

**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

**In re: Nuclear Cost Recovery  
Clause**

**DOCKET NO. 090009  
Submitted for filing:  
May 1, 2009**

**REDACTED**

**REDACTED**

**DIRECT TESTIMONY OF GARRY MILLER  
IN SUPPORT OF ACTUAL/ESTIMATED AND PROJECTED COSTS**

**ON BEHALF OF  
PROGRESS ENERGY FLORIDA**

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FPSC-COMMISSION CLERK

**IN RE: NUCLEAR COST RECOVERY CLAUSE**

**BY PROGRESS ENERGY FLORIDA**

**FPSC DOCKET NO. 090009**

**DIRECT TESTIMONY OF GARRY MILLER**

1 **I. INTRODUCTION AND QUALIFICATIONS**

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

3 **A.** My name is Garry Miller. My business address is 100 East Davie Street,  
4 TPP 15, Raleigh, NC 27602.

5  
6 **Q. By whom are you employed and in what capacity?**

7 **A.** I am employed by Progress Energy Carolinas (“PEC”) in the capacity of  
8 General Manager – Nuclear Plant Development (“NPD”). As General  
9 Manager – Nuclear Plant Development, I am responsible for the siting,  
10 licensing, engineering, construction, and overall management of Progress  
11 Energy Florida’s (“PEF’s” or the “Company’s”) proposed Levy Nuclear  
12 Power Plants, the Levy Nuclear Project (“LNP”).

13  
14 **Q. What are your responsibilities as the General Manager - Nuclear  
15 Plant Development?**

16 **A.** I am responsible for new nuclear plant development in both the Carolinas  
17 and Florida, including the siting, licensing, engineering, construction and

DOCUMENT NUMBER - DATE

04081 MAY -18

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1 overall management of the Levy Nuclear Project. Specifically, my  
2 responsibilities include, but are not limited to, scheduling, contracts,  
3 commercial matters, training, document control, records management, and  
4 project management. All the major contracts approved to date on the  
5 LNP, and for Nuclear Plant Development, have been under my  
6 management and responsibility.

7  
8 **Q. Please summarize your educational background and work experience.**

9 **A.** I have a Bachelor of Science degree in Nuclear Engineering from North  
10 Carolina State University. I also have a Master's degree in Mechanical  
11 Engineering from North Carolina State University. I have approximately  
12 thirty years of experience in the nuclear industry. My experience involves  
13 engineering and maintenance experience at all of Progress Energy's  
14 nuclear plants and the corporate office. I have held Engineering Manager  
15 positions at the Brunswick Nuclear Plant and Robinson Nuclear Plant. I  
16 was also the Chief Engineer for Nuclear Generation Group ("NGG").  
17 Additionally, I was the Maintenance Manager at Progress Energy's Harris  
18 Nuclear Plant.

19  
20 **II. PURPOSE OF TESTIMONY**

21 **Q. What is the purpose of your direct testimony?**

22 **A.** The purpose of my direct testimony is to support the Company's request  
23 for cost recovery pursuant to the nuclear cost recovery statute and rule for

1 certain costs either already incurred or to be incurred in 2009 for the LNP.  
2 My testimony will also support the Company's actual/estimated and  
3 projected costs for the remainder of 2009 and 2010. Finally, my testimony  
4 explains why the LNP is feasible, pursuant to Rule 25-6.0423(5)(c)5,  
5 F.A.C.

6  
7 **Q. Have you previously filed testimony in this docket?**

8 **A.** Yes, I filed testimony on March 2, 2009 in support of the actual costs  
9 incurred in 2008 for the LNP.

10  
11 **Q. Do you have any exhibits to your testimony?**

12 **A.** Yes, I am sponsoring the following exhibits:

- 13 • Exhibit No. \_\_ (GM-1), which is an updated fuel forecast; and
- 14 • Exhibit No. \_\_ (GM-2), which is an updated environmental forecast.

15 I am also sponsoring portions of the schedules attached to Thomas G. Foster's  
16 testimony. Specifically, I am sponsoring the cost portions of Schedule AE-6, as  
17 well as Schedules AE-6A, AE6B, and AE-7 through AE-8A of the Nuclear Filing  
18 Requirements ("NFRs"), included as part of Exhibit No. \_\_ (TGF-1) to Thomas  
19 G. Foster's testimony. Schedule AE-7 is a description of the nuclear technology  
20 selected. Schedule AE-8 is a list of the contracts executed in excess of \$1.0  
21 million that have been executed to date. Schedule AE-8A reflects details  
22 pertaining to the contracts executed in excess of \$1.0 million.

1 I am also sponsoring the cost portions of Schedule P-6, as well as  
2 Schedules P-6A, P-7, P-8, and P-8A, part of Exhibit No. \_\_ (TGF-2) to Mr.  
3 Foster's testimony, which provide similar details for cost, technology selected,  
4 and contracts as the AE schedules do, as well as Appendix B.

5 These exhibits and all of these schedules are true and accurate.

6  
7 **III. SUMMARY OF LNP AND TESTIMONY.**

8 **Q. Please briefly describe the Levy Nuclear Project (LNP).**

9 A. The LNP involves the planned construction of two state-of-the-art Westinghouse  
10 AP1000 Advanced Passive nuclear power plants in Levy County, Florida and  
11 associated transmission facilities to meet the Company's generation capacity  
12 needs. The LNP will provide needed base load generation from a clean, carbon-  
13 free generation resource that enhances the Company's fuel diversity and reduces  
14 PEF's and the State of Florida's dependence on fuel oil and natural gas to  
15 generate electricity.

16  
17 **Q. What major milestones for the Levy Nuclear Project were completed in**  
18 **2008?**

19 A. On March 11, 2008, PEF filed a petition with this Commission for an affirmative  
20 determination of need for the proposed Levy Units 1 and 2 nuclear power plants  
21 together with the associated facilities including transmission lines and substation  
22 facilities. This filing followed a detailed reactor technology evaluation and  
23 update and the selection of the Westinghouse AP1000 nuclear power plant

1 technology for the LNP. This filing also followed a detailed analysis of available  
2 sites and the selection and purchase of the current site for the LNP in Levy  
3 County. This Commission voted to affirm the need for the LNP on July 15, 2008  
4 and issued its Order granting the determination of need on August 12, 2008.

5 On March 28, 2008, the Letter of Intent (“LOI”) was signed with  
6 Westinghouse for long lead components for the LNP. Negotiations continued  
7 with Westinghouse and Shaw, Stone & Webster (the “Consortium”) for an  
8 Engineering, Procurement, and Construction (“EPC”) contract. An EPC contract  
9 with the Consortium for the LNP was ultimately executed on December 31, 2008.

10 Additionally, PEF obtained amendments to the Levy County  
11 Comprehensive Land Use Plan. In September 2008, Levy County approved a  
12 Special Exception Use Permit zoning application for LNP, as provided for under  
13 an amendment to the Levy County Land Development Plan made in 2007 for  
14 generating facilities. PEF also prepared and filed on June 2, 2008 its Site  
15 Certification Application (“SCA”) with the Florida Department of Environmental  
16 Protection (“FDEP”). PEF further completed and submitted the Combined  
17 License Application (“COLA”) for the LNP to the Nuclear Regulatory  
18 Commission (“NRC”) on July 30, 2008. The NRC completed its sufficiency  
19 review on the Levy COLA and docketed the COLA on October 6, 2008. PEF  
20 also completed and submitted to the NRC its Limited Work Authorization  
21 (“LWA”) request for the LNP concurrent with the Levy COLA. This LWA  
22 request was subsequently updated on September 12, 2008 to include the  
23 diaphragm wall and grouting site work based on interactions with the NRC.

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**Q. You mentioned an LWA in your previous response. What is an LWA?**

**A.** An LWA is a limited work authorization issued by the NRC under 10 CFR Parts 50 and 52. It allows a utility that is constructing a nuclear plant to do certain site work prior to the issuance of the Combined Operating License (“COL”). Thus, when the COL is issued, the utility can begin actual construction of the safety-related nuclear reactor building. The LWA request was part of the COLA and can be reviewed and authorized by the NRC in advance of the overall issuance of the COL.

PEF’s NRC submittal requested a schedule that included issuance of the Final Environmental Impact Statement (“FEIS”) in June 2010, the LWA in September 2010, the Final Safety Evaluation Report (“FSER”) in January 2012, and the COL in the first quarter of 2012.

**Q. What is the current status of the Company’s 2008 DEP and NRC regulatory filings?**

**A.** The DEP issued its SCA report to PEF on January 12, 2009, and the SCA hearing concluded in March 2009. DEP is scheduled to issue its order on PEF’s SCA in May 2009, and the Governor and Cabinet sitting as the Siting Board are expected to vote on the Levy SCA by the end of the summer of 2009. The Levy SCA is on schedule.

1                   The NRC Staff recently indicated that the COL review is on  
2 schedule but the proposed LWA scope review will require the same  
3 duration as the COLA to complete, meaning the LWA and COL issuance  
4 would be expected at the same time. Specifically, the NRC Staff  
5 determined in late January that the NRC review and approval process of  
6 the proposed LWA scope could not be completed sooner than the  
7 corresponding geotechnical review and approval of the broader COLA,  
8 particularly the Final Safety Analysis Report (“FSAR”) portion of the  
9 COLA. As a result of this NRC determination, the site work that PEF  
10 planned to perform under the LWA prior to COL issuance will have to be  
11 deferred until after COL issuance. Based on this NRC determination PEF  
12 also expects a schedule shift in the commercial operation dates of the  
13 LNP. This NRC determination will force PEF to shift substantial site  
14 work until much later in the process, which will in turn result in a deferral  
15 of various construction activities.

16  
17 **Q. Did PEF’s LWA application for the Levy site comply with NRC LWA**  
18 **requirements?**

19 **A.** Yes, the Company complied with all requirements for the LWA. The  
20 NRC confirmed that PEF’s LWA met the NRC’s requirements on October  
21 6, 2008 when the NRC informed PEF that the NRC Staff had completed  
22 its acceptance review and determined that PEF’s COLA, which included



1 the LWA, was acceptable for docketing. Docketing of the COLA  
2 commences NRC review of the substance of the COLA.

3  
4 **Q. Did the NRC approve the Company's proposed schedule when it**  
5 **docketed the COLA?**

6 A. No. Docketing of the COLA by the NRC does not mean the NRC has  
7 approved the utility's proposed schedule for LWA and COL issuance.  
8 Typically, the NRC issues its review schedule thirty (30) days following  
9 the docketing of the COLA, but the NRC can take longer to issue the  
10 review schedule; it is not required to issue a schedule within 30 days. The  
11 NRC uses this additional time to evaluate information necessary to  
12 determine the NRC's review critical path and associated schedule  
13 milestones. The NRC obtains this information through Requests for  
14 Additional Information ("RAIs"). RAIs are expected in the COLA  
15 process and typically issued by the NRC with respect to every COLA.

16  
17 **Q. Did the NRC issue any RAIs when PEF's COLA was docketed?**

18 A. Yes. The NRC issued several RAIs regarding the Levy site geotechnical  
19 characteristics to develop a complete review schedule. The NRC  
20 indicated that although the acceptance review determined that the LNP  
21 COLA was complete and technically sufficient, the geotechnical  
22 characteristics of the Levy County site required additional information in

1 order to develop a complete and integrated review schedule. There was no  
2 indication that an LWA would not be issued for the scope requested.

3  
4 **Q. Did PEF work with the NRC Staff with respect to the LNP COLA**  
5 **schedule?**

6 A. Yes. PEF worked with NRC staff regarding the COLA review schedule  
7 and, in particular, the proposed LWA issuance. Prior to submitting the  
8 LWA, PEF met with NRC New Reactors Office (“NRO”) managers on  
9 two occasions to ensure that the NRO managers understood the LNP  
10 scheduling needs and that the desired timelines were identified prior to  
11 license submittal. In addition, PEF met with NRC technical reviewers  
12 twice before submitting the LWA to ensure that the NRC understood Levy  
13 site-specific geotechnical features and the proposed foundation design for  
14 the Nuclear Island (“NI”). PEF continued to work with the NRC Staff  
15 after PEF submitted its COLA, including the LWA. PEF timely provided  
16 the NRC Staff the requested answers to the geotechnical RAIs, and met  
17 with and discussed with the NRC Staff the RAIs and the LWA.

18  
19 **Q. Did the NRC Staff indicate during the RAI review that an LWA could**  
20 **not be issued for Levy in advance of the COL?**

21 A. No. The discussions focused on the Levy site’s geotechnical  
22 characteristics, but the NRC accepted the Company’s RAI responses and  
23 did not indicate that an LWA could not be issued or that there was any

1 additional information they needed to make that determination.  
2 Discussions on January 23, 2009 were the first indication that the NRC  
3 Staff deemed the LWA geotechnical scope review duration to be  
4 concurrent with the COL, such that both the LWA and COL issuance  
5 would be concurrent.  
6

7 **Q. Did the inclusion of the diaphragm wall and grouting activities in the**  
8 **September 2008 LWA revision to the LWA scope necessitate a shift in**  
9 **the proposed LWA issuance date?**

10 A. No. The mere inclusion of these site work activities in the scope of the  
11 LWA did not mean that the LWA issuance date would shift. At that point  
12 in time, PEF had requested review milestone dates (in the COLA  
13 submittal) but the NRC had not yet developed a review milestone schedule  
14 for the Levy COLA. PEF believed that the NRC had adequate time to  
15 review the Company's LWA request and issue the LWA prior to the COL,  
16 consistent with PEF's original project schedule, even if these site work  
17 activities were included in the LWA. This was particularly true given that  
18 PEF was able to complete its own evaluation of the site and identify  
19 approaches for dewatering and excavation, including the diaphragm wall  
20 and grouting, in about eighteen months.

21 Further, the site work associated with dewatering and excavation,  
22 are activities normally done prior to receiving the COL. Consequently, we  
23 reasonably believed that the work necessary to support dewatering and

1 excavation of the area where the Nuclear Island would be constructed  
2 would not require such extensive NRC review as the NRC has now  
3 determined to be necessary. Similar dewatering measures are in fact  
4 typical of large construction projects in Florida and other areas with  
5 similar geotechnical characteristics to Florida. While these issues are  
6 complex, that complexity does not mean they cannot and have not been  
7 completed on other projects and these same or similar dewatering  
8 activities have been successfully employed.

9  
10 **Q. What did the Company do in response to the NRC's determination?**

11 **A.** Since late January, the Company has engaged in ongoing discussions with  
12 the NRC Staff regarding the LWA, potential modifications to the LWA, or  
13 other alternatives that allow the Company to proceed with site work prior  
14 to COL issuance. The Company first offered to reduce the scope of the  
15 LWA to only include diaphragm wall and grout work, in an effort to  
16 reduce the potential impact on the schedule. The Company believed that  
17 this reduced LWA scope would establish the water barrier required to  
18 conduct dewatering and excavation of the Nuclear Island, and would  
19 require a simpler review, since the Levy COLA does not credit either the  
20 diaphragm wall or the grout for any nuclear safety related function of the  
21 Nuclear Island. The NRC indicated, however, that any permeation grout  
22 work would also require an extended geotechnical review to confirm that  
23 all safety questions were addressed and so that scope would not allow for

1 review and issuance of the LWA before the COLA. The NRC did agree  
2 that inclusion of only the diaphragm wall in the LWA could be reviewed  
3 and issued prior to the COL. The NRC issued the Milestone Review  
4 Schedule in mid-February 2009 showing the COL issuance on schedule  
5 but noting that the LWA scope and schedule was not yet resolved.  
6

7 **Q. What options did the Company evaluate with respect to the LWA?**

8 **A.** PEF considered the following options: (i) revising the scope of the LWA  
9 to include only the diaphragm wall; (ii) requesting an exemption from the  
10 LWA requirement; and (iii) shifting the project schedule by not requesting  
11 an LWA. As discussed below, the Company chose the third option.

12 Upon further evaluation of the first option, the Company  
13 determined that limiting the scope of the LWA for only the diaphragm  
14 wall would not benefit the overall project schedule. The most time-  
15 consuming site work, like the permeation grout work, was contained in the  
16 scope of the updated LWA request and without an LWA to authorize it,  
17 that work will have to be done after the COL issuance. Both the  
18 installation of the diaphragm wall and permeation grouting are necessary  
19 to allow dewatering and excavation for the Nuclear Island. The Company  
20 therefore determined that the schedule improvements from this more  
21 limited LWA scope were not beneficial to the LNP.

22 PEF also considered seeking an exemption from the LWA  
23 requirement, consistent with Parts 50 and 52 of the Code of Federal

1 Regulations (“CFR”). If approved, an exemption allows the Company to  
2 do the site work without a formal LWA issued by the NRC. The  
3 Company determined, however, that obtaining an exemption for the LWA  
4 is uncertain and risks even further delay. Specifically, the NRC may  
5 decline to issue an exemption. And, even if the NRC issued the  
6 exemption, the Company believes there is a likelihood that the exemption  
7 would be challenged. The process to resolve a challenge to an exemption  
8 can take several years, and the Company is not allowed to proceed with  
9 the work until the challenge is favorably resolved, thus negating any  
10 benefit of an LWA exemption from a scheduling perspective. In addition,  
11 seeking such an exemption may negatively impact the COLA approval  
12 process, since some of the NRC personnel tasked with evaluating the  
13 LWA exemption are needed to review the COLA. For all these reasons,  
14 PEF decided that it is prudent not to pursue an LWA exemption.

15 Finally, PEF considered and ultimately opted not to seek the LWA.  
16 A schedule shift is prudent for several reasons. First, a schedule shift  
17 allows the Company to limit the near-term price impact on its customers  
18 during the current economic conditions. This impacts our customers, and  
19 by only incurring those costs that are necessary to maintain the COLA  
20 timeline and certain other, limited costs to keep the project on task, we are  
21 able to limit customer bills for the next couple of years.

22 In addition, the schedule shift allows time for the Company to gain  
23 greater clarity on a number of issues that are important to the successful

1 completion of the LNP. Shifting the schedule should help mitigate the  
2 impact of any further regulatory process delays by shifting capital  
3 spending to a later date, after regulatory approvals are expected. The shift  
4 also reduces the financial demands on the Company and its customers  
5 during a period of uncertain federal energy policy regulation and the  
6 current economic downturn.

7  
8 **Q. What is the impact of the NRC Staff determination on the Company's**  
9 **EPC contract?**

10 A. PEF is currently working with the Consortium to assess the impact of the  
11 NRC Staff's position on the pre-construction LWA. Pursuant to the EPC  
12 contract, PEF notified the Consortium and has begun negotiations with the  
13 Consortium for an amendment to the EPC contract to incorporate a new  
14 schedule. Although the overall schedule impact is not certain at this time,  
15 PEF expects the schedule to shift at least 20 months. Any impact on the  
16 total LNP cost is also uncertain at this time. The schedule impacts and the  
17 cost impacts, if any, will be better known upon completion of negotiations  
18 with the Consortium to amend the EPC contract between PEF and the  
19 Consortium.

20  
21 **Q. How is the Company addressing the expected LNP schedule shift?**

22 A. In reviewing the impact of the schedule shift on the LNP, PEF will be  
23 weighing a number of factors in assessing how best to proceed with the

1 project. The impact, if any, on overall project cost will be an important  
2 factor, but PEF will also take into consideration how the shift may allow it  
3 to minimize the nearer-term costs of the LNP to the Company's customers,  
4 mitigate any further regulatory process delays by shifting capital spending,  
5 and reduce the financial demands on the Company and its customers  
6 during a period of uncertain federal energy policy regulation and the  
7 current economic downturn.

8 The Company believes that continuing, although at a slower pace  
9 than initially anticipated, is a reasonable and prudent course at this early  
10 stage of the project. PEF continues to need base load advanced nuclear  
11 generating capacity on its system, and PEF and Florida need a more  
12 diverse energy portfolio to decrease their dependence on fossil fuels such  
13 as coal, natural gas, and oil, which can be extremely volatile in price and  
14 supply. New, advanced-design nuclear power remains the best available  
15 technology to provide reliable electric service and to make significant  
16 reductions in greenhouse gas emissions, and Florida remains the national  
17 leader in progressive public policy to support the development of new,  
18 advanced nuclear power. The LNP continues to be the best base load  
19 generation option, taking into account cost, potential carbon regulation,  
20 fossil fuel volatility, and the benefits of fuel diversification. PEF,  
21 accordingly, remains committed to the project and the LNP remains  
22 feasible.



1 **Q. What are the Company's current plans for the LNP?**

2 A. PEF will focus on obtaining key state and federal permits, such as the  
3 SCA and COL. The Company is already working with the Consortium to  
4 amend the EPC contract to reflect the schedule shift and, to the extent  
5 possible, PEF's nearer-term focus on obtaining the Levy COL.

6 PEF has also filed with the Commission its actual/estimated 2009  
7 and 2010 costs for the LNP reflecting this reordered focus on obtaining  
8 key LNP permits as a result of the schedule shift. PEF has provided  
9 reasonable projections for costs to be incurred during the remainder of  
10 2009 and all of 2010. These costs are explained in more detail below and  
11 in Mr. Foster's testimony and exhibits. These projected costs were  
12 developed using the best available information to the Company at this  
13 time. Because of the schedule shift associated with the LNP, and its affect  
14 on the expenditures PEF must make during the near-term period, however,  
15 some of PEF's projected costs may change after the date of this filing.  
16 The Company's projections still are based upon its best-available  
17 information, therefore, the Commission should approve PEF's projections  
18 as reasonable pursuant to the Nuclear Cost Recovery Rule.

19 Alternatively and consistent with the Company's nearer-term focus  
20 on the impact of the LNP costs on the Company's customers, PEF  
21 proposes a nearly 50 percent reduction in cost recovery in 2010 over what  
22 the Company is otherwise entitled to collect under the Florida nuclear cost  
23 recovery legislation and applicable PSC rule. This alternative proposal to

1 the Company's request for recovery of its prudent LNP costs prior to 2009  
2 and reasonable 2009 and 2010 projected costs under the statute and rule is  
3 explained in detail in the testimony of Mr. Foster.  
4

5 **.Q. Can you generally explain what the LNP costs are for 2009 and 2010?**

6 A. Yes. From January to March 2009, PEF incurred reasonable and prudent  
7 EPC costs for the contract agreement with the Consortium. Costs incurred  
8 to date are for payments of contract milestones that are well defined in a  
9 number of areas, including equipment, manufacturing, procurement, and  
10 scheduling that have clear scope descriptions and division of  
11 responsibility.

12 From January to March 2009, PEF also incurred reasonable and  
13 prudent license application costs for the COL involving responses to the  
14 NRC's on-going RAIs and NRC Audits. PEF further incurred costs in  
15 connection with its SCA. PEF has been supporting the SCA review  
16 process during 2009. Along with the SCA, PEF is incurring costs in 2009  
17 for other environmental and permitting activities such as wetlands  
18 mitigation, the early Environmental Review Permit ("ERP") for  
19 construction of a barge slip (issued March 15, 2009), and the U.S. Army  
20 Corps of Engineers review and approval of Section 404 (Clean Water Act)  
21 permits that will be required to support the Levy site development. PEF  
22 will continue to focus its efforts, and corresponding costs, on these permits  
23 and the COL in 2009 and 2010.

1  
2 **III. GENERATION PRE-CONSTRUCTION ACTIVITIES**

3 **Q. What costs has PEF included in this filing for nuclear generation pre-**  
4 **construction costs?**

5 **A.** PEF has 2009 actual/estimated and 2010 projected Pre-Construction costs  
6 for generation for the Levy Nuclear Plant. PEF's total estimated 2009  
7 costs associated with the LNP, excluding transmission costs, are  
8 approximately \$275.9 million. PEF projects its 2010 costs for the LNP,  
9 excluding transmission costs, to be approximately \$100.4 million.  
10 Schedule AE-6 of Exhibit No. \_\_ (TGF-1) shows generation pre-  
11 construction costs for 2009 actual/estimates in the following categories:  
12 License Application development costs of \$38.8 million; Engineering,  
13 Design & Procurement costs of \$237.2 million; Clearing, Grading, and  
14 Excavation costs of \$0.2 million, and On-Site Construction Facilities costs  
15 of \$(0.3) million. Schedule P-6 of Exhibit No. \_\_ (TGF-2) breaks down  
16 the 2010 projected generation pre-construction costs into the following  
17 categories: License Application costs of \$24.1 million; Engineering,  
18 Design & Procurement costs of \$76.1 million; and On-Site Construction  
19 Facilities costs of \$0.1 million.

20  
21 **Q. Please describe what the License Application costs are, and why the**  
22 **Company has to incur them.**

1       A.    These License Application costs are necessary to support the Levy COLA,  
2       SCA, and necessary environmental and other permits. The LNP COLA was  
3       submitted July 30, 2008 and docketed by the NRC on October 6, 2008. After  
4       docketing, PEF entered Phase 2 of the COLA work. This work involves  
5       providing responses to NRC RAIs and NRC Audits. PEF expects the NRC  
6       license approval process to take approximately 42 months, following the RAIs,  
7       Audits, and any necessary hearings. PEF will continue to incur costs in 2009  
8       and 2010 to support the LNP COL.

9             PEF also incurred costs in connection with its SCA, which was completed  
10       and submitted to DEP on June 2, 2008. PEF has been supporting the SCA  
11       review process during 2009. The DEP issued its SCA report to PEF on January  
12       12, 2009, and the SCA hearing concluded in March 2009. DEP is scheduled to  
13       issue its order on PEF's SCA in May 2009, and the Governor and Cabinet  
14       sitting as the Siting Board are expected to vote on the Levy SCA by the end of  
15       the summer of 2009. PEF expects to continue to incur costs in 2009 to support  
16       the SCA.

17            Along with the SCA, PEF is incurring costs in 2009 for other  
18       environmental and permitting activities such as wetlands mitigation, the early  
19       ERP for construction of a barge slip (issued March 15, 2009), and the U.S.  
20       Army Corps of Engineers review and approval of Section 404 (Clean Water  
21       Act) permits that will be required to support the Levy site development.

22            These License Application costs are necessary to ensure the timely  
23       approval of the Company's COLA and SCA filings. Obtaining these key

1 regulatory approvals on a timely basis is currently the focus of PEF's efforts on  
2 the LNP.

3 PEF developed these preconstruction License Application cost estimates  
4 on a reasonable licensing and engineering basis, using the best available  
5 information to the Company, and consistent with utility industry and PEF  
6 practices. For the costs associated with the COLA review, PEF used the terms  
7 of its COLA contract as well as updated forecasts which are provided on a  
8 monthly basis by the contractor to estimate the costs it will incur for the  
9 technical support necessary for the NRC review. In addition, PEF based its  
10 projections on known project milestones necessary to obtain the requisite NRC  
11 and DEP licenses. Because PEF is using actual or expected contract costs,  
12 NRC estimates, its own experience, and relevant utility industry insight, PEF's  
13 cost estimates for the preconstruction License Application work are reasonable.

14  
15 **Q. Please describe what the Engineering, Design & Procurement costs are,  
16 and explain why the Company has to incur them.**

17 **A.** These costs include contracted services to engineer, procure, and construct two  
18 Advanced Passive Light Water reactors at the Levy Site. The EPC contract  
19 scope also includes design finalization of the standard AP1000 Power Block,  
20 site-specific detailed design, and construction of the Levy Nuclear Steam  
21 Supply System ("NSSS"), and balance of plant structures (turbine generator,  
22 etc.), including site buildings/structures/systems (such as cooling tower make-  
23 up intake structure, mechanical cooling towers, etc.).

1 PEF must incur these Engineering, Design & Procurements costs to  
2 support the timely approval of the COLA and SCA applications. Given the  
3 expected shift in the schedule due to the NRC Staff determination on the  
4 requested LWA scope, PEF has made the reasonable and prudent decision to  
5 limit its expenditures until the COL is issued.

6 PEF developed these preconstruction Engineering, Design & Procurement  
7 cost estimates on a reasonable engineering basis, using the best available  
8 information, consistent with utility industry and PEF practices. To develop the  
9 costs, PEF utilized cost information from the EPC contract. These projected  
10 costs may, however, change depending on the outcome of the contract  
11 amendment negotiations with the Consortium. For example, PEF currently  
12 expects that it can limit its 2009 and 2010 costs to completion of the  
13 engineering work that was already started until PEF and the Consortium have  
14 reached agreement on the scope of work necessitated by the shift in schedule.  
15 Further work or costs under the EPC, including long-lead equipment payments  
16 to maintain its place in the queue for such equipment, however, depend on  
17 PEF's negotiations with the Consortium to amend the EPC contract agreement.  
18 Because PEF is using actual or expected contract costs, its own experience, and  
19 utility industry practice, PEF's cost estimates for the preconstruction  
20 Engineering, Design & Procurement work are reasonable.

21

1 **IV. GENERATION CONSTRUCTION ACTIVITIES**

2 **Q. What costs has PEF included in this filing for generation construction**  
3 **costs?**

4 **A.** PEF has 2010 projected Construction costs for nuclear generation for the Levy  
5 Nuclear Plant. Schedule P-6 of Exhibit No. \_\_ (TGF-2) breaks down the 2010  
6 projected generation construction costs into the following categories: Real  
7 Estate Acquisition costs of \$10 million and Permanent Staff/Training costs of  
8 \$0.3 million.

9  
10 **Q. Please describe what the Real Estate Acquisitions costs are, and explain**  
11 **why the Company has to incur them.**

12 **A.** These costs include costs associated with acquisition of real estate for wetlands  
13 mitigation and for the blowdown path right-of-way corridor to the Crystal  
14 River Energy Complex ("CREC") discharge canal. It is critical to obtain this  
15 land now because if PEF were to wait to acquire access to this land until a later  
16 time, the land may not be available for purchase, since a governmental agency  
17 is involved. PEF believed that it is reasonable and prudent to acquire rights to  
18 this property at this time. Accordingly, PEF has decided to move forward with  
19 this purchase and lock in the price for the land, which is necessary for the LNP.

20 PEF developed these construction Real Estate Acquisition cost estimates  
21 on a reasonable engineering basis, using the best available information,  
22 consistent with utility industry and PEF practice. For the make-up structure  
23 easement, these cost estimates are based on the actual offer negotiated between

1 the State and PEF for purchase of the land at issue. Because PEF is using an  
2 actual offer upon which to base its costs, PEF's cost estimates for the  
3 construction Real Estate Acquisition work are reasonable.

4  
5 **Q. Please describe what the Permanent Staff/Training costs are, and explain**  
6 **why the Company has to incur them.**

7 **A.** These costs include initial staffing of experienced personnel necessary to  
8 develop the Levy Training program. AP1000 passive plant training program  
9 and simulator development is now underway in the U.S. industry, and this work  
10 is shared among specific AP1000 announced utilities. This training  
11 development work is a necessary step in advance of delivering training to  
12 permanent plant personnel who will operate and maintain the new Levy  
13 Nuclear Plant.

14 These Permanent Staff/Training costs are necessary to ensure that the  
15 required staff will be trained and ready when the fuel is loaded into the reactor.  
16 PEF needs highly skilled staff to operate the Levy units, and this training takes  
17 months to complete. Without an adequate number of trained and licensed staff,  
18 the Company will not be able to load the nuclear fuel and the project will  
19 necessarily be delayed.

20 PEF developed these Permanent Staff/Training construction cost estimates  
21 on a reasonable engineering basis, using the best available information,  
22 consistent with utility industry and PEF practice. PEF was able to use the  
23 knowledge gained from operating and training operators for its Crystal River 3



1 (“CR3”) nuclear unit to develop these cost estimates. Because PEF is using its  
2 own experience and utility industry practice, PEF’s cost estimates for the  
3 construction Permanent Staff/Training work are reasonable.  
4

5 **V. TRUE UP TO ORIGINAL COST FILING FOR 2009**

6  
7 **Q. Has the Company filed schedules to provide information truing up the**  
8 **original estimates to the actual costs incurred?**

9 **A.** Not at this time. As discussed in Mr. Foster’s testimony and addressed  
10 above, while PEF does have a reasonable basis for projecting near term  
11 project costs, until PEF is able to negotiate an EPC contract amendment  
12 with the Consortium, PEF will not be able to provide meaningful updates  
13 to the total project costs beyond the total project cost estimate that PEF  
14 has already provided.  
15

16 **Q. What is the total project estimate?**

17 **A.** The total project budgeted cost estimate, inclusive of AFUDC and fully  
18 loaded, remains about \$17.2 billion, as provided in the Company’s  
19 September 2008 LNP Integrated Project Plan (“IPP”). The total project  
20 cost estimate, however, may change depending upon the ultimate outcome  
21 of negotiations with the Consortium to amend the EPC contract. At that  
22 point, PEF will prepare, review, and obtain internal management approval  
23 of a revised budgeted cost estimate for the LNP. Until that occurs, the

1 Company-approved budgeted total costs for the LNP remains  
2 approximately \$17.2 billion. Simply put, there is no better total project  
3 cost estimate that can be provided at this time.  
4

5 **VI. RULE 25-6.0423(5)(c)5: LONG-TERM FEASIBILITY OF**  
6 **COMPLETING THE LNP**

7 **Q. Is the Levy Nuclear Project still feasible?**

8 **A.** Yes.

9  
10 **Q. Why is the LNP feasible?**

11 **A.** The LNP continues to be feasible for a number of reasons. First, the AP  
12 1000 reactor design remains a viable nuclear technology. Other utilities,  
13 including Southern Company and SCANA, continue to move forward with  
14 licensing of nuclear units using the AP 1000 design, and the Haiyang and  
15 Sanmen Projects in China have been progressing on schedule with the AP  
16 1000 design. PEF expects that the AP 1000 technology will continue to  
17 represent a viable and feasible choice for its LNP.

18 The LNP is also feasible from a project milestone perspective. To  
19 date, PEF has achieved every major LNP project milestone, with the  
20 exception of the LWA. Specifically, PEF chose a site, selected a reactor  
21 technology, obtained a need determination, applied for the SCA, applied  
22 for the COL, and executed an EPC agreement. The COL and the SCA are  
23 expected to be issued within the timeframe originally estimated by the

1 Company. There will be a schedule shift, but there is no reason now to  
2 believe that the SCA, COL, or any other permit needed for the LNP will  
3 not be issued and, therefore, the Company is confident the LNP can be  
4 completed.

5 Additionally, the essential reasons the Company selected the LNP  
6 to meet customer needs for future generation capacity have not  
7 fundamentally changed. PEF continues to need base load capacity in the  
8 future and new, advanced-design nuclear power remains the best available  
9 technology to provide reliable, base load electric service and to make  
10 significant reductions in greenhouse gas emissions. PEF and Florida  
11 continue to need a more diverse energy portfolio to reduce their reliance  
12 on fossil fuels such as coal, natural gas, and oil that can be volatile in  
13 price, subject to supply disruptions, and susceptible to foreign government  
14 and market influences. The LNP, accordingly, continues to be the best  
15 base load generation option, taking into account all the reasons PEF  
16 committed to the project in the first place.

17  
18 **Q. Does the project remain feasible despite the schedule shift?**

19 **A.** Yes, it does. The Company has analyzed the schedule shift, and it remains  
20 committed to the LNP to bring new nuclear generation to the State of  
21 Florida and its customers. Shifting the project for this time period is a  
22 reasonable and prudent course of action, given the unexpected events that  
23 have transpired.

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**Q. Has the Company updated its fuel forecasts and environmental forecasts presented in the need proceeding?**

**A.** Yes, consistent with the requirements set forth in Order Number PSC-08-0518-FOF-EI, the need order, the Company prepared updated fuel forecasts and environmental forecasts. The updated fuel forecast is reflected in my Exhibit No. \_\_ (GM-1), and the updated environmental forecast is reflected in my Exhibit No. \_\_ (GM-2).

**Q. What is the updated non-binding capital cost estimate for the LNP?**

**A.** Pursuant to the Company's LNP IPP, the updated non-binding capital cost estimate for the LNP is approximately \$17.2 billion. As I explained above, this remains the Company's approved, budgeted total cost for the LNP at this time, but the total project cost estimate may change depending upon the ultimate outcome of negotiations with the Consortium to amend the EPC contract. Until those negotiations are concluded, and the Company revises and management approves its budgeted total costs for the LNP based on the results of those negotiations, the total capital cost estimate remains about \$17.2 billion.

**Q. Consistent with the requirements set forth in the need order, please provide information regarding discussions pertaining to potential joint ownership in the LNP.**

1 A. PEF is continuing its negotiations with municipal, electric cooperative,  
2 and investor-owned utilities regarding potential joint ownership in the  
3 LNP. Although we cannot predict the ultimate outcome of these  
4 discussions, we remain confident that we will complete negotiations and  
5 execute joint ownership agreements with at least some potential co-  
6 owners. [REDACTED]

7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]  
10 [REDACTED]

11  
12 **VII. PROJECT MANAGEMENT AND COST CONTROL OVERSIGHT**

13 **Q. Has the Company implemented any additional project management**  
14 **and cost control oversight mechanisms for the Levy project, since the**  
15 **testimony you filed on March 2, 2009?**

16 **A.** Yes, the Company implemented several new policies to implement the  
17 EPC contract upon its execution. For example, an EPC Invoice Validation  
18 and Processing implementation procedure has been developed and  
19 implemented. The new procedure is utilized for each EPC invoice that is  
20 submitted. Prior to payment of invoices under the EPC contract, the costs  
21 go through a thorough review process for completeness, accuracy, and  
22 supporting documentation. All payments are approved utilizing the  
23 Company's Corporate Approval Policy. PEF is continuing to work on

1 developing, refining, and implementing these EPC implementing  
2 procedures, which provide specific project management tools to  
3 appropriately manage the execution of the EPC contract. Even though  
4 negotiations for an EPC contract amendment are underway, the EPC  
5 contract remains in force, and therefore the NPD project management  
6 controls, such as the EPC implementing procedures, are necessary and  
7 important to effective contract execution.

8 In addition to the EPC implementing procedures discussed above,  
9 NPD Management is in the process of reviewing the Project Execution  
10 Plan Submittal List completed and submitted by the Consortium on March  
11 31, 2009. The execution plan includes specific plans in the areas of Risk  
12 Management, Lessons Learned, Quality, Project Controls, and other  
13 project management plans delineated in the overall Project Execution Plan  
14 submitted. NPD Management has also worked with the Consortium and  
15 taken specific actions to improve the EPC Monthly Project Status Report  
16 with respect to both contractual requirements and project management  
17 areas required by NPD to effectively manage the project. Risk  
18 Management, Key Performance Indicators (“KPIs”), Audits, and  
19 Procurement are some of the focus areas that NPD is requiring more  
20 specific details in the Consortium’s report.

21 NPD has also significantly expanded the format of the NPD  
22 Performance Report upon execution of the EPC Agreement. The  
23 expanded format includes a more metrics based focus. KPIs continue to

1 be identified. The report also contains a section dedicated to project risk  
2 and status updates from the vendor prepared monthly reports. A KPI Lead  
3 Team was established to develop and monitor project KPI's.

4 NPD continues to develop the process that implements a more  
5 robust NPD Risk Management process that aligns the LNP with the  
6 standards set by the Company's Project Management Center of  
7 Excellence. NPD has completed the Owner Acceptance Review of the  
8 Risk Software Platform Evaluation Report and the NPD Risk Register and  
9 Action Plan documents submitted by the Owner Engineer. A platform has  
10 been selected and the process has commenced to procure the new software  
11 and implement the plan to migrate the data to the new software. The NPD  
12 Risk Management procedure will also be revised to align with the new  
13 Project Management Center of Excellence standards and incorporate the  
14 process steps NPD is implementing for Risk Management. In addition to  
15 Risk Management, NPD will continue to implement additional procedures  
16 that the Project Management Center of Excellence will be establishing for  
17 project management processes. Cost Management and Time Management  
18 are two examples.

19 Project Controls is in process of completing and issuing a Schedule  
20 Controls procedure. This procedure provides instructions for developing  
21 and maintaining the Levy Integrated Master Schedule and Integrated  
22 Master Work Breakdown Structure. Also, work has started on developing  
23 significant revisions to the Levy Project Execution Plan since EPC

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contract execution. Section contributors to the plan are in the process of developing inputs for their assigned subject areas and submitting the sections to Project Controls for review. NPD continues to recruit and secure appropriate staffing to build out all aspects of the project infrastructure to ensure appropriate overall project controls.

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

**A. Yes, it does.**



**PEF Nuclear Cost Recovery Filing**  
 Nov'08 Long Term Fuel Forecasts - Table (1 of 2)

	FUEL 2 COAL1.6	FUEL 5 COAL 5.0	FUEL 4 NUCLEAR	FUEL 35 LNP U1	FUEL 36 LNP U2	FUEL 6 OIL 1.5	FUEL 7 OIL 1.1	FUEL 31 OIL 2.0
2011	6.29	4.41	0.57			17.95	18.18	17.66
2012	4.80	3.52	0.76			14.32	14.41	14.19
2013	4.92	3.62	0.76			14.60	14.70	14.46
2014	5.10	3.74	0.85			14.61	14.72	14.47
2015	5.25	3.83	0.85			14.66	14.78	14.51
2016	5.40	3.93	0.88	0.93		14.72	14.83	14.56
2017	5.55	4.03	0.88	0.93	0.96	14.71	14.83	14.54
2018	5.70	4.14	0.87	0.86	0.96	14.46	14.59	14.29
2019	5.83	4.24	0.87	0.81	0.87	14.27	14.40	14.10
2020	5.96	4.34	0.87	0.78	0.83	14.22	14.36	14.03
2021	6.11	4.45	0.87	0.77	0.79	14.32	14.46	14.13
2022	6.32	4.59	0.88	0.78	0.78	14.53	14.68	14.34
2023	6.52	4.73	0.88	0.79	0.79	14.90	15.04	14.70
2024	6.71	4.86	0.92	0.81	0.81	15.15	15.30	14.95
2025	6.90	5.00	0.92	0.82	0.82	15.40	15.56	15.19
2026	7.10	5.14	0.96	0.84	0.84	15.66	15.82	15.45
2027	7.31	5.28	0.96	0.86	0.86	15.93	16.10	15.70
2028	7.53	5.43	1.02	0.87	0.87	16.20	16.37	15.97
2029	7.70	5.55	1.04	0.89	0.89	16.56	16.74	16.33
2030	7.87	5.68	1.06	0.91	0.91	16.94	17.12	16.69
2031	8.05	5.81	1.08	0.93	0.93	17.32	17.50	17.07
2032	8.23	5.94	1.10	0.94	0.94	17.71	17.90	17.45
2033	8.42	6.07	1.12	0.96	0.96	18.11	18.30	17.85
2034	8.60	6.21	1.14	0.98	0.98	18.51	18.71	18.25
2035	8.80	6.35	1.17	1.00	1.00	18.93	19.13	18.66
2036	9.00	6.49	1.19	1.02	1.02	19.36	19.56	19.08
2037	9.20	6.63	1.21	1.04	1.04	19.79	20.00	19.51
2038	9.41	6.78	1.24	1.06	1.06	20.24	20.45	19.95
2039	9.62	6.94	1.26	1.08	1.08	20.69	20.91	20.40

**PEF Nuclear Cost Recovery Filing**  
 Nov'08 Fuel Forecasts - Fuel Table (2 of 2)

	FUEL 10 GAS FGTF	FUEL 11 GAS FGTI	FUEL 12 GAS ELBA	FUEL 14 GAS SONI	FUEL 18 GulfFirm	FUEL 19 GAS GLFI	FUEL 22 GGLFF HG	FUEL 42 GEN SESH	FUEL 27 Dist 0.3	FUEL 28 Dist 0.5	FUEL 29 Dist ULS
2011	11.11	11.11	11.11	11.11	11.11	11.11	7.49	11.11	28.50	28.69	28.55
2012	9.82	9.82	9.82	9.82	9.82	9.82	7.34	9.82	20.21	19.95	20.61
2013	9.92	9.92	9.92	9.92	9.92	9.92	7.19	9.92	20.60	20.36	20.96
2014	10.00	10.00	10.00	10.00	10.00	10.00	7.14	10.00	20.68	20.45	21.03
2015	10.13	10.13	10.13	10.13	10.13	10.13	7.17	10.13	20.75	20.53	21.07
2016	10.43	10.43	10.43	10.43	10.43	10.43	0.00	10.43	20.81	20.60	21.12
2017	10.72	10.72	10.72	10.72	10.72	10.72	0.00	10.72	20.77	20.57	21.06
2018	11.05	11.05	11.05	11.05	11.05	11.05	0.00	11.05	20.47	20.29	20.75
2019	11.15	11.15	11.15	11.15	11.15	11.15	0.00	11.15	20.26	20.08	20.52
2020	11.34	11.34	11.34	11.34	11.34	11.34	0.00	11.34	20.23	20.06	20.50
2021	11.49	11.49	11.49	11.49	11.49	11.49	0.00	11.49	20.43	20.25	20.70
2022	11.72	11.72	11.72	11.72	11.72	11.72	0.00	11.72	20.80	20.61	21.08
2023	12.04	12.04	12.04	12.04	12.04	12.04	0.00	12.04	21.36	21.17	21.65
2024	12.35	12.35	12.35	12.35	12.35	12.35	0.00	12.35	21.78	21.58	22.08
2025	12.69	12.69	12.69	12.69	12.69	12.69	0.00	12.69	22.20	21.99	22.51
2026	13.02	13.02	13.02	13.02	13.02	13.02	0.00	13.02	22.63	22.42	22.95
2027	13.29	13.29	13.29	13.29	13.29	13.29	0.00	13.29	23.07	22.85	23.41
2028	13.63	13.63	13.63	13.63	13.63	13.63	0.00	13.63	23.52	23.29	23.87
2029	13.94	13.94	13.94	13.94	13.94	13.94	0.00	13.94	24.05	23.82	24.40
2030	14.25	14.25	14.25	14.25	14.25	14.25	0.00	14.25	24.59	24.35	24.95
2031	14.58	14.58	14.58	14.58	14.58	14.58	0.00	14.58	25.15	24.90	25.51
2032	14.90	14.90	14.90	14.90	14.90	14.90	0.00	14.90	25.71	25.46	26.09
2033	15.24	15.24	15.24	15.24	15.24	15.24	0.00	15.24	26.29	26.03	26.67
2034	15.58	15.58	15.58	15.58	15.58	15.58	0.00	15.58	26.88	26.62	27.28
2035	15.93	15.93	15.93	15.93	15.93	15.93	0.00	15.93	27.49	27.22	27.89
2036	16.29	16.29	16.29	16.29	16.29	16.29	0.00	16.29	28.11	27.83	28.52
2037	16.66	16.66	16.66	16.66	16.66	16.66	0.00	16.66	28.74	28.46	29.16
2038	17.03	17.03	17.03	17.03	17.03	17.03	0.00	17.03	29.38	29.10	29.81
2039	17.41	17.41	17.41	17.41	17.41	17.41	0.00	17.41	30.05	29.75	30.48

**PEF Nuclear Cost Recovery Filing**  
**Nov'08 Emission Cost Estimates**

	1 SO2 \$/ton	2 NOX \$/ton	5 Hg \$/oz	EBS CO2 \$/ton	EPA CO2 \$/ton	MIT CO2 \$/ton	Lieberman Warner CO2 \$/ton
2011	787	2,856	1,358	-	-	35	-
2012	716	2,020	1,464	12	-	38	-
2013	600	1,909	1,572	13	-	41	-
2014	476	2,570	1,684	14	-	43	-
2015	333	3,071	1,798	15	22	46	60
2016	173	2,863	1,940	16	24	50	64
2017	157	2,764	2,088	17	26	53	68
2018	146	2,665	2,239	18	28	56	72
2019	134	2,564	2,395	20	30	60	76
2020	120	2,574	2,556	21	32	63	80
2021	105	2,578	2,614	23	34	68	86
2022	75	2,581	2,673	24	37	72	93
2023	59	2,584	2,733	26	39	77	99
2024	50	2,586	2,794	28	41	81	106
2025	23	2,589	2,857	30	44	86	112
2026	23	2,592	2,921	32	48	92	121
2027	23	2,603	2,987	34	52	98	131
2028	23	2,613	3,054	37	56	104	140
2029	23	2,613	3,123	39	59	111	149
2030	23	2,613	3,193	42	63	117	158
2031	23	2,613	3,265	45	69	125	173
2032	23	2,613	3,339	49	74	133	188
2033	23	2,613	3,414	52	79	141	203
2034	23	2,613	3,491	56	85	150	218
2035	23	2,613	3,569	60	90	159	233
2036	23	2,613	3,649	64	98	170	251
2037	23	2,613	3,732	69	106	181	269
2038	23	2,613	3,816	74	113	192	287
2039	23	2,613	3,901	79	121	203	305

- Notes:
1. Previous Mercury (Hg) estimates are used pending new Federal requirements.
  2. Potential impacts of the Waxman-Markey Bill will be reviewed when more information is available.