	Repsol Energy Canada Ltd	GH-1-2008	Market Study
Maritimes & Northeast Pipeline	7/10	Maritimes & Northeast Pipeline	RH-4-2010	Regulatory policy, toll development
TransCanada Pipelines Ltd	9/11, 5/12	TransCanada Pipelines Ltd.	RH-3-2011	Business Services and Tolls Application

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JFR-2, Page 12 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
Trans Mountain Pipeline LLC	6/12, 1/13	Trans Mountain Pipeline LLC	RH-1-2012	Toll Design
TransCanada Pipelines Ltd	8/13	TransCanada Pipelines Ltd	RE-001-2013	Toll Design
NOVA Gas Transmission Ltd	11/13	NOVA Gas Transmission Ltd	OF-Fac-Gas-N081-2013-10 01	Toll Design
Trans Mountain Pipeline LLC	12/13	Trans Mountain Pipeline LLC	OF-Fac-Oil-T260-2013-03 01	Economic and Financial Feasibility and Project Benefits
New Brunswick Energy and Utilities Board				
Atlantic Wallboard/JD Irving Co	1/08	Enbridge Gas New Brunswick	MCTN #298600	Rate Setting for EGNB
Atlantic Wallboard/Flakeboard	09/09, 6/10, 7/10	Enbridge Gas New Brunswick	NBEUB 2009-017	Rate Setting for EGNB
Atlantic Wallboard/Flakeboard	1/14	Enbridge Gas New Brunswick	NBEUB Matter 225	Rate Setting for EGNB
NH Public Utilities Commission				
Bus & Industry Association	6/89	P.S. Co. of New Hampshire	Docket No. DR89-091	Fuel Costs
Bus & Industry Association	5/90	Northeast Utilities	Docket No. DR89-244	Merger & Acq. Issues
Eastern Utilities Associates	6/90	Eastern Utilities Associates	Docket No. DF89-085	Merger & Acq. Issues
EnergyNorth Natural Gas	12/90	EnergyNorth Natural Gas	Docket No. DE90-166	Gas Purchasing Practices

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 13 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
EnergyNorth Natural Gas	7/90	EnergyNorth Natural Gas	Docket No. DR90-187	Special Contracts, Discounted Rates
Northern Utilities, Inc.	12/91	Commission Investigation	Docket No. DR91-172	Generic Discounted Rates
New Jersey Board of Public Utilities				
Hilton/Golden Nugget	12/83	Atlantic Electric	B.P.U. 832-154	Line Extension Policies
Golden Nugget	3/87	Atlantic Electric	B.P.U. No. 837-658	Line Extension Policies
New Jersey Natural Gas	2/89	New Jersey Natural Gas	B.P.U. GR89030335J	Cost Alloc./Rate Design
New Jersey Natural Gas	1/91	New Jersey Natural Gas	B.P.U. GR90080786J	Cost Alloc./Rate Design
New Jersey Natural Gas	8/91	New Jersey Natural Gas	B.P.U. GR91081393J	Rate Design; Weather Norm. Clause
New Jersey Natural Gas	4/93	New Jersey Natural Gas	B.P.U. GR93040114J	Cost Alloc./Rate Design
South Jersey Gas	4/94	South Jersey Gas	BRC Dock No. GR080334	Revised levelized gas adjustment
New Jersey Utilities Association	9/96	Commission Investigation	BPU AX96070530	PBOP Cost Recovery
Morris Energy Group	11/09	Public Service Electric & Gas	BPU GR 09050422	Discriminatory Rates
New Jersey American Water Co.	4/10	New Jersey American Water Co.	BPU WR 1040260	Tariff Rates and Revisions
Electric Customer Group	01/11	Generic Stakeholder Proceeding	BPU GR10100761 and ER10100762	Natural gas ratemaking standards and pricing
New Mexico Public Service Commission				
Gas Company of New Mexico	11/83	Public Service Co. of New Mexico	Docket No. 1835	Cost Alloc./Rate Design
Southwestern Public Service Co., New Mexico	12/12	SPS New Mexico	Case No. 12-00350-UT	Rate Case, Return on Equity

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 14 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
New York Public Service Commission				
Iroquois Gas. Transmission	12/86	Iroquois Gas Transmission System	Case No. 70363	Gas Markets
Brooklyn Union Gas Company	8/95	Brooklyn Union Gas Company	Case No. 95-6-0761	Panel on Industry Directions
Central Hudson, ConEdison and Niagara Mohawk	9/00	Central Hudson, ConEdison and Niagara Mohawk	Case No. 96-E-0909 Case No. 96-E-0897 Case No. 94-E-0098 Case No. 94-E-0099	Section 70, Approval of New Facilities
Central Hudson, New York State Electric & Gas, Rochester Gas & Electric	5/01	Joint Petition of NiMo, NYSEG, RG&E, Central Hudson, Constellation and Nine Mile Point	Case No. 01-E-0011	Section 70, Rebuttal Testimony
Rochester Gas & Electric	12/03	Rochester Gas & Electric	Case No. 03-E-1231	Sale of Nuclear Plant
Rochester Gas & Electric	01/04	Rochester Gas & Electric	Case No. 03-E-0765 Case No. 02-E-0198 Case No. 03-E-0766	Sale of Nuclear Plant; Ratemaking Treatment of Sale
Rochester Gas and Electric and NY State Electric & Gas Corp	2/10	Rochester Gas & Electric NY State Electric & Gas Corp	Case No. 09-E-0715 Case No. 09-E-0716 Case No. 09-E-0717 Case No. 09-E-0718	Depreciation policy
Nova Scotia Utility and Review Board				
Nova Scotia Power	9/12	Nova Scotia Power	Docket No. P-893	Audit Reply

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 15 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
Oklahoma Corporation Commission				
Oklahoma Natural Gas Company	6/98	Oklahoma Natural Gas Company	Case PUD No. 980000177	Storage issues
Oklahoma Gas & Electric Company	9/05	Oklahoma Gas & Electric Company	Cause No. PUD 200500151	Prudence of McLain Acquisition
Oklahoma Gas & Electric Company	03/08	Oklahoma Gas & Electric Company	Cause No. PUD 200800086	Acquisition of Redbud generating facility
Ontario Energy Board				
Market Hub Partners Canada, L.P.	5/06	Natural Gas Electric Interface Roundtable	File No. EB-2005-0551	Market-based Rates For Storage
Pennsylvania Public Utility Commission				
ATOC	4/95	Equitrans	Docket No. R-00943272	Rate Design, unbundling
ATOC	3/96 4/96	Equitrans	Docket No. P-00940886	Rate Design, unbundling
Rhode Island Public Utilities Commission				
Newport Electric	7/81	Newport Electric	Docket No. 1599	Rate Attrition
South County Gas	9/82	South County Gas	Docket No. 1671	Cost of Capital
New England Energy Group	7/86	Providence Gas Company	Docket No. 1844	Cost Alloc./Rate Design
Providence Gas	8/88	Providence Gas Company	Docket No. 1914	Load Forecast., Least-Cost Planning
Providence Gas Company and The Valley Gas Company	1/01 3/02	Providence Gas Company and The Valley Gas Company	Docket No. 1673 and 1736	Gas Cost Mitigation Strategy
The New England Gas Company	3/03	New England Gas Company	Docket No. 3459	Cost of Capital

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 16 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
Texas Public Utility Commission				
Southwestern Electric	5/83	Southwestern Electric		Cost of Capital, CWIP
P.U.C. General Counsel	11/90	Texas Utilities Electric Company	Docket No. 9300	Gas Purchasing Practices, Prudence
Oncor Electric Delivery Company	8/07	Oncor Electric Delivery Company	Docket No. 34040	Regulatory Policy, Rate of Return, Return of Capital and Consolidated Tax Adjustment
Oncor Electric Delivery Company	6/08	Oncor Electric Delivery Company	Docket No.35717	Regulatory policy
Oncor Electric Delivery Company	10/08, 11/08	Oncor, TCC, TNC, ETT, LCRA TSC, Sharyland, STEC, TNMP	Docket No. 35665	Competitive Renewable Energy Zone
CenterPoint Energy	6/10 10/10	CenterPoint Energy/Houston Electric	Docket No. 38339	Regulatory policy, risk, consolidated taxes
Oncor Electric Delivery Company	1/11	Oncor Electric Delivery Company	Docket No. 38929	Regulatory policy, risk
Cross Texas Transmission	08/12 11/12	Cross Texas Transmission	Docket No. 40604	Return on Equity
Southwestern Public Service	11/12	Southwestern Public Service	Docket No. 40824	Return on Equity
Texas Railroad Commission				
Western Gas Interstate Company	1/85	Southern Union Gas Company	Docket 5238	Cost of Service
Atmos Pipeline Texas	9/10; 1/11	Atmos Pipeline Texas	GUD 10000	Ratemaking Policy, risk

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 17 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Texas State Legislature				
CenterPoint Energy	4/13	Association of Electric Companies of Texas	SB 1364	Consolidated Tax Adjustment Clause Legislation
Utah Public Service Commission				
AMAX Magnesium	1/88	Mountain Fuel Supply Company	Case No. 86-057-07	Cost Alloc./Rate Design
AMAX Magnesium	4/88	Utah P&L/Pacific P&L	Case No. 87-035-27	Merger & Acquisition
Utah Industrial Group	7/90 8/90	Mountain Fuel Supply	Case No. 89-057-15	Gas Transportation Rates
AMAX Magnesium	9/90	Utah Power & Light	Case No. 89-035-06	Energy Balancing Account
AMAX Magnesium	8/90	Utah Power & Light	Case No. 90-035-06	Electric Service Priorities
Questar Gas Company	12/07	Questar Gas Company	Docket No. 07-057-13	Benchmarking in support of ROE
Vermont Public Service Board				
Green Mountain Power	8/82	Green Mountain Power	Docket No. 4570	Rate Attrition
Green Mountain Power	12/97	Green Mountain Power	Docket No. 5983	Cost of Service
Green Mountain Power	7/98, 9/00	Green Mountain Power	Docket No. 6107	Rate development

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 18 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Wisconsin Public Service Commission				
WEC & WICOR	11/99	WEC	Docket No. 9401-YO-100 Docket No. 9402-YO-101	Approval to Acquire the Stock of WICOR
Wisconsin Electric Power Company	1/07	Wisconsin Electric Power Co.	Docket No. 6630-EI-113	Sale of Nuclear Plant
Wisconsin Electric Power Company	10/09	Wisconsin Electric Power Co.	Docket No. 6630-CE-302	CPCN Application for wind project
Northern States Power Wisconsin	10/13	Xcel Energy (dba Northern States Power Wisconsin)	Docket No. 4220-UR-119	Fuel Cost Adjustments

Docket No. 140009-EI
Expert Testimony of John J. Reed
Exhibit JJR-2, Page 19 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET No.	SUBJECT
American Arbitration Association				
Michael Polsky	3/91	M. Polsky vs. Indeck Energy		Corporate Valuation, Damages
ProGas Limited	7/92	ProGas Limited v. Texas Eastern		Gas Contract Arbitration
Attala Generating Company	12/03	Attala Generating Co v. Attala Energy Co.	Case No. 16-Y-198-00228-03	Power Project Valuation; Breach of Contract; Damages
Nevada Power Company	4/08	Nevada Power v. Nevada Cogeneration Assoc. #2		Power Purchase Agreement
Sensata Technologies, Inc./EMS Engineered Materials Solutions, LLC	1/11	Sensata Technologies, Inc./EMS Engineered Materials Solutions, LLC v. Pepco Energy Services	Case No. 11-198-Y-00848-10	Change in usage dispute/damages
Commonwealth of Massachusetts, Suffolk Superior Court				
John Hancock	1/84	Trinity Church v. John Hancock	C.A. No. 4452	Damages Quantification
State of Colorado District Court, County of Garfield				
Questar Corporation, et al	11/00	Questar Corporation, et al.	Case No. 00CV129-A	Partnership Fiduciary Duties
State of Delaware, Court of Chancery, New Castle County				
Wilmington Trust Company	11/05	Calpine Corporation vs. Bank Of New York and Wilmington Trust Company	C.A. No. 1669-N	Bond Indenture Covenants

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 20 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Illinois Appellate Court, Fifth Division				
Norweb, plc	8/02	Indeck No. America v. Norweb	Docket No. 97 CH 07291	Breach of Contract; Power Plant Valuation
Independent Arbitration Panel				
Alberta Northeast Gas Limited	2/98	ProGas Ltd., Canadian Forest Oil Ltd., AEC Oil & Gas		
Ocean State Power	9/02	Ocean State Power vs. ProGas Ltd.	2001/2002 Arbitration	Gas Price Arbitration
Ocean State Power	2/03	Ocean State Power vs. ProGas Ltd.	2002/2003 Arbitration	Gas Price Arbitration
Ocean State Power	6/04	Ocean State Power vs. ProGas Ltd.	2003/2004 Arbitration	Gas Price Arbitration
Shell Canada Limited	7/05	Shell Canada Limited and Nova Scotia Power Inc.		Gas Contract Price Arbitration
International Court of Arbitration				
Wisconsin Gas Company, Inc.	2/97	Wisconsin Gas Co. vs. Pan-Alberta	Case No. 9322/CK	Contract Arbitration
Minnegasco, A Division of NorAm Energy Corp.	3/97	Minnegasco vs. Pan-Alberta	Case No. 9357/CK	Contract Arbitration
Utilicorp United Inc.	4/97	Utilicorp vs. Pan-Alberta	Case No. 9373/CK	Contract Arbitration
IES Utilities	97	IES vs. Pan-Alberta	Case No. 9374/CK	Contract Arbitration

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 21 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
State of New Jersey, Mercer County Superior Court				
Transamerica Corp., et. al.	7/07, 10/07	IMO Industries Inc. vs. Transamerica Corp., et. al.	Docket No. L-2140- 03	Breach-Related Damages, Enterprise Value
State of New York, Nassau County Supreme Court				
Steel Los III, LP	6/08	Steel Los II, LP & Associated Brook, Corp v. Power Authority of State of NY	Index No. 5662/05	Property seizure
Province of Alberta, Court of Queen's Bench				
Alberta Northeast Gas Limited	5/07	Cargill Gas Marketing Ltd. vs. Alberta Northeast Gas Limited	Action No. 0501- 03291	Gas Contracting Practices
State of Rhode Island, Providence City Court				
Aquidneck Energy	5/87	Laroche vs. Newport		Least-Cost Planning
State of Texas Hutchinson County Court				
Western Gas Interstate	5/85	State of Texas vs. Western Gas Interstate Co.	Case No. 14,843	Cost of Service
State of Texas District Court of Nueces County				
Northwestern National Insurance Company	11/11	ASARCO LLC	No. 01-2680-D	Damages

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 22 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
State of Utah Third District Court				
PacifiCorp & Holme, Roberts & Owen, LLP	1/07	USA Power & Spring Canyon Energy vs. PacifiCorp. et. al.	Civil No. 050903412	Breach-Related Damages
U.S. Bankruptcy Court, District of New Hampshire				
EUA Power Corporation	7/92	EUA Power Corporation	Case No. BK-91-10525-JEY	Pre-Petition Solvency
U.S. Bankruptcy Court, District Of New Jersey				
Ponderosa Pine Energy Partners, Ltd.	7/05	Ponderosa Pine Energy Partners, Ltd.	Case No. 05-21444	Forward Contract Bankruptcy Treatment
U.S. Bankruptcy Court, No. District of New York				
Cayuga Energy, NYSEG Solutions, The Energy Network	09/09	Cayuga Energy, NYSEG Solutions, The Energy Network	Case No. 06-60073-6-sdg	Going concern
U.S. Bankruptcy Court, So. District Of New York				
Johns Manville	5/04	Enron Energy Mktg. v. Johns Manville; Enron No. America v. Johns Manville	Case No. 01-16034 (AJG)	Breach of Contract; Damages

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 23 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
U.S. Bankruptcy Court, Northern District Of Texas				
Southern Maryland Electric Cooperative, Inc. and Potomac Electric Power Company	11/04	Mirant Corporation, et al. v. SMECO	Case No. 03-4659; Adversary No. 04-4073	PPA Interpretation; Leasing
U. S. Court of Federal Claims				
Boston Edison Company	7/06, 11/06	Boston Edison v. Department of Energy	No. 99-447C No. 03-2626C	Spent Nuclear Fuel Litigation
Consolidated Edison of New York	08/07	Consolidated Edison of New York, Inc. and subsidiaries v. United States	No. 06-305T	Leasing, tax dispute
Consolidated Edison Company	2/08, 6/08	Consolidated Edison Company v. United States	No. 04-0033C	SNF Expert Report
Vermont Yankee Nuclear Power Corporation	6/08	Vermont Yankee Nuclear Power Corporation	No. 03-2663C	SNF Expert Report
U. S. District Court, Boulder County, Colorado				
KN Energy, Inc.	3/93	KN Energy vs. Colorado GasMark, Inc.	Case No. 92 CV 1474	Gas Contract Interpretation
U. S. District Court, Northern California				
Pacific Gas & Electric Co./PGT PG&E/PGT Pipeline Exp. Project	4/97	Norcen Energy Resources Limited	Case No. C94-0911 VRW	Fraud Claim

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 24 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
U. S. District Court, District of Connecticut				
Constellation Power Source, Inc.	12/04	Constellation Power Source, Inc. v. Select Energy, Inc.	Civil Action 304 CV 983 (RNC)	ISO Structure, Breach of Contract
U.S. District Court, Northern District of Illinois, Eastern Division				
U.S. Securities and Exchange Commission	4/12	U.S. Securities and Exchange Commission v. Thomas Fisher, Kathleen Halloran, and George Behrens	Case No. 07 C 4483	Prudence, PBR
U. S. District Court, Massachusetts				
Eastern Utilities Associates & Donald F. Pardus	3/94	NECO Enterprises Inc. vs. Eastern Utilities Associates	Civil Action No. 92-10355-RCL	Seabrook Power Sales
U. S. District Court, Montana				
KN Energy, Inc.	9/92	KN Energy v. Freeport MacMoRan	Docket No. CV 91-40-BLG-RWA	Gas Contract Settlement
U.S. District Court, New Hampshire				
Portland Natural Gas Transmission and Maritimes & Northeast Pipeline	9/03	Public Service Company of New Hampshire vs. PNGTS and M&NE Pipeline	Docket No. C-02-105-B	Impairment of Electric Transmission Right-of-Way

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 25 of 26



SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
U. S. District Court, Southern District of New York				
Central Hudson Gas & Electric	11/99, 8/00	Central Hudson v. Riverkeeper, Inc., Robert H. Boyle, John J. Cronin	Civil Action 99 Civ 2536 (BDP)	Electric restructuring, environmental impacts
Consolidated Edison	3/02	Consolidated Edison v. Northeast Utilities	Case No. 01 Civ. 1893 (JGK) (HP)	Industry Standards for Due Diligence
Merrill Lynch & Company	1/05	Merrill Lynch v. Allegheny Energy, Inc.	Civil Action 02 CV 7689 (HB)	Due Diligence, Breach of Contract, Damages
U. S. District Court, Eastern District of Virginia				
Aquila, Inc.	1/05, 2/05	VPEN v. Aquila, Inc.	Civil Action 304 CV 411	Breach of Contract, Damages
U. S. District Court, Portland Maine				
ACEC Maine, Inc. et al.	10/91	CIT Financial vs. ACEC Maine	Docket No. 90-0304-B	Project Valuation
Combustion Engineering	1/92	Combustion Eng. vs. Miller Hydro	Docket No. 89-0168P	Output Modeling; Project Valuation
U.S. Securities and Exchange Commission				
Eastern Utilities Association	10/92	EUA Power Corporation	File No. 70-8034	Value of EUA Power
Council of the District of Columbia Committee on Consumer and Regulatory Affairs				
Potomac Electric Power Co.	7/99	Potomac Electric Power Co.	Bill 13-284	Utility restructuring

Docket No. 140009-EI
 Expert Testimony of John J. Reed
 Exhibit JJR-2, Page 26 of 26

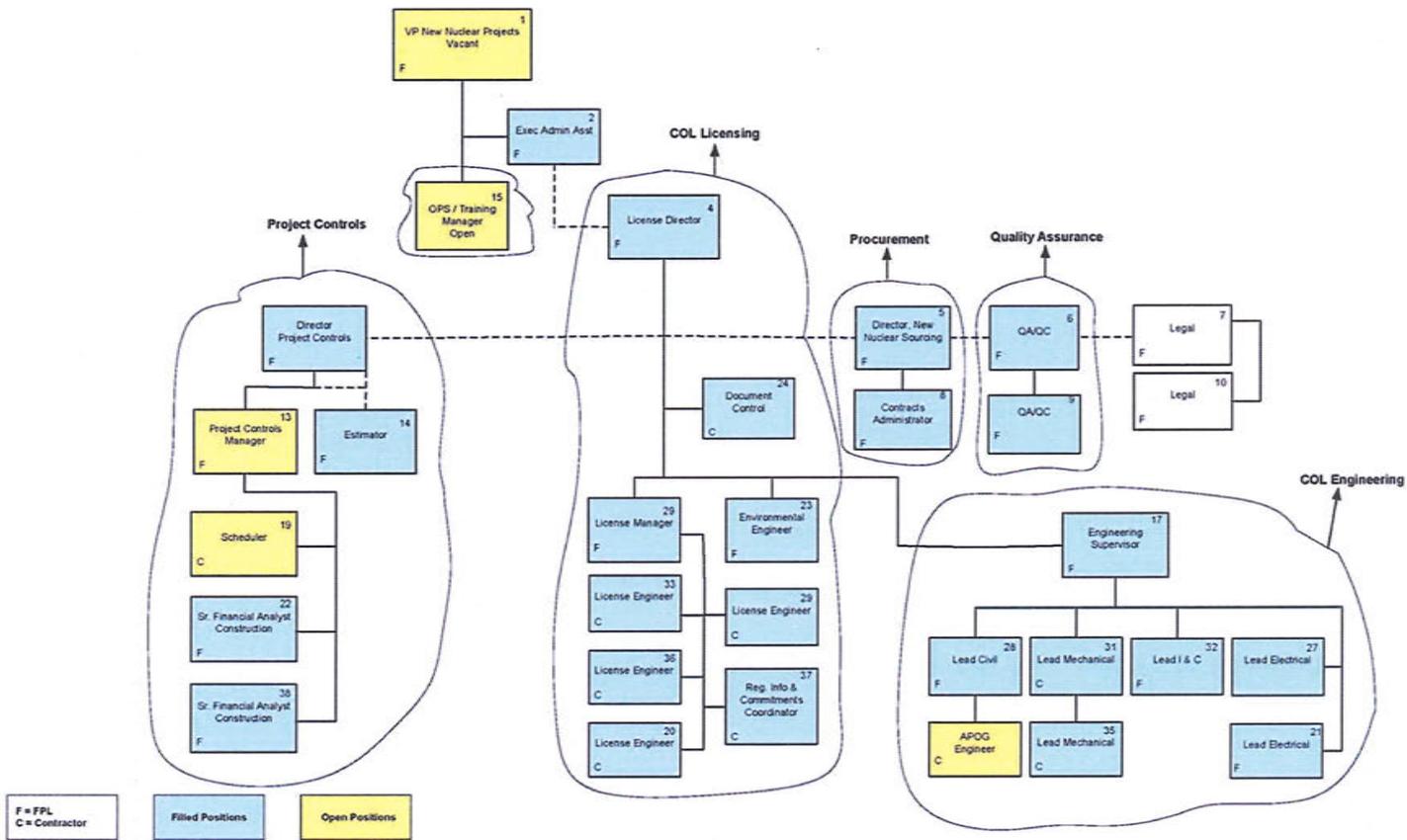
Index of the EPU Project's 2013 Periodic Meetings

Meetings

1. EPU Executive Steering Committee Meeting (meetings held or presentations delivered to the members and "one-off" meetings held with senior executives)
 - a. Occurs: quarterly (note, last meeting held in January 2013 as the EPU project implementation neared completion)
 - b. Attendees: EPU Executive Steering Committee
 - c. Purpose: overview of major project issues, costs, schedule and budget
2. Plan of the Day Accountability Meeting
 - a. Occurs: daily (outside of outages)
 - b. Attendees: Site representatives
 - c. Purpose: review and report daily work plans
3. Engineering and Construction Trend Review Meeting (PTN only in 2013)
 - a. Occurs: as needed (note, last PTN meetings held in February 2013 as the PTN Unit No. 4 outage neared completion)
 - b. Attendees: managers
 - c. Purpose: review and approve Change/Trend at site level
4. Monthly Cost Reviews
 - a. Occurs: monthly (note, last meeting held in June 2013)
 - b. Attendees: FPL management
 - c. Purpose: review incurred and forecasted project costs
5. Risk Review
 - a. Occurs: weekly (PTN only in 2013; note, last meeting held February 28, 2013)
 - b. Attendees: managers
 - c. Purpose: review and track identified project risks
6. FPL – Siemens meeting
 - a. Occurs: weekly (PTN only in 2013; discontinued in March 2013)
 - b. Attendees: EPU Management

- c. Purpose: review status of Siemens EPU scope
- 7. Bechtel Schedule and Cost Performance meeting (PTN only; discontinued in February 2013 as Bechtel demobilized)
 - a. Occurs: weekly (daily during outages)
 - b. Attendees: Bechtel and EPU management
 - c. Purpose: review of Bechtel's CPIs and SPIs
- 8. FPL Senior Management Meeting (Morning Call)
 - a. Occurs: daily (note, last meeting held in June 2013)
 - b. Attendees: VP, Implementation Owners, Site Directors, LAR Director, Controls Director, NCRI Manager, Project Controls Supervisors & invitees
 - c. Purpose: discussion of progress and issues
- 9. Project and Plant Integration meeting (PTN)
 - a. Occurs: weekly
 - b. Attendees: EPU project management and plant management
 - c. Purpose: project and plant integration
- 10. CNO Meeting
 - a. Occurs: approximately bi-monthly
 - b. Attendees: EPU Senior management
 - c. Purpose: report project status
- 11. Lead Team Meeting (PTN)
 - a. Occurs: Daily
 - b. Attendees: FPL Site EPU leadership team
 - c. Purpose: review progress and project execution
- 12. Outage Turnover Meeting (PTN only; note, discontinued in March 2013 as the PTN Unit No. 4 outage neared completion)
 - a. Occurs twice per day during outage period (merged with Plan of the Day Accountability Meeting in November 2012)
 - b. Attendees: Team Room Lead, Night / Day shift PM, Construction Manager
 - c. Purpose: Review status from one shift to the next

13. Project Closeout Meeting (PTN; began in March 2013 with last meeting held in December 2013)
 - a. Occurs: weekly
 - b. Attendees: FPL site EPU leadership team
 - c. Purpose: report status of project closeout activities
14. Shaw Schedule and Cost Performance Meeting (started in November 2012, and discontinued at PTN in February 2013, Shaw demobilized)
 - a. Occurs: weekly (daily during outages)
 - b. Attendees: Shaw and EPU management
 - c. Purpose: review of Shaw's CPIs and SPIs
15. Shaw Cost Review Meeting (discontinued at PTN in August 2013, Shaw demobilized)
 - a. Occurs: weekly
 - b. Attendees: Shaw and EPU management
 - c. Purpose: review of Shaw's cost report
16. Day and Zimmerman Cost Review Meeting (started at PTN in August 2013, last EPU meeting held in December 2013)
 - a. Occurs: weekly
 - b. Attendees: Day and Zimmerman and EPU management
 - c. Purpose: review of Day and Zimmerman's cost report
17. Williams Cost Review Meeting (discontinued at PTN in August 2013, last EPU meeting held in December 2013)
 - a. Occurs: weekly
 - b. Attendees: Williams and EPU management
 - c. Purpose: review of William's cost report



Turkey Point 6 & 7 Development Project Organization Licensing Phase

