BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear Cost Recovery Clause DOCKET NO. 100009 Submitted for filing: March 1, 2010

DIRECT TESTIMONY OF KENNETH KARP IN SUPPORT OF ACTUAL COSTS

ON BEHALF OF PROGRESS ENERGY FLORIDA

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		IN RE: NUCLEAR COST RECOVERY CLAUSE
		BY PROGRESS ENERGY FLORIDA
		FPSC DOCKET NO. 100009
		DIRECT TESTIMONY OF KENNETH KARP IN SUPPORT OF ACTUAL COSTS
1		I. INTRODUCTION AND QUALIFICATIONS
2	Q.	Please state your name and business address.
3	А.	My name is Kenneth Karp. My business address is 3300 Exchange Place,
4		Lake Mary, FL 32746.
5		
6	Q.	By whom are you employed and in what capacity?
7	A.	I am employed by Progress Energy Florida, Inc. ("PEF" or the
8		"Company") and my title is General Manager of Levy Baseload
9		Transmission Projects. In this role, I am responsible for leading a cross-
10		functional, multi-disciplinary team in the development and execution of
11		the transmission projects associated with the Levy Nuclear Plant.
12		
13	Q.	Please summarize your educational background and work experience.
14	А.	I have a bachelor's degree in civil engineering from the Old Dominio
15		University in 1982 and a MBA degree from the University of North
16		Carolina in 2000. I have been working in the electric utility industry for
17		over 27 years in various generation, transmission and distribution roles.
18		Prior to assuming my current role in January 2009, I was the General
19		Manager of Distribution for the eastern region of North Carolina for the

Company. From 2004 to 2006, I was the Distribution Operations Manager for the southern region in the Carolinas. From 2002 to 2004, I was the Transmission Substation Maintenance Supervisor for the eastern transmission area in North Carolina. Prior to this, I held a number of supervisory, project management and engineering positions within the Company and in consulting roles in the industry.

II. PURPOSE AND SUMMARY OF TESTIMONY

What is the purpose of your direct testimony?

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The purpose of my direct testimony is to support the Company's request for cost recovery, including the prudence of those costs, pursuant to the nuclear cost recovery rule for the transmission portion of the costs incurred from January 2009 through December 2009 that were related to the construction of the Company's proposed Levy Nuclear Power Plants.

Do you have any exhibits to your testimony?

No. I am, however, sponsoring the cost portions of Schedules T-4, T-4A, T-6, T-6A, T-6B, and Appendix B, as well as portions of Schedules T-7, T-7A, and T-7B of the Nuclear Filing Requirements ("NFRs"), which are included as part of the exhibits to Will Garrett's testimony. Specifically, I am sponsoring those portions, related to transmission, of Schedule T-6, which provide actual monthly expenditures for site selection, preconstruction and construction costs. I also sponsor the transmission portion (Lines 10 – 15) of Schedule T-7, which lists the contracts executed

in excess of \$1.0 million through the end of 2009. Accordingly, I sponsor pages 48 to 53 of Schedule T-7A, which reflects details pertaining to the contracts executed in excess of \$1.0 million. I am also sponsoring the transmission portion (Lines 11 - 14) of Schedule T-7B which lists the contracts between \$250,000 and \$1.0 million that were executed through the end of 2009.

All of the portions of these schedules, which I sponsor, are true and accurate.

Q. Please summarize your testimony.

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A.

PEF incurred pre-construction and construction costs from January 2009 to December 2009 to complete the work required to site the proposed transmission lines and substations and to complete the necessary analysis and design work required for the Levy Nuclear Project ("LNP"). More specifically, the Levy Transmission Project Team worked on establishing State and Federal licensing, program and project schedules and cost estimates, staffing and resource plans, external outreach and communications, project designs, transmission line route selection, land acquisition, and permitting activities. As demonstrated in my testimony and the NFR schedules attached to Mr. Garrett's testimony, PEF took steps to ensure that the preconstruction and construction costs for these LNP transmission activities were reasonable and prudent. Accordingly, for all the reasons provided in my testimony and in the NFR schedules, the Commission should approve PEF's transmission preconstruction and

1 construction costs incurred in 2009 as reasonable and prudent pursuant to 2 the nuclear cost recovery rule. 3 4 **III. CAPITAL COSTS INCURRED IN 2009 FOR LEVY NUCLEAR PLANT** 5 Q. Before describing what costs were incurred in 2009, can you describe 6 what transmission work and activities were performed in 2009 to ÷., 7 generate these costs? 8 Yes. The 2009 LNP transmission work and activities included the Α. 9 following: **Regulatory and Licensing** 10 11 PEF submitted the transmission line portion of the Florida State 12 Site Certification Application ("SCA") to the Florida Department of 13 Environmental Protection ("FDEP") in June of 2008. PEF and other 14 parties submitted testimony, and the licensing hearings and public hearing 15 were completed in March 2009. The State Siting Board granted 16 certification of the project on August 11, 2009. 17 In July of 2008, PEF submitted the Combined Operating License application ("COLA") to the Nuclear Regulatory Commission ("NRC"). 18 19 In March of 2009, the U.S. Army Corp of Engineers ("USACOE") issued 20 Public Notice of the project. Levy Transmission Project Team has 21 assisted in responding to several requests for information from the NRC 22 and USACOE during 2009.

Project Management and Execution

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During 2009, PEF completed baseline schedules and costs estimates for the program and some of the projects contained in the program. PEF also established project control metrics which included cost, schedule, safety, compliance and risk metrics. The project managers and project team continuously reviewed these metrics and presented them to senior management on a monthly basis. In addition, PEF established policy and governance procedures for right-of-way acquisition activities.

The Company completed laser mapping ("LiDAR") of the proposed rights of way, and incorporated this data as the base map for the project Geographic Information System ("GIS").

Construction

PEF completed construction on the first phase of the Crystal River Energy Complex ("CREC") Substation upgrades. Specifically, PEF finished designs, issued and awarded bids, and installed the three (3) new Extra High Voltage ("EHV") 500 kV switches in the existing CREC 500 kV switchyard during the fall 2009 planned outage.

Outreach and External Communications

In addition to the numerous public meetings held in 2008, PEF conducted six (6) community "Open House" sessions in early 2009. These sessions presented information about the projects and the proposed transmission line routes in nine (9) counties. The Company sent approximately twenty-thousand direct mailings inviting local residents,

elected officials, community leaders, agencies and other stakeholders to these sessions.

PEF established a web site that allows the public to obtain information and status of the projects. The web site also has an interactive mapping feature that allows the public to determine the proximity of their property to the proposed transmission corridors and routes. The Company also maintained multiple customer communication channels dedicated to allowing customers to ask and receive responses to any public issues, questions and concerns. Customers could call into a toll free number and speak to a trained associate or use email. Throughout 2009 the external relations team received and responded to phone calls, emails and letters requesting information about the projects.

The external relations team held numerous meetings and made presentations to many key stakeholders, including home owner associations, affected property owners and special interest groups.

Engineering and Design

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PEF performed the analysis for the Levy Nuclear Plant and its impact on the Florida bulk transmission system in accordance with NRC regulations, Federal Energy Regulatory Commission ("FERC") Large Generation Interconnection rules, North American Electric Reliability Corporation ("NERC") / Florida Reliability Coordinating Council ("FRCC") Reliability Standards, and Progress Energy Florida Interconnection Requirements. The resulting report and FRCC

concurrence confirmed the scope requirements for the Levy Transmission program.

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The engineering team completed a conductor study and a structure study. The conductor study provided technical analyses to support the selection of the 500kV and 230kV conductors for the Levy Baseload Transmission program. The structure study provided an engineering analysis of technical, cost, maintenance considerations to assist in selecting a 500kV structure type. The team also completed Specifications for the EHV equipment and standard design criteria for the proposed EHV systems.

PEF completed preliminary design packages (that is, design packages in which designs are considered 30% complete) for several projects including:

 The 50 mile long 230 kV line that runs from Pinellas to Polk County.

- The two 69/13 kV substations and associated line interconnect work that will be constructed on the Levy Plant site.
- 3. The layout and construction sequencing plans for the work required at the existing Crystal River Energy Complex.
- The verification of existing protection systems at the Crystal River Energy Complex switchyards.

Right of Way ("ROW") and Land Acquisition

PEF completed the route selection studies and received management approval on the preferred transmission routes and the final report. These studies identify the best evaluated and preferred rights of way for the proposed transmission lines. The route selection process included a systematic evaluation of potential routes within the certified corridors. This evaluation used siting criteria that incorporated environmental, land use, design, safety and cost considerations. The evaluation included quantitative measures of twenty-two (22) criteria including the number of adjacent residential dwellings, acres of wetlands potentially affected by the route, and other factors. Quantitative evaluations were used to identify and rank candidate routes. After the quantitative evaluation was complete, the project team conducted a qualitative evaluation on the highest ranking routes. The qualitative evaluation was conducted to take into account other factors not previously measured quantitatively, such as an assessment of potential impacts to property, compliance with health and safety requirements, reliability, and consistency with information gathered through the public outreach process. After the quantitative and qualitative analyses were complete, the final preferred routes were identified. In 2009, PEF acquired approximately two miles of new transmission line ROW connecting the Levy plant site and the proposed substation in Sumter County.

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The Company completed wetland, habitat and cultural resource surveys on the substation sites and the majority of the preferred transmission ROWs identified in the route study. This was done in order to support data requirements for the State Conditions of Certification and the USACOE permitting. These surveys were completed on public and

1 private lands. In addition, the Company approved parcel maps for the 2 proposed right of ways to support the strategic land rights acquisition plan. 3 Q. 4 Did the Company incur transmission-related Site Selection/Pre-5 construction costs for this transmission work and activity for the Levy Nuclear Plant in 2009? 6 7 Α. Yes, as reflected on Schedule T-6, the Company incurred Site 8 Selection/Preconstruction costs in the categories of Line Engineering, Substation Engineering, and Other. 9 10 11 **Q**. For the Line Engineering costs, please identify what those costs are 12 and why the Company had to incur them. 13 Α. As reflected on line 17 of Schedule T-6.2, the Company incurred Line 14 Engineering costs of \$3,501,699. These costs include the preliminary 15 engineering design of the transmission lines and facilities. This 16 engineering work identified the typical size, type, and general locations of 17 various options for the transmission lines and substation facilities 18 necessary to successfully and reliably accommodate the additional power 19 from Levy Units 1 and 2 on PEF's system and to reliably incorporate the 20 plants into the PEF transmission system and the state-wide electric grid. 21 As stated above, PEF completed preliminary design packages on a number 22 of transmission line projects. PEF also completed engineering studies and 23 specifications for the EHV equipment and standard design criteria for the 24 proposed EHV systems. The Company also incurred Line Engineering

costs in 2009 for engineering services to support the review, analysis and revisions as needed to refine associated scopes, cost estimates, and schedules for the Levy Transmission Program's discrete line projects. This work included the review and analysis to support the development of design criteria and specifications for the Levy Transmission Program and engineering support for addressing external and internal Requests for Information ("RFI") or Requests for Proposals ("RFP") by providing documentation, figures, drawings, and reports. This work allowed the Company to refine the scope, expected schedules, and costs of the proposed system facilities and facility upgrades.

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For the Substation Engineering costs, please identify what those costs are and why the Company had to incur them.

As reflected on line 18 of Schedule T-6.2, the Company incurred Substation Engineering costs of \$2,638,838.

These costs included the preliminary engineering design and engineering detail work for substations. This work was necessary to identify the number of substations, their general location, size and equipment needs required to incorporate the Levy nuclear power plants into the PEF transmission system and the state-wide electric grid. PEF completed preliminary design packages on a number of substation projects during 2009.

Substation engineering costs in 2009 included engineering services to support the review, analysis, and revisions to all associated scopes, cost

estimates, and schedules for the Levy Transmission program's individual substation and relay and protection projects, particularly design work associated with the CREC substation expansion and ultimate layout design. This work also included the review, analysis, and implementation of technical studies to support the development of design criteria and specifications and to provide assistance for the Levy Transmission program's engineering quantitative and qualitative efforts to support external and internal RFIs or RFPs by providing documentation, figures, drawings and reports.

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For the "Other" costs, please identify what those costs are and why the Company had to incur them.

As reflected on line 20 of Schedule T-6.2, the Company incurred "Other" costs of \$4,870,120. These costs included project management, project scheduling, development of contracting strategies and related overhead, public outreach/open house activities, legal services, and other miscellaneous costs associated with planning and siting the transmission projects for the LNP.

To explain further, the Company incurred these costs: (1) working with the public and governmental agencies to incorporate their comments into the corridor and route selection studies and include their input in the selection of the proposed transmission corridors; (2) reviewing and providing input to the corridor and routing selection processes and the SCA and COLA applications; and (3) performing project management and

scheduling activities, external and community relations support, and consulting support for the development of contracting strategies, which could not be directly attributable to Line Engineering or Substation Engineering.

How did actual Site Selection/Pre-construction capital expenditures for January 2009 through December 2009 compare to PEF's estimated/actual projection for 2009?

Line Engineering and Substation Engineering costs were lower than PEF projected while Other costs were slightly higher than PEF projected. Other costs were \$218,937 over the estimated/actual projection. Clearing was \$8,853 under. I will explain the reasons for the major (more than \$1 million) variances below.

Line Engineering:

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Line Engineering capital expenditures were \$3,501,699 which was \$2,629,712 under the estimated/actual projection. This variance was primarily driven by the May 2009 shift in the Levy Project schedule by a minimum of 20 months. This schedule shift resulted in a change in project scope and re-sequencing of line engineering activities and project staffing requirements. Engineering work was also deferred to align with schedule activity/refinement and coordination with the planned completion of environmental licensing activities. This resulted in lower than projected costs.

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Substation Engineering:

Substation Engineering capital expenditures were \$2,638,838 which was \$2,581,688 under the estimated/actual projection. This variance was primarily driven by the May 2009 shift in the Levy Project schedule by a minimum of 20 months. This schedule shift resulted in expected engineering work and project staffing requirements to support work on the Levy Plant Administrative substations and other existing substations being re-sequenced and deferred to align with schedule activity/refinements and coordination with the planned completion of environmental licensing activities. This resulted in lower than projected costs.

Q. Did the Company incur any transmission-related Construction costs for the transmission work and activities you identified for the Levy Nuclear Plant in 2009?

Yes, as reflected on Schedule T-6.3, the Company incurred Construction costs in the categories of Real Estate Acquisition, Substation Construction, Substation Engineering and Other.

Q. For the Real Estate Acquisition costs, please identify what those costs are and why the Company had to incur them.

 A. As reflected on line 21 of Schedule T-6.3, the Company incurred Real Estate Acquisition costs of \$1,783,996. These costs included acquisition of approximately two miles of new transmission line right of way connecting the Levy plant site and the proposed substation in Sumter

County. These real estate acquisition costs included the siting, survey, appraisals, title commitments, permitting, ordinance review, legal and related costs.

Q. For the Substation Construction costs, please identify what those costs are and why the Company had to incur them.

A. As reflected on line 23 of Schedule T-6.3, the Company incurred Substation Construction costs of \$938,615. These costs included contract labor and procurement of equipment and materials to install three (3) new EHV 500 kV switches into the existing CREC 500 kV switchyard during the last unit outage of 2009. These costs were necessary based on discussions with Crystal River plant and planning personnel that construction activity at the CREC site could only occur during certain plant outages. This resulted in phasing of the planned work to correspond with the last CREC plant unit outage in 2009.

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For the Other costs, please identify what those costs are and why the Company had to incur them.

As reflected on line 24 of Schedule T-6.3, the Company incurred Other costs of \$570,758. These costs include company and contract labor, expenses and related indirect and overhead costs needed to support the Levy Transmission Program.

Q. How did actual Construction capital expenditures for January 2009 through December 2009 compare to PEF's estimated/actual projection for 2009 costs?

 A. Real Estate Acquisition and Substation Construction costs were lower than PEF projected, while Substation Engineering and Other costs were higher than PEF projected. I will explain the reasons for the major (more than \$1 million) variances below.

Α.

Real Estate Acquisition:

Real Estate Acquisition capital expenditures were \$1,783,996 which was \$21,161,939 under the estimated/actual projection. This variance was primarily driven by the May 2009 shift in the Levy Project schedule by a minimum of 20 months. The land acquisition plan was re-evaluated in light of the schedule shift changes. With an increase in the time available to procure the necessary land associated with the proposed transmission routes, the Company elected to use a self-managed land acquisition approach versus the planned "turnkey" contracted approach. The schedule shift and related contracting change resulted in a significant reduction of land acquisition and siting expenditures in 2009.

Q. To summarize, were all the costs that the Company incurred in 2009 for the Levy Nuclear Project reasonable and prudent?

Yes. The specific cost amounts for the transmission portion of the LNP contained in the NFR schedules, which are attached as exhibits to Mr. Garrett's testimony, reflect the reasonable and prudent costs PEF incurred

for the LNP transmission work in 2009. PEF worked on establishing State and Federal licensing, program and project schedules and cost estimates, staffing and resource plans, external outreach and communications, project designs, transmission line route selection, land acquisition, and permitting activities. All of these costs were necessary for the LNP transmission projects.

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IV. PROJECT MANAGEMENT AND COST CONTROL OVERSIGHT Q. Has the Company implemented any project management or cost control oversight mechanisms for the transmission portion of the Levy Nuclear project?

Yes. The Company is using applicable policies and procedures to ensure that the transmission costs for the LNP are prudently incurred, managed, and controlled. The transmission projects associated with the LNP are subject to the same overall Company management as the generation side of the LNP. Ms. Hardison describes the LNP management in some detail in her testimony. LNP management is accomplished by adherence to the Company's Integrated Project Plan ("IPP") for the LNP. The Company's Project Governance Policy, Execution of Large Construction Projects and Programs Procedure, along with numerous other policies, procedures and controls, also apply to the Levy Transmission projects.

To further promote best practices for project management, the Company has created the Project Management Center of Excellence ("PMCoE"), which will standardize best practices of project management

across the Company. Each standard crafted by the PMCoE was based on the Project Management Institute Project Management Body of Knowledge. The roll out of each standard was accomplished through the creation of procedures that became effective at various times throughout 2009.

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The PMCoE will enhance the Company's project management approach so that it is more efficient, flexible, and cost effective. Specifically, its goals are to standardize processes, establish a project management career path, provide common training and qualification programs, and adopt best practices from both internal and industry groups. The processes developed by PMCoE will ultimately apply to all Progress Energy projects.

In the later part of 2009, Levy Transmission finalized a Real Estate Governance Document. This document provides guidance for the acquisition of land needed for Levy Transmission. It identifies participants, outlines the acquisition procedure and payment process, document tracking, approval, filing, reporting, and document management and retention.

The Company also finalized a Levy Program Governance Policy in 2009. This policy describes the program oversight and enterprise governance of development, planning, construction and system turnover for the LNP. The LNP oversight structure enables timely decisions and encourages sufficient rigor in project and construction management and execution consistent with existing regulatory and legislative requirements.

Similar to the Generation side of the LNP, the Records Management System ("RMS") is used to manage the documents associated with the LNP transmission work.

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To maintain control over the transmission projects and related work, baseline schedules were completed for the program and some of the projects contained in the program. The schedule defines the transmission task order, specific time frame allocated to the task, and the task start and finish dates. The schedule is used to provide management with timely information necessary to make decisions related to the LNP transmission work. The schedule also allows the Company to coordinate LNP transmission work with internal Company departments such as Planning, Engineering, Construction, Energy Control, and the Generating Stations, among others. The schedule further serves as a link between the Company and the Company's contractors and as a management tool with the outside contractors. Various levels of supporting schedules are also developed and used throughout the course of the Levy Transmission projects.

Other corporate tools are used to support the management of the Levy Transmission work. The Oracle Financial Systems/Business Objects reporting tool provides monthly corporate budget comparisons to actual cost information, as well as detailed transaction information. This information, along with other financial accounting data, allows PEF to regularly monitor the costs of the transmission work compared to budgets and projections and make decisions accordingly to ensure that the costs incurred are reasonable and prudent for the work obtained. Similarly, the

PassPort system is used under the Contract Development and Administration Policy to manage contracts for Levy transmission work. This system routes contracts for approval, including contract amendments and work authorizations, and facilitates routing and approval of contractor invoices and payments in accordance with Company policies and procedures.

Q. What procedures are used by PEF to ensure the reasonable and prudent selection of contractors and vendors for the transmission projects for the Levy Units?

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PEF typically uses RFP bidding procedures to ensure that the selected contractors and vendors provide the best value for PEF's customers. In 2009, the RFP process was utilized for the LiDAR Study contract, the CREC Switchyard design and engineering contract, the CREC Switchyard phase one construction contract, the CREC materials purchase contract, the CREC insulators contract, the cultural archaeological consulting contract, the environmental resource consulting contract, and the title and closing contract.

RFPs cannot always be used, however, to obtain services or materials. When deciding to use a sole/single source contractor or vendor, PEF provides sole/single source justifications for not using an RFP for the particular work or material. When PEF contracts with sole/single source contractors or vendors, PEF further ensures that the contracts contain reasonable and prudent contract terms with adequate pricing provisions

(including fixed price and/or firm price escalated according to indexes, where possible).

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Sole/single source contractor or vendor relationships are sometimes necessary to provide the services or materials at all or at the most reasonable cost under the circumstance. To illustrate, in some instances, the particular contractor or vendor has particular experience with the plant or the work required, thus making it advantageous for that vendor to accomplish the work.

Q. Does PEF have any mechanisms in place to ensure that the policies and procedures described above are effective?

Yes, PEF uses internal auditing to verify that its program management and cost oversight controls are effective. These internal audits occur regularly for large projects like the Levy Transmission Program. Recommendations and results from Internal Audit reviews are provided to management as well as members of the project team for continuous improvement.

Q. Do PEF's policies provide for senior management review of project costs and schedules?

A. Yes, the Levy team provides a monthly summary report to members of Progress Energy Senior Management that highlights financial, schedule, and current issue information. This information is provided in summary format to the Company's Board of Directors on a periodic basis.

On-going funding and project review for the transmission projects in the LNP is prepared on a periodic basis for members of Senior Management and presented as an IPP in accordance with the Company's Capital Projects guidance. Detailed project cost and schedule information is monitored regularly by the project management and cost management personnel within the functional department, and monthly reviews of the project status are presented to the Department Vice President.

Does this conclude your testimony?

A. Yes, it does.

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