

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**In re: Petition to Recover Costs
of Crystal River Unit 3 Uprate
pursuant to the Nuclear Cost
Recovery Rule**

DOCKET NO. 080009

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**SUPPLEMENTAL DIRECT TESTIMONY OF DANIEL L. RODERICK
IN SUPPORT OF 2008 ACTUAL/ESTIMATED COSTS
AND 2009 PROJECTED COSTS**

**ON BEHALF OF
PROGRESS ENERGY FLORIDA**

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IN RE: NUCLEAR COST RECOVERY CLAUSE

BY PROGRESS ENERGY FLORIDA

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I. INTRODUCTION AND SCOPE OF TESTIMONY

Q. Please state your name.

A. My name is Daniel L. Roderick.

Q. Did you file Direct Testimony on May 1, 2008 in this docket?

A. Yes, I filed testimony in support of PEF's actual/estimated and projected costs for the CR3 Uprate project.

Q. Why are you filing supplemental testimony to this direct testimony?

A. I am supplementing my direct testimony to provide additional information regarding the Company's actual/estimated and projected costs. I will also provide testimony regarding PEF's project management policies and procedures that are designed to manage project costs and maintain the project schedule and explain why they are reasonable and prudent.

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II. PRUDENCE OF ACTUAL 2008 COSTS INCURRED FOR CR3 UPRATE PROJECT

Q. Has the Company incurred construction costs for the CR3 Uprate Project?

A. Yes, as shown on line 45 of Schedule AE-6, the total capital expenditures, for January to March 2008, gross of joint owner billing and exclusive of carrying cost, were \$9.0 million.

Q. What does this \$9.0 million figure include?

A. Using the terminology of the Nuclear Filing Requirements (“NFRs”), PEF incurred Project Management costs of \$1 million and Power Block Engineering, Procurement, etc. (i.e., related construction cost items) costs of \$7.9 million that total \$9.0 million.

Q. Please describe the total Project Management costs incurred and explain why the Company incurred them.

A. These costs include the following Project Management activities: (1) project administration, including project instructions, staffing, roles and responsibilities, and interface with accounting, finance, and senior management; (2) contract administration, including status and review of project requisitions, purchase orders, and invoices, contract compliance, and contract expense reviews; (3) project controls, including schedule

1 maintenance and milestones, cost estimation, tracking and reporting, risk
2 management, and work scope control; (4) project management, including
3 project plans, project governance and oversight, task plans, task
4 monitoring plans, lessons learned, and task item completions; (5) project
5 training, including the uprate project training program, training of
6 personnel in accordance with the training program, and maintaining
7 training records; and (6) CR3 Uprate licensing work.

8 Each activity was conducted under the Company's project
9 management and cost control policies and procedures that I describe in my
10 testimony below. Such costs are necessary to ensure that the scope of
11 work is adequate to achieve the uprate project objectives, that the
12 engineering and construction labor, material, and equipment, provided by
13 PEF or outside vendors for the project, is available when needed at a
14 reasonable cost, and that the project schedule can be maintained.

15 The current schedule calls for the CR3 Uprate to be completed
16 during the 2009 and 2011 CR3 refueling outages. Through the Project
17 Management activities that I have identified, the Company is on-schedule
18 to perform the CR3 Uprate project work as planned. These necessary CR3
19 Uprate project costs are reasonable and prudent.

20
21 **Q. Please describe the total costs incurred for the Power Block**
22 **Engineering, Procurement and related construction cost items and**
23 **explain why the Company needed to incur them.**

1 A. These costs include (1) the purchase of improved instruments for more
2 accurate measurements, (2) contract labor for the engineering and
3 installation of these instruments, and (3) engineering and analytical
4 support work for Balance of Plant (“BOP”) and Extended Power Uprate
5 (“EPU”) work. These costs were necessary to achieve the power uprate
6 objectives of the CR3 Uprate project. Each of these costs directly
7 contributes labor or material to the performance of the power uprate,
8 which will increase the generation of electrical power using nuclear fuel at
9 CR3, resulting in substantial fuel savings for our customers. As a result,
10 these are reasonable and prudent costs.

11
12 **III. 2008 ACTUAL/ESTIMATED AND 2009 PROJECTED PERIODS**

13
14 **Q. Does the Company plan to incur costs for the CR3 Uprate Project**
15 **during the remainder of 2008?**

16 A. Yes, PEF must incur costs to maintain the schedule for the CR3 Uprate
17 project and to procure material and equipment and perform engineering
18 and analytical support work to accomplish the power uprate work during
19 the 2009 and 2011 CR3 refueling outages.

20
21 **Q. What types of costs does PEF project to incur for the CR3 Uprate**
22 **project during the remainder of 2008 and 2009?**

1 A. As reflected in Schedule AE-6 of Ms. Cross' Exhibit LC-2, the total 2008
2 actual/estimated costs are broken down into two categories: Project
3 Management cost of \$9.4 million and Power Block Engineering,
4 Procurement, and related construction costs of \$58.2 million.

5 As reflected in Schedule P-6 of Ms. Cross' Exhibit LC-1, the 2009
6 projected costs are broken down into two categories: Project Management
7 costs of \$21.6 million and Power Block Engineering, Procurement, and
8 related construction costs of \$85.5 million.

9
10 **Q. What Project Management work will be done in 2008 and 2009 and**
11 **why does the Company need to incur the cost of that work?**

12 A. In 2008 and 2009, Project Management costs will include: (1) project
13 administration, including project instructions, staffing, roles and
14 responsibilities, and interface with accounting, finance, and senior
15 management; (2) contract administration, including status and review of
16 project requisitions, purchase orders, and invoices, contract compliance,
17 and contract expense reviews; (3) project controls, including schedule
18 maintenance and milestones, cost estimation, tracking and reporting, risk
19 management, and work scope control; (4) project management, including
20 project plans, project governance and oversight, task plans, task
21 monitoring plans, lessons learned, and task item completions; (5) project
22 training, including the uprate project training program, training of

1 personnel in accordance with the training program, and maintaining
2 training records; and (6) CR3 Uprate licensing work.

3 Each activity was conducted under the Company's project
4 management and cost control policies and procedures that I describe in my
5 testimony below. Such costs are necessary to ensure that the scope of
6 work is adequate to achieve the uprate project objectives, that the
7 engineering and construction labor, material, and equipment, provided by
8 PEF or outside vendors for the project, is available when needed at a
9 reasonable cost, and that the project schedule can be maintained.

10 The Company reasonably projected its Project Management costs for
11 the remainder of 2008 and 2009 by using the Company's staffing plan
12 associated with the Uprate Project management staff and an approximate
13 three percent internal labor escalation.

14
15 **Q. What Power Block Engineering, Procurement, and related**
16 **construction work will be done in 2008 and 2009 and why does the**
17 **Company need to incur the cost of that work?**

18 **A.** These projected costs include purchase of materials for the moisture
19 separator reheaters ("MSRs"), purchase of generator and exciter
20 components, and work done by Siemens on the wheel disc machining and
21 generator rotor winding, completion of inner casing fabrication, purchase
22 and shipping of the low pressure turbines, progress payments for the
23 delivery of the MSR vessels to CR3, and the mobilization of equipment

1 and labor by Siemens in preparation for the installation work to be done
2 during the 2009 scheduled refueling outage.

3 These costs are necessary to achieve the power uprate objectives of the
4 CR3 Uprate project. Each of these costs directly contributes labor or
5 material to the performance of the power uprate, which will increase the
6 generation of electrical power using nuclear fuel at CR3, resulting in
7 substantial fuel savings for our customers. As a result, these are
8 reasonable and prudent costs.

9 PEF projected its 2008 and 2009 Power Block Engineering,
10 Procurement, and related construction item costs using actual contract
11 figures and project schedule milestones. For example, to maintain the
12 schedule for the planned outage in 2009, PEF must order and make
13 payments on certain equipment during a particular timeframe. These
14 payment amounts and the times for payment are set forth in various
15 contracts, and these payments are used for the projections. PEF has,
16 therefore, developed its construction cost estimates using the best
17 available information because the parameters of our cost estimates,
18 material and labor pricing, whether fixed or firm with industry recognized
19 escalations, and the schedule for payments, has been established by
20 contract. The 2008 and 2009 Power Block Engineering, Procurement, and
21 related construction item cost projections are, therefore, reasonable.
22

1 **Q. Are there any other costs included in the Company's projections for**
2 **2009 for the CR3 Uprate project?**

3 **A.** Yes, PEF projects that it will incur approximately \$12 million, gross of
4 joint owner billing and exclusive of carrying costs, to address the Point of
5 Discharge ("POD") issue. PEF has commissioned a study to determine
6 the solution(s) necessary to address the temperature and flow of the water
7 in the discharge canal. The water in the discharge canal is affected not
8 only by CR3 but also by Crystal River Units 1 and 2. This study will also
9 identify the respective impacts of CR3 to the discharge canal, so that the
10 appropriate costs of the solution(s) can be properly allocated to the CR3
11 Uprate project.

12 The study is in two phases, the first of which has been completed.
13 The phase 1 study reviewed various options available to mitigate the
14 increased heat load in the discharge canal. The recommendation from
15 phase 1 was that additional cooling towers and a recirculation line
16 connecting the discharge canal to the intake canal be added. The second
17 phase could also be described as a conceptual design phase, and it is not
18 yet complete. The phase 2 study currently in progress will resolve some
19 open engineering issues identified during phase 1 and establish the design
20 requirements needed to construct the new towers and recirculation line.
21 Phase 2 is currently scheduled to be completed by the end of 2008.

22 The Company does have confidence in the overall costs and, in
23 particular, those for the anticipated expenditures for 2009. Further, while

1 the final allocation has not been determined, PEF remains confident that
2 continued use of 42 percent of the overall costs of the POD solution(s)
3 should be allocated to the CR3 Uprate project. This projection is based on
4 the incremental heat load that is attributable to the CR3 uprate that the
5 cooling towers need to dissipate. The POD costs are part of both the
6 Project Management and Power Block Engineering, Procurement, and
7 related construction cost categories on Line 39 and Line 43 of Schedule P-
8 6 of Exhibit LC-1.

9
10 **IV. TRUE UP TO ORIGINAL COST FILING FOR 2008**

11
12 **Q. Has the Company filed schedules to provide information truing up the**
13 **original estimates to the actual costs incurred?**

14 **A.** Yes, these schedules are provided as an Exhibit to Ms. Cross' testimony.

15
16 **Q. What is the current total project estimate, compared to the original**
17 **estimate?**

18 **A.** As reflected on Schedule TOR-7, the total current project estimate,
19 exclusive of AFUDC and including fully loaded costs, is \$364 million.
20 The original estimate provided in the need determination proceeding was
21 \$381 million, which did not reflect the full "Financial View" or fully
22 loaded costs but instead reflected the estimated direct costs. The original
23 estimate inclusive of the indirect costs is \$439 million as presented in

1 Scheduled TOR-7. As I explained above, we now have contracts in place
2 for the CR3 Uprate project work, and our current cost estimates are based
3 on these contract costs and estimates of supporting project management
4 and other work by PEF. The current total project estimate is, therefore,
5 based on the best available information at the time of this filing.

6 The cost estimates for the CR3 Uprate project, when compared on
7 the same cost basis, have changed. One reason is that the installation costs
8 for the work already completed were larger than originally projected. This
9 is consistent with the Company's overall experience with recent
10 construction labor and engineering cost increases. Similarly, the costs of
11 material have increased since the initial estimate was prepared consistent
12 with material cost increases in the utility industry and in the construction
13 industry as a whole. At this time, however, the current estimate reflects
14 costs under contracts that are in place, which was not the case when the
15 initial cost estimate was prepared. The Company, therefore, believes the
16 current estimate reasonably reflects the cost of the Uprate project based on
17 costs that are better defined under circumstances where the Company is
18 closer to completing the project and simply has better cost information
19 under its contracts for its projections.

20 Another change to the estimate is the elimination of the
21 transmission costs that were included in the original estimate. The
22 Company completed its transmission study related to the CR3 Uprate
23 project after its initial cost estimate was prepared. As a result of that

1 study, the Company determined that no additional transmission upgrades
2 and related costs were necessary as a result of the CR3 Uprate.
3

4 **V. PROJECT MANAGEMENT AND COST CONTROL OVERSIGHT**

5
6 **Q. Has the Company implemented project management and cost control
7 oversight mechanisms for the CR3 Uprate project?**

8 **A.** Yes. The Company is utilizing several policies and procedures to ensure
9 that the costs for the CR3 Uprate project are reasonably and prudently
10 incurred and that the project remains on schedule. The CR3 Uprate
11 project is being undertaken by the Company consistent with its Project
12 Management Manual, which has been in place at the Company and used to
13 manage capital projects since early in this decade. A copy of the
14 Company's Project Management Manual has been provided in discovery.
15 Additionally, the CR3 Uprate project is a major capital project for the
16 Company. As such, the uprate project must comply with the Company's
17 policies and procedures in its Major Capital Projects – Integrated Project
18 Plan that was issued in January 2008. A copy of the Integrated Project
19 Plan for Major Capital Projects has also been provided in discovery.

20 The CR3 Uprate project was also approved in accordance with the
21 Company's Project Evaluation and Authorization Process. This
22 evaluation and project authorization process has been in place at the
23 Company for many years. Finally, the CR3 Uprate project is subject to

1 the Progress Energy Project Governance Policy, which also has been in
2 place for many years. Both the Project Evaluation and Authorization
3 Process and the Project Governance Policy have been provided in
4 discovery too.

5
6 **Q. Can you describe some of the project management and cost control**
7 **policies or procedures in the Company's project management**
8 **documents that are being used to manage the CR3 Uprate project and**
9 **control project costs?**

10 **A.** Yes. PEF has several control mechanisms in place to manage the CR3
11 Uprate project and the costs incurred on the project. By utilizing these
12 policies, PEF is able to effectively keep the CR3 Uprate project on
13 schedule and ensure that costs incurred are reasonable and prudent.

14 For example, the CR3 Uprate project management team conducts a
15 wide variety of regular, internal meetings. These regular meetings allow
16 the project management team to monitor the progress of the project, its
17 costs, and to incorporate the collective knowledge and experience of the
18 team in addressing the scope of the work, the cost of the work,
19 engineering and construction implementation of the work items, and
20 schedule performance. During these meetings PEF's project management
21 team reviews team member roles and responsibilities, tasks are identified,
22 and the necessary steps to implement the tasks, including incorporating
23 lessons learned, are planned. Any staffing issues are discussed and

1 addressed. Procurement under contracts, through the status of
2 requisitions, purchase orders, and invoices for necessary engineering and
3 material, is addressed as well as the status of administration of the
4 contracts with outside vendors. Project training updates are provided.
5 The status of work on the uprate licensing is regularly discussed. Risk
6 management is discussed and addressed. Finally, project management
7 expectations are communicated and implemented by the CR3 Uprate
8 project management team.

9 PEF's CR3 Uprate project managers also meet regularly with
10 outside contract vendors working on the project to review the contract
11 scope of work, engineering and construction implementation of that work
12 scope, and the schedule for the work under the vendor contracts. Project
13 requisitions, purchase orders, and invoices are discussed. Project
14 management expectations are communicated to the outside vendors. By
15 maintaining supervision over the project, the project schedule, and the
16 work performed by outside vendors, PEF is able to anticipate and manage
17 scope changes, if any, and project expenditures.

18 There are other regular project reviews too. CR3 Uprate project
19 managers prepare Project Cost Reports that include all contract, labor,
20 equipment, material and other project cost transactions recorded to the
21 CR3 Uprate project. Monthly Department Cost Reports reflecting
22 department capital expenditures for the CR3 Uprate project are also
23 prepared by the department managers and/or financial analysts. These

1 reports are regularly reviewed by the CR3 Uprate project management
2 team.

3 PEF also has monthly PEF Finance Committee meetings, in which
4 management reviews the CR3 Uprate project costs. Prior to these
5 meetings, responsible operations managers and Finance Management for
6 the organization review various monthly cost and variance analysis reports
7 for the capital budget. Variances from total budget or projections are
8 reviewed, discrepancies are identified and corrections made as needed.
9 The specific reports used are the Cost Management Reports produced by
10 PEF Accounting. All cost reporting for the CR3 Uprate project is tied
11 back to the Cost Management Reports which are tied back to the Legal
12 Entity Financial Statements. In addition to the monthly Finance
13 Committee meetings, senior management will periodically review the CR3
14 Uprate project to monitor its cost and ensure that it is on schedule.

15
16 **Q. Are employees involved in the CR3 Uprate Project trained in the**
17 **Company's project management and cost control policies and**
18 **procedures?**

19 **A.** Yes, they are. PEF's project management team for the CR3 Uprate project
20 has been trained in these Company policies. There are in fact formal
21 Project Manager qualification requirements for projects of various size as
22 well as for other roles within the Project Team (Designated
23 Representative, Field Lead, etc.). Also, members of the CR3 Uprate

1 project management team have experience implementing these project
2 management and cost control policies and procedures successfully on
3 other Progress Energy projects. And, members of the Project Team also
4 have been hired from other organizations which brings a rich mixture of
5 experience to bear on the project's demands.

6
7 **Q. How has this experience helped the Company's employees with the**
8 **project management of the CR3 Uprate project?**

9 **A.** PEF incorporated lessons learned from its experience with the uprates at
10 other Progress Energy nuclear plants. Having been through those uprates,
11 the Company has valuable experience that the Company can rely on in the
12 course of this uprate project. The Company's prior experience adds value
13 to all aspects of this uprate project, including staffing, vendor
14 relationships, scheduling, and cost management. Additionally, although
15 the entire CR3 uprate project cannot be compared to any of these other
16 uprates, particular portions of the projects can be compared. By making
17 such comparisons, PEF is able to ensure that the costs for these particular
18 parts of the project are reasonably consistent with each other. This
19 provides greater assurance that the CR3 Uprate project costs are
20 reasonable and prudent.

21

1 **Q. You mentioned outside vendors on the CR3 Uprate project. How does**
2 **the Company ensure that its selection and management of outside**
3 **vendors is reasonable and prudent?**

4 **A.** First, a requisition is created in the Passport Contracts module for the
5 purchase of services. The requisition is reviewed by the appropriate
6 Contract Specialist in Corporate Services, or field personnel on the CR3
7 Uprate project, to ensure sufficient data has been provided to process the
8 contract requisition. The Contract Specialist prepares the appropriate
9 contract document from pre-approved contract templates in accordance
10 with the requirements stated on the contract requisition.

11 The contract requisition then goes through the bidding or
12 finalization process. Once the contract is ready to be executed, it is
13 approved online by the appropriate levels of the approval matrix as per the
14 Approval Level Policy and a contract is created. Contract invoices are
15 received by the CR3 Uprate project managers. The invoices are validated
16 by the project managers and Payment Authorizations approving payment
17 of the contract invoices are entered and approved in the Contracts module
18 of the Passport system.

19 When selecting vendors for the CR3 Uprate project, as I indicated,
20 PEF utilizes bidding procedures through a Request for Proposal (“RFP”)
21 when it can for the particular services or material needed to ensure that the
22 chosen vendors provide the best value for PEF’s customers. When a RFP
23 cannot be used, PEF ensures that the contracts with the sole source

1 vendors contain reasonable and prudent contract terms with adequate
2 pricing provisions (including fixed price and/or firm price, escalated
3 according to indexes, where possible). When deciding to use a sole source
4 vendor, PEF provides sole source justifications for not doing an RFP for
5 the particular work.

6 In some instances where a sole source vendor must be used, for
7 example, the vendor selected has particular experience with the plant or
8 the work required, thus making it advantageous for that vendor to
9 accomplish the work. This occurred, for example, with PEF's decision to
10 contract with AREVA for certain work on the CR3 Uprate. AREVA
11 purchased Babcock & Wilcox ("B&W"). The CR3 plant has a B&W
12 designed reactor. By buying B&W, AREVA now owns the proprietary
13 analysis and detailed information on how the reactor works. Further, they
14 have partnered with Worley Parsons which was previously the primary
15 Architect/Engineer firm responsible for the CR3 design. This obviously
16 provides AREVA with a distinct advantage over any other vendor and
17 reduces cost and potential schedule impacts from adding an additional
18 vendor interface.

19 In other instances where a sole source vendor is selected, the
20 vendor has a fleet contract (which was secured through an RFP prior to the
21 CR3 project) in which it provides service for other Progress Energy
22 nuclear plants. Because of this working relationship, and the vendor's

1 ongoing knowledge of and experience with Progress Energy's nuclear
2 plants, it is reasonable for PEF to continue working with these vendors.

3
4 **Q. Does the Company verify that the Company's project management
5 and cost control policies and procedures are followed?**

6 **A.** Yes, it does. PEF uses internal audits to verify that its program
7 management and oversight control are being implemented and are
8 effective in practice. On December 28, 2007, an audit was completed
9 regarding the effectiveness of project management and cost management
10 for the CR3 Uprate project. This confidential audit report, and the
11 associated workpapers, was provided in discovery. Other internal audits
12 of the project and cost management on the CR3 Uprate project are
13 scheduled for 2008 through 2010. These audits were listed on Attachment
14 B to the Company's response to a Commission audit request.
15 Additionally, the Company's project management policies themselves,
16 produced in discovery and included in the Company project management
17 documents that I have described above, contain their own mechanisms to
18 ensure that they are followed and effectively implemented.

19
20 **Q. Are the Company's project management and cost control policies and
21 procedures on the CR3 Uprate project reasonable and prudent?**

22 **A.** Yes, they are. These project management policies and procedures reflect
23 the collective experience and knowledge of the Company. As a result,

1 Company employees have, in preparing the policies and procedures
2 reflected in the Company's major capital project management documents
3 that I have identified above, incorporated their experience and knowledge
4 of project management policies and procedures that work within the
5 Company and within the industry. These policies and procedures have
6 also been tested by the Company on other capital projects. Any lessons
7 learned from those projects have been incorporated in the current policies
8 and procedures. We believe, therefore, that our project management
9 policies and procedures are consistent with best practices for capital
10 project management in the industry.

11
12 **Q. Does this conclude your testimony?**

13 **A.** Yes, it does.
14