BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear Cost Recovery Clause

DOCKET NO. 100009
Submitted for filing: August 3, 2010

REDACTED

REBUTTAL TESTIMONY OF JOHN ELNITSKY

**ON BEHALF OF
PROGRESS ENERGY FLORIDA**

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IN RE: NUCLEAR COST RECOVERY CLAUSE

BY PROGRESS ENERGY FLORIDA

FPSC DOCKET NO. 100009

REBUTTAL TESTIMONY OF JOHN ELNITSKY

I. INTRODUCTION.

Q. Please state your name and business address.

A. My name is John Elnitsky. My business address is 299 1st Avenue North, St. Petersburg, Florida.

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

A. I am currently employed by Progress Energy, Inc. as the Vice President of New Generation Programs and Projects ("NGPP"). I assumed this position in May, 2010. Previously, my position was Vice President of the Nuclear Plant Development ("NPD") organization. I assumed that position in May, 2009. Prior to this appointment, I was employed by Progress Energy as its Vice President of Generation and Transmission Construction ("G&TC").

Q. What is your role with respect to the development of the nuclear power plants, Levy Units 1 and 2?

A. As the Vice President of New Generation Programs and Projects, my role with respect to the development of the Levy nuclear power plant project ("LNP") is the same as it was when I was Vice President of NPD. I am still responsible for all aspects of the LNP including engineering, licensing, transmission, and the direct management of the Engineering, Procurement, and Construction ("EPC") agreement with Westinghouse and Shaw, Stone & Webster (the "Consortium"). The Company reorganized in May 2010 to incorporate NPD into the New Generation Programs and Projects Department ("NGPPD"). As the Vice President of NGPP I am still responsible for the overall program management of the LNP including the associated base load transmission system projects.

The program oversight and enterprise guidance for the LNP remains unchanged. The charter continues to provide program execution oversight including ongoing review of performance and decision making on the LNP under the Levy Program Performance Review. In terms of governance and execution oversight role, I continue to report to Jeff Lyash, the Levy Program's Executive Sponsor, who continues to have responsibility for the LNP governance and execution oversight. Administrative oversight, however, of the LNP continues under the Corporate Development and Improvement group under the leadership of Paula Sims, the Senior Vice President of Corporate Development and Improvement. I also continue to report on the LNP to the Senior Management Committee ("SMC"). The SMC has senior management responsibility for the LNP and still includes Mr. Lyash, as well as Progress Energy's Chief Executive Officer ("CEO"), Chief Financial Officer and the CEOs of PEF and Progress Energy Carolinas.

Q. Did you file direct testimony in this proceeding?

A. Yes, I did.

Q. Have you reviewed the Intervenor and Staff Witness Testimony filed in this Docket?

A. Yes. I reviewed and I will provide rebuttal testimony to the following intervenor and Staff direct testimony: (1) William R. Jacobs, Jr., Ph.D. ("Jacobs") filed on behalf of the Office of Public Counsel ("OPC"); (2) Dr. Mark Cooper ("Cooper") filed on behalf of the Southern Alliance for Clean Energy ("SACE"); (3) Arnold Gundersen ("Gundersen") filed on behalf of SACE; and (4) Mr. William Coston and Mr. Kevin Carpenter filed jointly on behalf of the Florida Public Service Commission ("FPSC" or the "Commission") Staff. Also, Mr. Jeff Lyash will provide rebuttal testimony to certain Intervenor and Staff witness direct testimony in this proceeding.

II. PURPOSE AND SUMMARY OF REBUTTAL TESTIMONY.

Q. What is the purpose of your rebuttal testimony?

A. I will explain the issues and costs that are undisputed by any Intervenor or Staff witness in this proceeding. I will also explain how the Company's evaluation of options included all viable options regarding the LNP in light of the schedule shift resulting from licensing delays and other enterprise risks that have affected the project. I will also explain that this evaluation led the Company to identify specific goals for negotiations with the Consortium under the EPC agreement that were necessary for the Company to move forward with the LNP. Specifically, PEF needed favorable contract amendment terms to proceed with the LNP rather than cancel the LNP. I will further explain that the Company was able to amend the EPC agreement and implement its decision to proceed with the LNP on a slower pace with favorable terms for PEF and its customers.

I will explain that the Nuclear Regulatory Commission ("NRC") is advancing NRC review of the Westinghouse AP1000 design and the application of that design to active sites for the development of new nuclear generation with the AP1000 reactor design -- including the LNP -- for ultimate approval by the NRC. I will also explain the current status of PEF's Combined Operating License Application ("COLA") for the LNP, including the status of NRC requests for additional information ("RAIs"), to demonstrate that there are no current regulatory or technical issues that prevent NRC approval of the Combined Operating License ("COL") for the LNP.

I will respond to the testimony of these intervenor witnesses from my perspective as the person directly responsible for the evaluation of LNP options and the recommendations to senior management regarding the LNP. Mr. Lyash will provide rebuttal testimony regarding the options reviewed and the decision made by the Company from the perspective of senior management. Mr. Lyash will also respond to the intervenor witness testimony challenging the feasibility of completing the plant.

Q. Do you have any exhibits to your rebuttal testimony?

A. Yes. I am sponsoring the following exhibits:

- Exhibit No. ___ (JE-5), PEF's response to OPC Interrogatory Number 46;
- Exhibit No. ___ (JE-6), PEF's evaluation of an option to proceed with the COLA to obtain the LNP COL and then cancel the LNP;
- Exhibit No. ___ (JE-7), Direct Testimony and Exhibits of William R. Jacobs, Jr., Ph.D., before the Georgia Public Service Commission in the Matter of: Georgia Power

Company's Second Semi-Annual Vogtle Construction Monitoring Report, Docket No.: 29849;

- Exhibit No. ___ (JE-8), Remarks by Kristine L. Svinicki, Commissioner, U.S. Nuclear Regulatory Commission, NRC News, No. S-10-016, dated June 8, 2010;
- Exhibit No. ___ (JE-9), Remarks by President Obama regarding new nuclear generation development, ABC News, Political Punch at http://blogs.abcnews.com/politicalpunch /2010/02/obama-says-safe-nuclear-power-plants-are-a-necessary-investment.html (Feb. 16, 2010) (last accessed July 26, 2010); and
- Exhibit No. ___ (JE-10), Bar Chart of LNP RAIs received by PEF by month between November 2008 and March 2010.

These exhibits were prepared by me or the Company under my direction and control, or they are documents regularly used by the Company in the normal course of business, and they are true and correct. Also, I sponsor and propose for identification the EPC agreement and amendments for use at the final hearing subject to the Commission's requirements for the use of confidential exhibits at Commission hearings. The EPC agreement and amendments are subject to strict contractual conditions of confidentiality, however as I explained in my direct testimony, they have been made available pursuant to those contractual conditions to the Commission staff and intervening parties who have requested to view them, and have been filed in this docket pursuant to a confidentiality request.

Q. Please summarize your rebuttal testimony.

A. PEF was faced last year with a schedule shift to the LNP due to the NRC Limited Work Authorization ("LWA") determination. PEF invoked the provisions in the EPC agreement that address such situations and proceeded to collect the necessary information to make an informed decision to address the LNP schedule shift. We prudently evaluated the increasing uncertainties and risks associated with the LNP as we collected the information necessary to make this decision. We subsequently identified and evaluated all reasonable options, including project cancellation. We recommended to senior management the option to continue with the LNP by extending the partial suspension and focusing project work on the LNP licensing only after it was clear we were able to negotiate a favorable amendment to the EPC agreement to implement this option by preserving the contractual and long-term nuclear generation benefits. Audit staff reviewed this decision-making process and the amendments to the EPC agreement and concluded that (i) the Company was able to negotiate a favorable amendment with limited fee impact, and (ii) the Company's decision was a reasonable approach at this point in time given the circumstances facing the Company. We think our recommendation to senior management and the Company's decision was and is a reasonable and prudent decision under the circumstances.

The LNP is feasible from a regulatory and technical perspective. The NRC is proceeding with the AP1000 design review towards a final rule approving that nuclear reactor design and the NRC is proceeding with its review of the LNP COLA towards issuance of the LNP COL. There are no technical design issues that have side-tracked this on-going NRC licensing review and there is no indication that any technical issue with respect to the AP1000 design will prevent the successful completion of these licensing activities and the application of the AP1000 nuclear reactor design to the LNP site. Nuclear reactors can and have been built and operated in Florida. Cancellation of the project is simply not supported by the regulatory and technical feasibility of the LNP.

III. PEF TESTIMONY UNDISPUTED BY INTERVENORS AND STAFF.

Q. What do you understand the Commission will determine in this proceeding?

A. My understanding is that, pursuant to Section 366.93, Florida Statutes, and Rule 25-6.0423, F.A.C., the Commission will determine (1) the prudence of PEF's actual LNP costs for 2009; (2) the reasonableness of PEF's actual/estimated LNP costs for 2010; (3) the reasonableness of PEF's projected LNP costs for 2011; (4) the prudence of PEF's program management, contracting, and oversight controls for 2009; and (5) the prudence of PEF's accounting and cost oversight controls for 2009. The Commission will also review and approve the Company's analysis of the feasibility of completing the nuclear power plants pursuant to Rule 25-6.0423(5)(c)5, F.A.C.

Q. Have any of the Staff and intervenor witnesses asserted in their testimony that PEF's actual LNP costs for 2009 are not prudent?

A. No, they have not. Not a single Staff or intervenor witness contends that any of the actual costs the Company incurred for the LNP for 2009 are imprudent.

Jacobs specifically says in his testimony that he was asked by OPC to conduct a review and evaluation of PEF's requests for authority to collect historical costs associated with the LNP. (Jacobs Test., p. 3, L. 18-23). Nowhere in his testimony, however, does Jacobs identify any historical 2009 LNP cost that PEF seeks to collect that he finds was imprudently incurred.

Cooper and Gundersen do not address PEF's historical costs at all. Instead, these intervenor witnesses address the long-term feasibility of completing the Levy nuclear power plants. (Cooper Test., p. 3, L. 1-6; Gundersen Test., p. 3, L. 12-20). Feasibility requires PEF to demonstrate and the Commission to find that the nuclear power plants are capable of being completed. This is a forward-looking determination based on what is known today. In fact, Gundersen makes clear that feasibility is forward-looking. (Gundersen Test., p. 3, L. 12-20). Both Gundersen and Cooper state that they address only the reasonableness and/or prudence of incurring "additional" costs on the project because they believe the LNP is not feasible. (Cooper Test., p. 3, L. 1-6; Gundersen Test., p. 3, L. 12-20). They, therefore, are not addressing the prudence of PEF's historical 2009 LNP costs.

Staff testimony and the Staff audit report do not identify any cost PEF incurred on the LNP in 2009 that is imprudent. Staff auditors do express some "concerns" with respect to the costs for the Operational Readiness group for the LNP, but Staff auditors do not state that these costs were imprudently incurred. (Staff Audit Report, p. 15). The Staff auditors' concerns center on the fact that these costs were incurred at a time when the LNP schedule was in flux and the Company was considering project cancellation. (Id.). The Staff auditors' concerns, however, are misplaced.

First, as the Staff auditors recognize, the Operational Readiness group has an important role in the successful implementation of the LNP. (Id.). This group is responsible for developing the necessary programs and procedures consistent with all applicable regulatory requirements for the ultimate operation of the nuclear power plants and working in concert with the AP1000 owners' group in an efficient manner. This group is also responsible for developing the necessary procedures and training material for plant operators and recruiting and training those operators to operate the nuclear power plants. The work that this group must do to ensure that the plants can be operated must be initiated well in advance of the commercial operation of the plants. Staff auditors agree this work will take substantial time. (Id.). As a result, PEF must start now with this work. PEF incurred approximately $400,000 in 2009 and expects to incur about the same amount in 2010 for the operational readiness group related work. This work is in its initial stages, but it is necessary to ensure that PEF will have the programs and procedures in place, and qualified operators trained and ready to go, to operate the LNP.

Second, Staff's "concerns" are directed at the timing of these costs and not the necessity of these costs for the project. Staff points out that these costs were incurred at a time when the LNP schedule was in flux and the Company was considering cancellation of the LNP. (Id.). The LNP schedule has been in flux since the NRC's LWA determination in late January 2009. PEF, however, did not and could not make an instant decision at that time with respect to the LNP schedule. Rather, as I explain in my direct testimony, the NRC's LWA determination initiated a process by which PEF collected and evaluated the necessary information to make an informed decision regarding the LNP. PEF, therefore, reasonably and prudently collected and evaluated this information, and considered all viable options for the LNP before making a decision.

These options included project cancellation, but also included a scenario to proceed with the LNP as quickly as possible. Because project continuation on an aggressive a schedule as circumstances allowed was one viable option, PEF continued to perform the work and incur the costs --- like the operational readiness costs --- that was required if this option was selected. These costs were therefore reasonably and prudently incurred in 2009 and 2010 as the Company evaluated the information necessary to make an informed decision about how to proceed and to ensure that continuation as quickly as possible was in fact a viable option under consideration until that decision was made.

Q. Have any of the Staff or intervenor witnesses asserted in their testimony that any of PEF's actual/estimated 2010 costs are unreasonable?

A. No. None of the Staff or intervenor witnesses identify any specific, actual/estimated 2010 LNP cost that is not reasonable. The actual/estimated 2010 LNP costs reflect the schedule shift caused by the NRC's LWA determination, the Company's focus on obtaining key state and federal permits for the LNP, and additional uncertainties affecting the LNP timing, cost, and risk created by events and circumstances beyond our control, while fulfilling previous contractual obligations. OPC witness Jacobs says he was asked by OPC to conduct a review and evaluation of PEF's requests for authority to collect projected costs associated with the LNP. (Jacobs Test., p. 3, L. 18-23). Jacobs, however, nowhere identifies any actual/estimated 2010 LNP cost that he claims is unreasonable. None of the other intervenor witnesses challenge the reasonableness of any of PEF's specific cost estimates for 2010.

Q. Have any of the Staff or intervenor witnesses asserted in their testimony that any of PEF's projected 2011 costs are unreasonable?

A. No. None of the Staff or Intervenor witnesses identify any specific, projected 2011 cost that they claim is unreasonable. As I previously explained, OPC witness Jacobs says he was asked by OPC to conduct a review and evaluation of PEF's requests for authority to collect projected costs associated with the LNP. (Jacobs Test., p. 3, L. 18-23). Jacobs does not identify any specific, projected LNP cost that he claims is unreasonable. Jacobs does assert that the Commission "might" want to consider placing "some" of PEF's proposed expenditures at risk if they believe PEF has not prudently evaluated the LNP options. (Id., p. 13, L. 16-21). But, again, Jacobs nowhere says that any of the projected 2011 LNP costs are unreasonable for any specific reason, nor does he identify any particular amount that he claims should be placed "at risk." Jacobs, therefore, does not challenge PEF's specific testimony that its 2011 projected LNP costs are reasonable. Also, as explained below and in the rebuttal testimony of Mr. Jeff Lyash, because PEF reasonably and prudently evaluated the LNP options and made a reasonable and prudent decision to proceed with the LNP on a slower pace, there is no basis for the Commission to conclude that PEF's projected 2011 LNP costs are unreasonable.

Cooper and Gundersen argue the LNP is not feasible, that it should be cancelled, and that customers should not have to pay any "additional" costs. (Cooper Test., p. 3, L. 1-6, p. 4, L. 10-12, p. 5, L. 10-12; Gundersen Test., p. 3, L. 12-20, p. 4, L. 15-17). They nowhere identify with specificity in their testimony what these "additional" costs are that they claim customers should not pay. Moreover, they also do not challenge PEF's specific testimony that its 2011 projected costs are reasonable. Rather, they assert additional costs should not be recovered solely because they believe the LNP is not feasible. Because PEF has demonstrated that the LNP is feasible, as explained in detail in the direct and rebuttal testimony of Mr. Lyash, there is no basis for the Commission to conclude PEF's projected 2011 costs are not reasonable.

Q. Do the Staff or intervenor witnesses assert that PEF's LNP program management, contracting, and oversight controls are unreasonable or imprudent?

A. No, they do not. Jacobs testifies that he reviewed many internal documents, status reports, and correspondence with regulatory authorities to evaluate the issues related to project schedule and risk management. (Jacobs Test., p. 4, L. 18-20). Jacobs does not claim that PEF's LNP program management, including its risk management, contracting, and oversight controls are unreasonable or imprudent.

Q. Do the Staff or intervenor witnesses assert that PEF's LNP accounting and cost oversight controls are unreasonable or imprudent?

A. No, they do not.

Q. If the intervenor witnesses do not make any of the claims you have just described what do the intervenor witnesses claim in their testimony?

A. OPC witness Jacobs challenges PEF's decision to proceed with the LNP on a slower pace solely because he claims PEF did not analyze all reasonably "possible" outcome scenarios. (Jacobs Test., p. 7, L. 16-19). Jacobs claims the omitted, reasonably "possible" scenario is the continuation of the LNP and cancellation after receipt of the LNP COL in late 2012. (Id.). Jacobs' only recommendation to the Commission regarding the LNP is that the Commission order PEF to analyze this omitted scenario and, based on that additional analysis, justify its decision. (Id., p. 21, L. 8-13). Jacobs claims that if this scenario results in "significantly" greater costs to customers than immediate project cancellation, then, the Company should justify why the option selected is preferred over immediate cancellation. (Id., p. 8, L. 31-33, p. 9, L. 1-2).

Jacobs believes PEF's evaluation was incomplete because Jacobs assesses the LNP risks differently. (Id., pp. 9-11). Indeed, the gist of Jacobs' testimony is that he would have made a different decision based on his assessment of the LNP risks. (Id.). The fact that Jacobs would have made a different decision does not mean that PEF's decision was unreasonable or imprudent. In fact, Jacobs does not challenge the prudence of PEF's decision nor does he express the opinion that PEF made an unreasonable or imprudent decision.

SACE witnesses Cooper and Gundersen, as I explained above, challenge the "long-term feasibility" of the LNP. (Cooper Test., p. 4, L. 21-22, p. 5, L. 1-12; Gundersen Test., p. 9, L. 8-20). Cooper and Gundersen both claim that PEF's determination that the LNP is feasible is erroneous, the LNP is, in their view, not feasible over the long-term, and, for that sole reason, the LNP should be cancelled and PEF's customers should pay no "additional" costs. (Cooper Test., p. 4, L. 9-12, p. 5, L. 10-12; Gundersen Test., p. 4, L. 15-17).

Gundersen expresses no opinion with any certainty, rather, he speculates that the LNP is not feasible for possible technical and regulatory issues associated with the AP1000 design and the application of that reactor design to the LNP site. (Gundersen Test., pp. 16-25). His speculation is contradicted by the reality of the regulatory review of the AP1000 design and the LNP and other utility COLAs for the AP1000 design before the NRC, as well as the fact that five nuclear reactors have been built and are operating in Florida for decades, including one just eight miles from the LNP site at Crystal River.

Cooper claims the LNP is not economically feasible over the long term. Cooper substitutes his fuel cost, environmental cost, and load assumptions for the Company's forecasts. (Cooper Test., p. 14, L. 15-22, p. 15, L. 1-10, pp. 19-21). As Mr. Lyash explains in his rebuttal testimony, the Company's forecasts in its quantitative feasibility analysis are based on methods approved by the Commission in this proceeding last year and in other proceedings before the Commission.

IV. REASONABLENESS AND PRUDENCE OF PEF DECISION.

Q. Was PEF reasonable and prudent in deciding to proceed with the LNP on a slower pace by extending the partial suspension and focusing work on obtaining the COL?

A. Yes, it was. As I explained in detail in my direct testimony, this decision was the result of a deliberate, rational, decision-making process consistent with best management practices in our industry. We employed the contractual mechanisms under the EPC agreement to initiate this process and obtain the information we needed to make an informed decision. We obtained this information from the Consortium, analyzed and evaluated this information, and we considered all relevant factors including the enterprise risks beyond our control that could affect the decision regarding this project. This process was reasonable and prudent and necessary to make a decision that was in the best interests of the Company and its customers. Indeed, for all the reasons that I provided at pages 29 and 30 in my direct testimony, I believe this decision was in the best interests of the Company and its customers and that is why I recommended this decision to senior management.

Q. Does Jacobs express the opinion that this decision was unreasonable or imprudent?

A. No, he does not. Jacobs essentially argues that the Company's decision is incomplete because he says the Company did not consider an option that should have been considered before the Company made its decision. He recommends that the Commission order the Company to evaluate this option and justify its decision based on that evaluation.

Q. What option does Jacobs contend PEF should have considered?

A. Jacobs claims the Company should have evaluated the option of proceeding with the LNP under the extended partial suspension until the Company obtains the COL --- which is what the Company has decided to do --- and then cancelling the project at that time. (Jacobs Test., pp. 7-9). In other words, Jacobs argues that the Company should have evaluated cancellation at a future point in time after the LNP COL is obtained from the NRC in addition to the cancellation option that the Company did evaluate.

Q. Why does Jacobs claim that PEF should have evaluated a future cancellation option at this time?

A. Jacobs claims this future cancellation option should have been evaluated based on his assessment <u>at this time</u> of the risks facing the project. Jacobs agrees with the Company that there is increased uncertainty surrounding the project as a result of the project enterprise risks described by Mr. Lyash in his direct testimony. (Jacobs Test., p. 11, L. 1-4). Jacobs argues that the past year has not resulted in additional clarity or certainty on many of the risks that Mr. Lyash identifies. (Id., p. 11, L. 19-20). He concedes that PEF may gain sufficient clarity and certainty with respect to these risks by the time PEF obtains the LNP COL in 2013, but he argues that it is just as likely there will be no additional certainty with respect to these risks by 2013 and that the risks may in fact increase. (Id., p. 10, L. 16-19). He contends that PEF cannot demonstrate now that there will be sufficient clarity or certainty with respect to "many" of these risks to justify a decision to proceed with the LNP after the COL is issued. (Id., p. 11, L. 20-22). Based on this current risk assessment, Jacobs concludes that cancellation after the COL is obtained is a likely outcome and, therefore, it should have been evaluated.

Q. Did PEF consider all reasonable options for the LNP?

A. Yes. PEF agrees with Jacobs that there are increased risks associated with the project. These increased risks are explained in detail in my direct testimony and the direct testimony of Mr. Lyash. PEF also agrees with Jacobs that PEF cannot demonstrate at this time that there will in fact be more certainty with respect to these risks by the time PEF obtains the COL for the LNP and that it is equally likely today that these risks will increase as decrease by that future date. What Jacobs is really saying then, is that based on his assessment of these risks today, project cancellation is a reasonable option that must be considered. PEF agrees that project cancellation is a reasonable option that PEF had to and did in fact consider given the risks facing the project. That is exactly what PEF told Jacobs in response to OPC interrogatory 46. PEF explained that "the Company did evaluate a full project cancellation scenario." See Exhibit No. ___ (JE-5) to my rebuttal testimony.

Q. Jacobs contends at page 8 of his testimony that PEF should have considered the additional costs PEF would incur if it decided today that cancellation in 2013 after obtaining the COL was a reasonably possible outcome because those costs would be higher. Is he correct?

A. PEF will incur additional costs if PEF continues with the project for three more years and cancels it in 2013 after obtaining the LNP COL. PEF certainly knew this at the time it evaluated the options for the LNP and made its decision. PEF also knew what these costs would likely be during its evaluation of the options for the LNP.

Indeed, an estimate of the costs associated with the option of proceeding with the project under the partial suspension of the EPC agreement, and focusing on obtaining the COL and then cancelling the project, was fundamentally imbedded in the presentations to senior management that are included as Exhibit No. ___ (JL-6) to Mr. Lyash's direct testimony and Exhibit No. ___ (JE-2) to my direct testimony in this proceeding and in the discussions surrounding those presentations. Any additional, potential costs resulting from this option that are not expressly identified in those presentations were still known to the Company and discussed within the NPD and SMC at the time the Company evaluated its options for the LNP. The Company was certainly aware that it would incur additional costs and what those costs might be if it decided to cancel the project after it received the LNP COL at the time it evaluated the LNP options.

In any event, PEF has included as Exhibit No. ___ (JE-6) to my testimony the Company's express evaluation of the costs of continuing with the project by amending the EPC agreement and focusing on obtaining the COL and then cancelling the project. This is called "Option 4" in Exhibit No. ___ (JE-6) and this is the option that Jacobs says PEF should have evaluated. As I have explained, PEF evaluated this "Option 4" because the costs of this "option" were inherent in PEF's evaluation of all options for the LNP.

As you can see in Exhibit No. ___ (JE-6), "Option 4" includes the [redacted] in costs for "Option 3," Continued Partial Suspension, because PEF will incur these costs over the next three years to obtain the COL for the LNP. These are the same costs that are included in the SMC presentations included in Exhibit No. ___ (JL-6) to Mr. Lyash's direct testimony and Exhibit No. ___ (JE-2) to my direct testimony.

In addition, if PEF cancels shortly after obtaining the COL, PEF will incur incremental costs estimated at [redacted] See Exhibit No. ___ (JE-6) to my testimony. These costs include the [redacted] under the EPC and fuels contracts that are identified in the cancellation option included in Exhibit No. ___ (JL-6) to Mr. Lyash's direct testimony and Exhibit No. ___ (JE-2) to my direct testimony. These costs also include the estimated balance of [redacted] on the equipment costs for selected long lead equipment ("LLE") compared to option 2, project cancellation, in Exhibit No. ___ (JL-6) to Mr. Lyash's testimony. Finally, the incremental costs for this option include incremental legal and other project wind-down costs that were also identified in option 2, project cancellation, in Exhibit No. ___ (JL-6) to Mr. Lyash's testimony. As a result, the nature and in most cases the amount of the estimated costs of this "Option 4" that Jacobs says PEF should have evaluated are contained within the Company's presentations to management regarding the project options and this "option" was therefore an inherent part of the Company's evaluation of the project options.

The total estimated cost to cancel the project shortly after obtaining the COL under "Option 4" is [redacted]. This includes the estimated [redacted] to continue with the partial suspension and obtain the COL and the incremental, estimated [redacted] in cancellation and project wind-down costs to cancel the project after obtaining the COL. It bears emphasis that the estimated incremental costs are conservatively high. PEF has not offset these costs with salvage value for equipment that will be completed and available commercially for new or replacement parts on other projects. PEF has also conservatively included the full balance of the LLE disposition costs from the project cancellation option in this option even though PEF will continue with LLE payments under this option for three additional years and therefore lowering the final disposition costs for this equipment if the project is cancelled after the COL is obtained.

The estimated costs of [redacted] to continue with the partial suspension of the project and shortly after we obtain the COL we cancel the project, is higher than the estimated cost of [redacted] to cancel the project in early 2010 at the time PEF made its decision. See Exhibit No. ___ (JL-6) to Mr. Lyash's testimony. The difference in the estimated costs of these options necessarily follows from the fact that the cancellation decisions are not made at the same time under these two options.

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Q. Does this information affect your recommendation to management?

A. No, it does not. The difference between cancellation of the project after obtaining the COL and cancellation in 2010 is at most an estimated [redacted] Even Jacobs concedes that PEF should be required to justify its decision only if the costs of cancellation after the COL is obtained are "significantly" greater than immediate cancellation of the project. (Jacobs Test., p. 8, L. 31-33). Jacobs nowhere defines what he means by "significantly" greater costs in his testimony.

The cost differential in the timing of project cancellation, however, can realistically be considered significant only in terms of the total project costs and benefits. The cancellation decision terminates the project and ends the potential for future project costs and benefits, therefore, the question is whether the incremental increase in the costs of cancellation in the future compared to cancellation today are significant in terms of the total project costs and benefits. The incremental cancellation costs of an estimated [redacted] is insignificant compared to the estimated billions of dollars in estimated total project costs and total project benefits in fuel and carbon cost savings and other future, long-term project benefits. It is unreasonable to consider an additional [redacted] on a project of this magnitude in terms of costs and benefits to be determinative with respect to the decision to proceed with or cancel the project.

Q. If cancellation was a reasonable option for the LNP why didn't PEF decide to cancel the project?

A. PEF was able to obtain favorable terms to amend the EPC agreement and extend the partial suspension of the project to continue the work to obtain the COL while mitigating the project risks until the COL was obtained for the project. If PEF was unable to obtain these favorable terms to amend the EPC agreement and continue the work necessary to obtain the COL, PEF would have cancelled the project.

As I explained in my direct testimony beginning at page 22, in the fall of 2009 PEF identified three reasonable options for the LNP. These options included (1) proceeding as quickly as possible with the LNP, (2) negotiating a longer schedule shift and suspension of the EPC agreement to focus work on the COL, and (3) project cancellation. Proceeding with option one on a 36-month schedule shift was aggressive given the schedule risks facing the project, exposed the Company and customers to the largest near-term capital investment and customer price impact of all options, and provided the least flexibility with respect to the other enterprise risks facing the project. As a result, PEF did not favor this option.

PEF focused on the second option. This option minimized the near-term capital investment in the project until the COL was obtained, lowered the near-term customer price impact, and minimized the capital investment exposed to the other enterprise risks. To pursue this option, however, the Company needed the Consortium's agreement to [redacted] and enter into a longer term partial suspension of the work unrelated to the COLA work until the COL was obtained. Without that agreement from the Consortium the Company would have decided on the cancellation option.

To pursue the second option, the Company first negotiated [redacted] under the EPC agreement. [redacted] to work with the Consortium on an agreement for a longer term partial suspension of all work except work necessary to obtain the COL until the COL was obtained. As a result, the Company evaluated the options and recommended this second option to senior management for the reasons that I have described above and described in more detail at pages 29 and 30 of my direct testimony. This recommendation was accepted by the SMC subject to the Company's ability to obtain a favorable amendment of the EPC agreement to implement this option.

The Company's objectives for a favorable amendment to the EPC agreement to implement this option are described in detail at pages 32 and 33 of my direct testimony. Briefly, however, the Company first wanted to maintain the favorable terms and conditions of the existing EPC agreement and amend only the contractual milestones and schedule affected by the shift in project schedule. The Company also wanted to [redacted] These objectives allowed the Company to proceed with the work on the project necessary to obtain the COL while maintaining the existing contract benefits and risks [redacted]

PEF was able to achieve each of these objectives in Amendment 3 to the EPC agreement. Amendment 3 allowed PEF to implement the COL focused option while maintaining the favorable terms of the EPC agreement and the [redacted] under the EPC agreement to PEF and its customers during the licensing period. As a result, the SMC and the Board decided to pursue the COL focused option.

Q. Does Jacobs address PEF's objectives for its decision to continue the project through an amendment to the EPC agreement?

A. No, he does not. Jacobs does not address PEF's direct testimony explaining PEF's objectives to amend the EPC agreement to implement its COL focus decision at all. He does not even mention Amendment 3 to the EPC agreement. The Staff testimony including the Staff audit report, however, does discuss the benefits of Amendment 3 to the EPC agreement.

The Staff auditors reviewed the EPC agreement and its amendments in the course of the Staff audit of the LNP. Audit Staff explained that Amendment 3 [redacted] (Audit Staff Report, p. 9). Audit Staff further explained that Amendment 3 [redacted] (Id.). Audit Staff also explained that this amendment maintained [redacted] (Id.). In sum, Audit Staff expressed the belief "that the company was able to negotiate a favorable amendment with limited fee impact." (Id.).

Audit Staff also addressed the commitment of capital and risk allocation under Amendment 3 to the EPC agreement. Audit Staff noted that "the amendment allowed the company to maintain [redacted]. (Id.). Audit Staff further explained that the amendment maintains the [redacted] that existed when the EPC agreement was signed [redacted]. (Id.). Finally, Audit Staff noted that "this amendment allows the company [redacted] (Id.). As a result, the Staff Audit report confirms PEF's belief that PEF obtained the necessary favorable terms in Amendment 3 to the EPC agreement to implement its decision to continue the project and extend the partial suspension to focus work on obtaining the COL for the project.

Q. Did the Audit Staff address PEF's LNP decision?

A. Yes, they did. After auditing the LNP project, including the Company's decision for the LNP, Audit Staff concluded that "given the uncertainties facing the company," the decision to keep "the project progressing, without further substantial investment of cost, is a reasonable approach by PEF at this point in time." (Staff Audit Report, p. 4).

V. REGULATORY AND TECHNICAL FEASIBILITY.

Q. Gundersen claims that there are unresolved technical safety issues with the AP1000 design that represent a "significant risk" of scheduling delays. Do you agree?

A. PEF agrees that there is additional uncertainty regarding the NRC LNP COL review schedule. The reasons for this increased uncertainty regarding the NRC LNP COL review schedule are discussed in detail at pages 16 to 21 of my direct testimony. This is the reason PEF concluded that the minimum possible schedule shift was 36 months and that by the fall of 2009 that option was fairly optimistic and aggressive. This risk was one of the risks evaluated by the Company that contributed to the Company's decision to seek an amendment to the EPC agreement to extend the partial suspension to focus on obtaining the COL while deferring most capital investment in the project until after the COL is obtained. Gundersen, however, seems to believe these risks are more serious. He claims the generic AP1000 licensing issues will change the AP1000 design such that it is not clear to him that the site-specific AP1000 licenses will ever be approved. (Gundersen Test., p. 25, L. 9-16). There is no indication that Gundersen's alleged technical safety issues will prevent NRC licensing approvals for the AP1000 design.

First, Gundersen claims the NRC's Shield Building inquiry to Westinghouse in an October 15, 2009 letter remains unresolved and will likely delay licensing approvals for the AP1000 nuclear reactor design. This inquiry required Westinghouse to redesign the certified shield building design to comply with new NRC requirements to address potential aircraft impacts. This letter is referenced in PEF's direct testimony as one reason for the increased risk of obtaining the COL on the original NRC review schedule for the LNP. At the time PEF filed its direct testimony, this issue remained unresolved.

The issues preventing NRC review of the AP1000 DCD have been addressed and, as a result, the NRC issued a revised AP1000 DCD review schedule on June 21, 2010. Even Jacobs acknowledged the issues preventing NRC review were resolved by the NRC in testimony he filed before the Georgia Public Service Commission regarding Georgia Power Company's proposed AP1000 nuclear reactors at the Georgia Power Vogtle site. Jacobs testified there that, in a public meeting on June 9, 2010, the NRC staff stated "Westinghouse has addressed the NRC concerns identified in the October 15, 2009 letter." See page 11 of 24, Lines 14-15 of Exhibit No. ___ (JE-7) to my testimony. The

NRC removed the hold placed on the NRC's review schedule for the AP1000 design based on the shield building issue and established the review schedule for the AP1000 design review in its June 21, 2010 letter to Westinghouse. Gundersen attaches this letter as Exhibit No. ___ (AG-5) to his testimony but he does not mention that the NRC issued the AP1000 design review schedule because Westinghouse provided detailed technical analysis to address the NRC's open questions about the Shield Building. Gundersen also fails to mention the NRC's June 9, 2010 public statement that the issues preventing the NRC from issuing the review schedule were resolved.

Second, Gundersen claims there is a potential, significant safety problem with the AP1000 containment. This claim is based on an alleged technical "safety" issue with the AP1000 design that he and SACE created. Gundersen states that he prepared this report for the AP1000 Oversight Group to submit to the NRC. (Gundersen Test., p. 18, L. 23-25). The AP1000 Oversight Group is a group of more than a dozen anti-nuclear organizations that include SACE. Therefore, this issue is one that SACE and Gundersen created.

Gundersen claims the AP1000 steel containment design poses a safety risk because it is susceptible to corrosion and cracking and that this corrosion and cracking cannot be detected through routine visual inspections. (Gundersen Test., p. 19, L. 7-17). His claims are not based on any testing or analytical analysis of the AP1000 design. Gundersen's claims about the AP1000 design are based on relatively infrequent, historical experiences with existing reactors of different containment designs. Ironically, the evidence Gundersen relies upon comes from routine utility safety inspection reports.

The AP1000 design is significantly different from the steel-lined concrete containment structures that Gundersen references. In general, steel-lined concrete containments have some portions that are not readily accessible by visual inspection methods. This is not true for the AP1000 containment vessel. The AP1000 containment vessel is a stand-alone steel containment and, therefore, the inside and outside steel surfaces are accessible for visual inspection.

All AP1000 design issues will, of course, be addressed by the NRC during the NRC's on-going AP1000 nuclear reactor design review. It bears emphasis, however, that if the NRC believed the issues raised by Gundersen with respect to the AP1000 containment design were as significant safety issues as Gundersen claims, the NRC would have placed the AP1000 design review on hold and issued an inquiry letter regarding the containment design to Westinghouse just as the NRC did with respect to the Shield Building design in its October 15, 2009 letter to Westinghouse. The NRC, however, has not taken that action and is in fact reviewing the AP1000 design in accordance with a schedule for completion of that review and issuance of a final rule approving the AP1000 design by September 2011. While there may be further delays in this review schedule there is no indication that the issues Gundersen raises prevent the review and issuance of a final rule approving the AP1000 design or that the AP1000 design cannot be approved for the LNP site.

Q. Gundersen claims that he was invited to appear before the Advisory Committee on Reactor Safeguards ("ACRS") and that the ACRS has taken this issue under

advisement. Does that indicate that this is a significant safety issue affecting the AP1000 design review?

A. No, it does not. The ACRS is an advisory board that provides advice to the NRC staff. The ACRS exists to provide a forum for the receipt of technical advice from the industry, public, and interest groups. The AP1000 Oversight Group and Gundersen requested and were granted an opportunity to discuss their concerns with the ACRS. This is not unusual or extraordinary; it is what the ACRS does. Gundersen spoke before a subcommittee of the ACRS that indicated in its initial statements at that hearing that its job was to gather information, analyze relevant issues and facts, and formulate proposed positions and actions, as appropriate, for deliberation by the full committee. The ACRS requested that the industry make a presentation regarding containment coatings the week of July 26, 2010. Again, the ACRS is simply doing its job of gathering information for analysis and potential propositions or actions. The ACRS has not indicated that this issue rises to the level requiring advisory action by the ACRS.

The fact that the ACRS subcommittee indicated it would take Gundersen's report and comments under advisement is a standard response. Contrary to Gundersen's comments, it does not indicate that the ACRS plans to take any action with respect to the report or implement an advisory action to the NRC staff in the AP1000 DCD rulemaking proceeding or in any of the specific AP1000 COLA dockets. We have in fact been unable to locate any statement by the ACRS subcommittee chair in the transcript of the subcommittee hearing that he believed Gundersen's concerns should be addressed as new contentions on each specific AP1000 docket as Gundersen claims. (Gundersen Test., p.

20, L. 3-6). The ACRS has not advised the NRC staff that this action should be taken and the NRC staff has not taken this action.

Q. Gundersen also claims that the LNP site may not be licensable due to its geologic risk. Do you agree with this assessment?

A. No, I do not. Gundersen distorts PEF's testimony in the 2009 docket regarding the LNP site specific issues raised there and speculates about the impact of non-existent design changes to the AP1000 nuclear reactor design on the Florida proposed new nuclear sites. (Gundersen Test., pp. 21-22, 25). He expresses no opinion with any degree of certainty as a nuclear engineer, because his opinion is unsupported by any actual analysis of the LNP site or the application of the AP1000 nuclear reactor design to this site. Gundersen's unsupported speculation should be rejected.

The NRC COLA review specifically addresses the application of the AP1000 design to the LNP site. As a result, geotechnical and geological issues are a natural aspect of that application review. Because the NRC COLA review involved geologic and geotechnical issues, those issues were included along with all other LNP issues in the Company's risk management assessment. As pointed out by Mr. Lyash, PEF never testified that there were no geologic and geotechnical risks at the site. The fact that there are such risks associated with the geologic and geotechnical review, however, does not mean that the NRC technical review concluded that an AP1000 plant could not be located on the LNP site. If the NRC did not determine that a rigorous technical analysis in accordance with NRC regulations had been conducted by PEF, the NRC would not have docketed the LNP COLA for review and the NRC would not be continuing to process the

LNP COLA. The geotechnical and geophysical investigations for the LNP site were in fact performed in accordance with regulatory guidelines and completed. PEF has had three successful NRC audits related to the geotechnical issues at the LNP site. The NRC Staff has informed PEF that the geologic and geotechnical risk at the LNP site is being tracked as a low risk by the NRC Staff. Based on the actual geotechnical and geophysical investigations and the NRC review of the site, there is no reason to believe that the NRC will not issue the COL for the LNP site based on the geologic and geotechnical LNP site characteristics.

Gundersen also ignores the fact that there are five nuclear reactors that have been built on Florida's alleged "unique" geologic composition and that have been safely operating for decades. One of those nuclear reactors – PEF's Crystal River Unit 3 -- is located only eight miles from the LNP site. It is evident, then, that nuclear reactors can be built and operated in Florida. Gundersen has to go back decades to the initial, proposed nuclear reactors in this country and to California and Michigan to find examples where he claims construction was terminated for geologic or seismic conditions. (Gundersen, p. 24, L. 22-28). The Bodega Bay reactor, for example, was one of the first proposed nuclear reactors and it was located on or near the San Andreas Fault. These "examples" obviously share no similarities with the LNP.

Q. Gundersen and Cooper both appear to claim that utilities are no longer pursuing the development of new nuclear generation. Do you believe that is a fair assessment?

A. No, it is not. Gundersen and Cooper refer to selected comments by two utility CEO's who are not planning on building AP1000 units and naturally will defend their own resource planning decisions. They also claim the majority of nuclear reactor projects have been delayed or cancelled and ignore the actual number of active projects. (Gundersen Test., pp. 14-15; Cooper Test., pp. 17-18). In addition to the LNP, according to the NRC website the following sites have COLs being reviewed by the NRC:

• Vogtle 3 & 4	Toshiba-WEC AP1000	Southern Nuclear Operating Company(SNC)
• Summer 2 & 3	Toshiba-WEC AP1000	SCANA
• Lee 1 & 2	Toshiba-WEC AP1000	Duke Energy
• Comanche Peak 3 & 4	Mitsubishi US-APWR	Luminant Generation Company, LLC
• South Texas 3 & 4 (STPNOC)	GE-ABWR	STP Nuclear Operating Company
• Calvert Cliffs 3	AREVA- US EPR	Unistar Nuclear Operating Services, LLC
• Bell Bend 1	AREVA- US EPR	Pennsylvania Power & Light (PPL) Bell Bend, LLC
• Nine Mile Point 3	AREVA- US EPR	Unistar Nuclear Operating Services, LLC
• North Anna, Unit 3	GE-ESBWR	Dominion (Has switched to Mitsubishi US-APWR)
• Fermi 3	GE- ESBWR	Detroit Edison
• Bellefonte 3 & 4	Toshiba-WEC AP1000	TVA
• Turkey Point 6 & 7	Toshiba-WEC AP1000	Florida Power & Light
• Harris 2 & 3	Toshiba-WEC AP1000	Progress Energy

Southern Nuclear Operating Company ("SNC") is in the process of building two AP1000 nuclear reactors at the Vogtle site. In addition, six AP1000 nuclear reactors are in various stages of design and construction in China. Cooper and Gundersen also ignore the NRC's views. NRC Commissioner Svinicki recently commented that, in her view, "we have certainly experienced a renaissance in terms of renewed interest in nuclear power. The NRC, as many of you know, has received 18 applications for combined operating licenses for 28 new nuclear power plants; of these 13 applications for 22 units have been docketed and are under active NRC review, … ." See Exhibit No. ___ (JE-8) to my testimony. Cooper and Gundersen also ignore the President's recent statements in support of new nuclear power plants. As President Obama stated, "investing in nuclear energy remains a necessary step." See Exhibit No. ___ (JE-9) to my testimony. By all recent indications, neither the federal government, the NRC, nor the utilities with nuclear generation plans are abandoning nuclear generation in favor of other options for a future, carbon-constrained generation environment.

VI. CANCELLATION COSTS.

Q. Cooper claims that the project should be cancelled and the Commission should determine that cancellation or termination fees cannot be recovered from customers. Do you agree?

A. No. Cooper argues that PEF should cancel the LNP and should not recover cancellation costs. (Cooper Test., p. 14, L. 6-10). Cooper does not claim that PEF's contractual termination provisions and cancellation costs are unreasonable or imprudent. He simply believes customers should not have to pay for them no matter what the terms and amounts are.

Cooper provides no support in his testimony for this position. It is my understanding that the nuclear cost recovery statute and rule provide for the recovery of all costs, including termination or cancellation costs, as long as they are related to or resulting from the siting, licensing, design, construction, or operation of the nuclear power plant and associated transmission facilities and they are reasonably and prudently incurred. Termination provisions that provide for the payment of costs upon the termination or cancellation of a contract are standard utility industry terms in EPC and other utility construction contracts. It is standard practice in the electric utility industry to include such terms in utility design and construction contracts of all types. Termination provisions providing for costs upon contract cancellation or termination are necessary in the industry to ensure that utilities can obtain EPC and other utility construction contracts at reasonable prices. In fact, it is unlikely that an electric utility can obtain an EPC or other utility construction contract without a provision providing for the payment of costs upon cancellation or termination of the contract by the utility.

The EPC contract termination provisions are reasonable and prudent. They are consistent with accepted, best utility industry contracting practice and industry standards for utility construction projects. Before PEF executed the EPC agreement, PEF confirmed that the EPC contractual termination provisions were reasonable and prudent and consistent with industry best contracting practices by having the EPC agreement audited by PricewaterhouseCoopers. As the Staff Audit report notes, "the audit determined that the EPC contract was [redacted] of this type." (Staff Audit Report, p. 33). This independent audit included all major articles and contract terms and conditions including the suspension and termination provisions of the EPC agreement. (Id. at pp. 33-34). The Staff Auditors also reviewed the EPC agreement and its terms and conditions and they nowhere find in the Staff Audit Report that the termination provisions and termination and cancellation costs are unreasonable or imprudent. For all these reasons, the EPC agreement termination provisions and resulting termination and cancellation costs are reasonable and prudent and, therefore, such costs are recoverable under the nuclear cost recovery statute and rule.

VII. STAFF AUDIT REPORT ON THE LNP.

Q. Was the LNP audited by the Commission?

A. Yes, the LNP was audited by the Commission Office of Auditing and Policy Analysis. This audit resulted in a report called the Review of Progress Energy Florida's Project Management Internal Controls for Nuclear Plant Uprate and Construction Projects ("Staff Audit Report"). This Staff Audit Report is attached as an exhibit to the testimony of the Staff witnesses in this proceeding.

Q. What was the purpose and objective of the Staff Audit?

A. According to the Staff Audit Report, the primary audit objectives were to document project key developments and the organization, management, internal controls, and oversight that PEF has in place or plans to employ for the projects since the last NCRC hearing. The Staff Auditors specifically state that the information in the report may be used by Division of Economic Regulation Staff to assist in an assessment of the reasonableness of the Company's cost-recovery requests for the projects. (Staff Audit Report, p. 1).

Q. Does the Staff Audit Report include observations about the LNP?

A. Yes, it does. The Audit Staff reviewed the Company's management decisions to address the schedule shift facing the LNP and the Company's ultimate decision to continue with the LNP under an extended partial suspension focusing work on obtaining the LNP COL until the COL is obtained. Based on this review, the Audit Staff observed that "given the uncertainties facing the Company, audit staff recognizes that keeping the project progressing, without further substantial investment of cost, is a reasonable approach by PEF at this point in time." (Staff Test., p. 4). PEF agrees with this observation. It is consistent with PEF's view that, under the circumstances facing the Company on the LNP at the time the Company made its decision, the Company's decision was reasonable and prudent.

Q. Do you have any clarifications regarding comments in the Staff Audit Report that you want to provide the Commission?

A. Yes. There are two statements in the Staff Audit Report regarding the impact of RAIs on the Company's Final Safety Evaluation Report (FSER) and Final Environmental Impact Statement (FEIS) parts of the LNP COLA review schedule that require clarification. These are the Staff Audit Report comments about the assumed 30-day response time for RAI responses and the impact of the Least Environmentally Damaging Practicable Alternative (LEDPA) analysis that is part of the FEIS.

First, with respect to the RAI response time, the Staff auditors note that under the initial LNP COLA review schedule, the estimated date for COL issuance was late 2011. That schedule has now shifted for the reasons provided in my direct testimony at pages 16-20 and the Company does not expect to receive the LNP COL until late 2012 or early 2013, as the Staff Audit Report notes. (Staff Audit Report, p. 10). The Staff Audit

Report attributes this shift in the COL issuance to several factors including the Company's response time to the more complex and intricate RAI requests. (Id.).

In this regard, the Staff Audit Report quotes from an NRC September 2009 letter noting the schedule shift in the FSER part of the LNP COLA review schedule that refers to the fact that the NRC assumed a 30-day response time for RAIs in its COLA review schedule and not all PEF responses to RAIs were received within 30 days of RAI receipt. (Staff Audit Report, p. 11). The Staff Audit Report acknowledges the Company's information that the additional time to respond to certain RAIs was necessary given the complexity of the environmental and geotechnical aspects of the Levy site and that the Company did what was necessary to compile, analyze, and respond to each RAI in a timely manner. (Id.). Of importance here is what the Staff auditors do not say, they do not assert that PEF was intentionally or negligently late in responding to any NRC RAI. No one, including the Staff auditors, asserts that PEF was non-responsive to the NRC.

It also bears emphasis that the 30-day response time for RAI responses was an assumed NRC target for responses based on NRC standard practice before the RAIs for the LNP were ever prepared. In other words, the 30-day turnaround for RAI responses is a "boiler plate" provision at the NRC. It was not established based on the individual level of complexity of each RAI for the LNP. There is no mandatory requirement imposing a 30-day deadline for RAI responses. This signifies that this is a matter of practice only and that the RAI process is not susceptible to mandatory deadlines because the number of RAIs and the time necessary to respond to them depends on the particular circumstances of each project before the NRC.

Further, not all RAIs had specified due dates. As a result, the NRC recognized that not all RAI responses could or should be provided within the boiler plate 30-day deadline. The Staff Audit Report correctly notes that PEF timely responded to 99 percent of the environmental RAIs and 70 percent of the safety RAIs within the specified due dates. (Staff Audit Report, p. 11). The Staff Audit Report omits, however, two important facts about the timeliness of PEF's RAI responses.

To begin with, the Staff Audit Report does not include the timing of when the RAIs were received by PEF. In Exhibit No. ___ (JE-10) to my testimony, I have included a bar chart showing the number of RAIs received by month between November 2008 and March 2010. As this exhibit demonstrates, the RAIs were not spaced out evenly over this time period. Instead, the bulk of the RAIs were received in particular months, further adding to the complexity of responding to the RAIs within an assumed 30-day deadline. Additionally, the Staff Audit Report does not reference the fact that, PEF's practice was to inform the NRC when PEF needed more than 30 days to respond and, when the RAI contained critical path information which if received past the 30-day period might impact the review schedule, the NRC informed PEF. All of the critical path RAIs identified by the NRC to PEF were timely completed. For all other RAIs for which PEF informed the NRC that it needed more than 30 days to respond to the RAI, the NRC acknowledged this information and did not indicate to PEF that an RAI response later than 30 days would impact the NRC's overall review schedule. In this context, it is clear that PEF was responsive to the NRC during the RAI process and did not do anything to knowingly or carelessly impact the LNP COLA review schedule. In any event, as I explained at pages 16 and 17 in my direct testimony, the shift in the NRC licensing safety review schedule was only two months, from May 2011 to July 2011.

Q. What is the second clarification that you want to provide the Commission regarding the Staff Audit Report comments with respect to the LNP COL review schedule?

A. The second clarification concerns the Staff Audit Report reference to the January 20, 2010 NRC notification indicating an approximately nine month delay in the FEIS for the LNP. This notification is addressed at pages 20-21 in my direct testimony. The Staff Audit Report notes that this delay was attributed by the NRC to the complexity of evaluating the groundwater modeling, floodplains compensation, and the LEDPA analysis. The Staff Audit Report further references the initial and subsequent RAIs on these issues that required additional time for PEF to collect and the NRC to review necessary information. The Staff Audit report notes this was a risk in the Company's risk matrix but not ranked as a significant one. (Staff Audit Report, p. 11). This discussion in the report may leave an impression that PEF was not responsive to the NRC with respect to these issues and that this impacted the FEIS review schedule. That is not the case.

To begin with, the NRC issued the LNP COLA review schedule including the initial LNP environmental review schedule on February 18, 2009. This environmental review schedule included target completion dates of October 26, 2009 for the draft environmental impact statement (DEIS) and September 22, 2010 for the FEIS. To advance its LNP environmental review the NRC issued RAIs to PEF related to groundwater modeling clarifications and LEDPA analysis details on February 24, 2009 and March 13, 2009, respectively. PEF responded to these RAIs on March 27, 2009 and June 26, 2009, respectively. PEF further supplemented its groundwater modeling clarification responses with additional information on July 29, 2009. PEF believed its responses to these RAIs were complete when PEF submitted these RAI responses.

One month before the initial DEIS target completion date, on September 25, 2009, the NRC sent PEF additional RAIs for more information on the LEDPA and groundwater modeling. The NRC acknowledged the complexity of these additional RAIs and asked PEF to provide a schedule for PEF's responses. Because this request from the NRC was sent one month before the DEIS target completion date and, because the NRC asked PEF for a response time in excess of 30 days, it is clear the NRC understood that PEF could not respond to these additional RAIs before the original DEIS milestone. PEF responded to the additional RAIs on December 14, 2009, one day ahead of the schedule PEF provided the NRC in its October 13, 2009 letter.

The initial target completion date for the DEIS was not met. On November 4, 2009, the NRC issued a status report to the NRC Atomic Safety & Licensing Board ("ASLB"), indicating that the NRC was re-evaluating the LNP environmental review schedule. This re-evaluation was based on PEF's response schedule provided to the NRC in its October 13, 2009 letter. The ASLB status report demonstrates that the NRC recognized before receiving PEF's responses on December 14, 2009 that a shift to the LNP environmental review schedule was required. Please see Exhibit No. ___ (JL-1), pp. 17-21, of Mr. Lyash's direct testimony.

On January 20, 2010, the NRC did indicate that it was modifying the environmental review schedule based on PEF's December 2009 responses to the additional LEDPA, floodplains compensation and groundwater modeling RAIs. This does not mean, however, that PEF was not timely and responsive to these RAIs. As I have explained above, this schedule shift occurred when the NRC realized too late to meet the initial DEIS and FEIS target dates that it needed more information from PEF on these issues for the environmental review. PEF was timely and responsive to the NRC's RAIs on these environmental issues.

VIII. CONCLUSION.

Q. Has the Intervenor Witness testimony affected your determination that your recommendation to senior management and the Board was the right decision?

A. No. As I previously explained, Jacobs believes PEF's evaluation was incomplete because Jacobs assesses the LNP risks differently. (Jacobs Test., pp. 9-11). Simply put, Jacobs would have made a <u>different</u> decision based on his assessment of the LNP risks. (Id.). That decision appears to be project cancellation although Jacobs never expressly states that is his preferred decision. The fact that Jacobs would have made a different decision does not mean that PEF's decision was unreasonable or imprudent. PEF's decision was reasonable and prudent for all the reasons provided in my direct and rebuttal testimony. Jacobs does not challenge the prudence of PEF's decision. Nowhere in his testimony does Jacobs express the opinion that PEF made an unreasonable or imprudent decision. Jacobs' testimony only confirms our thinking that given the circumstances we faced, PEF made the right decision for PEF and its customers.

Cooper and Gundersen testify on behalf of SACE, a group opposed to new nuclear generation. It is no surprise, then, that Cooper and Gundersen contend that the

LNP is not feasible and should be cancelled. Their opinions regarding the regulatory and technical requirements for the LNP are not expressed with any degree of certainty, they are not reasonable, and they are unsupported by any analysis of the actual facts of this case. If there were sound grounds for their testimony on these points, there should be no NRC AP1000 COLA design review and LNP COLA review. But that is not the case. The NRC is currently reviewing the AP1000 design with plans for final rule approval by September 2011 and the NRC is continuing the review of the LNP COLA with respect to the application of the AP1000 nuclear reactor design at the LNP site.

Q. Does this conclude your rebuttal testimony?

A. Yes.

Docket No. 100009-EI
OPC's 3rd Set of Interrogatories

Question 46

Have you determined estimated costs for the alternative you have chosen (continuation with COL and minimum continuation of the EPC contract) followed by project cancellation after receipt of COL? What were the results of those evaluations as compared to project completion and immediate project cancellation? If you did not evaluate this alternative, why not?

Response:

Subject to PEF's general objections filed on June 3, 2010, and without waiving same, no. As stated in the April 30, 2010 testimony of John Elnitsky at pages 29-30, while the Company did evaluate a full project cancellation scenario, continuation options provided the best fit to the Company's stated objectives with regard to the Levy Project, primarily:

a) Significant reduction of near term customer price impact;

b) Continuance of nuclear generation as a viable option for future fuel and carbon emission cost savings as compared to an all natural gas-fired generation plan;

c) Preservation of the beneficial terms and conditions of the EPC contract; and

d) Movement of risk and significant cash outflow past COL receipt.

The alternative presented in Question 46, project cancellation after receipt of COL, would not have met these stated objectives and as such, was not evaluated.

Option 4 - Cancel at Receipt of COLA

REDACTED

dollars in millions

Option 3: Continued Partial Suspension	PTD	2010	2011	2012	2010 - 12 3-Yr Total
EPC Payments	86.0	[redacted]			
LLM Payments & WEC Support	240.0				
LLM PO Dispositon Costs	-				
Transmission	36.8				
COLA	83.2				
Wetland mitigation	-				
Other Owner's Cost	82.2				
Total Option 3 - Decision Path per SMC	528.2				

Option 4: Partial Suspension; Cancel Post-COLA	Inc Costs 2013
EPC Cancellation Fee	[redacted]
Fuel Cancellation Fee	
Other WEC/ SSW Cancellation Costs	
Estimated balance of equipment costs for selected LLE	
Incremental Legal + staff disposition	
Other	
Total Incremental Costs	
Total Option 4	

PUBLIC DISCLOSURE

BEFORE THE
GEORGIA PUBLIC SERVICE COMMISSION

IN THE MATTER OF: GEORGIA POWER COMPANY'S SECOND SEMI-ANNUAL VOGTLE CONSTRUCTION MONITORING REPORT

DOCKET NO.: 29849

DIRECT TESTIMONY

AND EXHIBITS

OF

WILLIAM R. JACOBS, JR., PhD.

On Behalf of the

Georgia Public Service Commission Public Interest Advocacy Staff

June 18, 2010

Table of Contents

Exhibits:

STF-1 Resume of William R. Jacobs, Jr., Ph.D.

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. My name is William R. Jacobs, Jr., Ph.D. I am a Vice President of GDS Associates, Inc. My business address is 1850 Parkway Place, Suite 800, Marietta, Georgia, 30067,

Q. DR. JACOBS, PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUNDS AND EXPERIENCE.

A. I received a Bachelor of Mechanical Engineering in 1968, a Master of Science in Nuclear Engineering in 1969 and a Ph.D. in Nuclear Engineering in 1971, all from the Georgia Institute of Technology. I am a registered professional engineer and a member of the American Nuclear Society. I have more than thirty years of experience in the electric power industry including more than twelve years of nuclear power plant construction and start-up experience. I have participated in the construction and start-up of seven nuclear power plants in this country and overseas in management positions including start-up manager and site manager. As a loaned employee at the Institute of Nuclear Power Operations ("INPO"), I participated in the Construction Project Evaluation Program, performed operating plant evaluations and assisted in development of the Outage Management Evaluation Program. Since joining GDS Associates, Inc. in 1986, I have participated in rate case and litigation support activities related to power plant construction, operation and decommissioning. I have evaluated nuclear power plant outages at numerous nuclear plants throughout the United States. I am currently on the management committee of Plum Point Unit 1, a 650 Megawatts Electric ("MWe") coal fired power plant under construction near Osceola, Arkansas. As a member of the management committee, I assist in providing oversight of the Engineering, Procurement and Construction ("EPC") Contract contractor for this project. My resume is included in Exhibit STF-1.

Q. DR. JACOBS, WHAT IS THE NATURE OF YOUR BUSINESS?

A. GDS Associates, Inc. ("GDS") is an engineering and consulting firm with offices in Marietta, Georgia; Austin, Texas; Corpus Christi, Texas; Manchester, New Hampshire; Madison, Wisconsin, Manchester, Maine; Bellingham, Washington; and Auburn, Alabama. GDS provides a variety of services to the electric utility industry including power supply planning, generation support services, rates and regulatory consulting, financial analysis, load forecasting and statistical services. Generation support services provided by GDS include fossil and nuclear plant monitoring, plant ownership feasibility studies, plant management audits, production cost modeling and expert testimony on matters relating to plant management, construction, licensing and performance issues in technical litigation and regulatory proceedings.

Q. WHOM ARE YOU REPRESENTING IN THIS PROCEEDING?

A. We are representing the Georgia Public Service Commission Public Interest Advocacy Staff ("Staff").

Q. WHAT IS YOUR INVOLVEMENT WITH THE VOGTLE 3 AND 4 PROJECT?

A. I am the Commission's Independent Construction Monitor ("CM") for the Vogtle 3 and 4 project. As such, my duties are to assist the Staff in providing regulatory oversight of all aspects of the Vogtle 3 and 4 project.

Q. WHAT IS YOUR ASSIGNMENT IN THIS PROCEEDING?

My assignment is to present the results of the Staff and CM's project oversight from certification of the project to the present time with emphasis on the time period covered by the Second Semi-Annual Vogtle Construction Monitoring Report, July 1 through December 31, 2009. I will provide a description of the construction monitoring activities that have occurred since my December 2, 2009 testimony in this docket and describe the current status of the project. I will identify certain issues that have the potential to impact the schedule or cost of the project. Finally I will make a recommendation regarding the costs submitted by Georgia Power Company ("Company") for verification and approval.

II. DESCRIPTION OF CONSTRUCTION MONITORING ACTIVITIES

Q. PLEASE DESCRIBE THE CONSTRUCTION MONITORING PROGRAM THAT THE STAFF AND INDEPENDENT CONSTRUCTION MONITOR HAVE IMPLEMENTED TO MONITOR THE CONSTRUCTION OF THE VOGTLE 3 AND 4 PROJECT.

A. The Staff and the Independent Construction Monitor continue to be very active in monitoring the Vogtle project. These activities include:

- Participation in monthly meetings with Company personnel to discuss project status;
- Observation of monthly meetings between the Company and the EPC contractor, Westinghouse – Shaw.
- Review of monthly project status reports issued by the Company;
- Review of monthly project status reports issued by the Westinghouse – Shaw consortium;
- Review of the Company's Semi-Annual Construction Monitoring Reports;
- Drafting discovery requests for additional information as needed following review of the monthly status reports, semi-annual construction monitoring reports or meetings with the Company;

- Participation in visits to the Vogtle site to meet with on-site personnel and view construction progress;
- Participation in a trip to the Shaw Modular Systems facility in Lake Charles, Louisiana;
- Participation in a trip to the Shaw office in Charlotte, North Carolina;
- Participation in NRC public technical meetings via conference call;
- Review of public correspondence between the Company and the NRC via the NRC website;
- Review of trade articles and journals related to new nuclear power plant development;

Q. PLEASE DESCRIBE THE MONTHLY MEETINGS WITH THE COMPANY.

A. As described in my December 2, 2009 testimony in this docket, the Company's Project Management Board ("PMB") consists of senior Company executives and Co-owner representatives.[1] The PMB is the executive body with primary responsibility for providing project oversight on behalf of the Company and the co-owners. Each month the PMB is briefed on critical areas of the project including licensing, engineering, construction, procurement, quality assurance, operational readiness, budget and other current issues. The day following the PMB meeting, Company personnel brief the Staff and CM using the same briefing handout that was used at the PMB meeting. Staff and the CM have the opportunity to ask questions and ask for supporting information if needed. Company personnel also provide an updated detailed project schedule at each

[1] Co-owners are Oglethorpe Power Corporation, Municipal Electric Authority of Georgia and the City of Dalton

meeting. These monthly meetings provide an excellent source of high level information on the project.

Q. PLEASE BRIEFLY DESCRIBE YOUR TRIPS TO THE SHAW MODULAR SYSTEMS FACILITY AND TO THE SHAW OFFICE IN CHARLOTTE, N.C.

A. The use of modular construction techniques is a unique feature of the AP1000 design. Modules and sub-modules for the Vogtle project will be fabricated at the Shaw Modular Systems facility in Lake Charles, Louisiana. On December 8, 2009 the CM and Commission Staff visited the SMS facility which was not yet operational. We toured the facility and plant management provided an explanation of the process and equipment that would be used in fabrication of the Vogtle modules. During this visit we asked several questions concerning the design of the modules. SMS personnel stated that their function was to fabricate the modules based on the design that they received from Shaw Power-Nuclear. Following up on our questions, the CM and Commission Staff met with Shaw Nuclear engineering and project personnel in Charlotte, N.C. on February 4, 2010. Shaw personnel provided responses to our questions and showed an animated demonstration of how the individual modules would be integrated during construction of the Vogtle project. Both of these meetings were very useful in helping the CM and Staff better understand the modular construction approach at Vogtle.

Q. IN THE PRIOR HEARING IN THIS DOCKET YOU EXPRESSED CONCERN THAT YOU WERE NOT ALLOWED TO ATTEND THE MONTHLY MEETING BETWEEN THE COMPANY AND THE EPC CONTRACTOR. HAS THIS CONCERN BEEN SATISFACTORILY ADDRESSED?

A. Yes it has. Beginning with the monthly EPC meeting on February 10, 2010, the CM has attended every EPC meeting at the Vogtle project site. Prior to the CM attending an EPC meeting, Company senior project management provide a briefing to explain the topics of the upcoming meeting and to put these topics in context for the CM. After the EPC meeting, the CM provides his comments and observations to Company senior management. This process has worked very well and has been very useful in providing the CM with a full understanding of the project status and issues. A good example of the benefit of the CM's attendance at the EPC meeting is the CM's understanding of the issues related to shortage of category 1 backfill that is discussed later in this testimony. The CM has heard several presentations by Company management on the backfill issue and has a detailed understanding of the issue and of the actions taken to mitigate this problem. The CM is aware not only of the actions taken to mitigate this issue but of actions that were considered and not taken. The understanding of the backfill issue gained from attendance at the EPC meetings allows the CM to conclude that to date the Company's management of this issue is reasonable and appropriate.

Q. HAVE YOU BEEN ALLOWED ACCESS TO ALL MEETINGS THAT YOU HAVE REQUESTED TO ATTEND?

A. No I have not. I have requested authorization to observe the proprietary portion of meetings between Westinghouse and the NRC. These meetings discuss technical aspects of the AP1000 design and have been granted proprietary status by the NRC. The Company has requested that Westinghouse allow the CM and Staff to observe the proprietary portion of these meetings. At this time Westinghouse has refused to allow the CM and Staff to observe these meetings.

Q. DO YOU BELIEVE THAT THE COMPANY IS MAKING A BEST EFFORT TO GAIN ACCESS TO THESE MEETINGS FOR THE CM AND STAFF?

A. Yes I do. The Company has repeatedly requested that Westinghouse provide access for the CM and Staff to the proprietary portion of these meetings and the Company is continuing to press Westinghouse on this issue. In the interim, the Company has agreed to provide a summary of the proprietary portions of the meetings to the CM and Staff. I believe that the Company is making a best effort to gain access for the CM and Staff and that the Company will continue its efforts in this area.

III. CURRENT PROJECT STATUS

Q. HOW HAS THE COMPANY CHARACTERIZED THE CURRENT STATUS OF THE PROJECT?

A. The Company's position is the project is generally on schedule and currently projected to come in slightly under the certified total project cost of $6.113 billion.

Q. WHAT IS THE STAFF'S OPINION REGARDING THE PROJECT'S CURRENT STATUS?

A. The Company's characterization is within a reasonable range of outcomes for the project. However, given the extensive licensing, engineering and construction challenges that lay ahead it is possible that the project could come in over budget and potentially miss the commercial operation dates ("COD") of April 1, 2016 and April 1, 2017 for Unit 3 and Unit 4 respectively. The delays and cost overruns could be significant. Staff acknowledges the Consortium, the Company and the Nuclear Regulatory Commission ("NRC") are working in a diligent and expeditious manner. However, the first of a kind nature of many of the extensive licensing, engineering and construction issues that must be addressed may result in cost overruns and delays. The significant challenges that must be successfully managed to mitigate the possible impact on project schedule and cost include:

- Certification of the AP1000 Design Control Document ("DCD") by the NRC as required to meet the project schedule;
- Issuance of the Vogtle Combined License ("COL") by the NRC as required to meet the project schedule;
- Resolution of the shortage of category 1 backfill including regulatory approval to use offsite material if needed as required to meet the project schedule;
- Design and fabrication of modules and sub-modules at the Shaw Modular Systems ("SMS") facility as required to meet the project schedule;
- Finalization of the AP1000 design and the Plant Vogtle specific design as required to meet the project schedule;

These challenges are discussed in more detail in Section IV below.

Q. PLEASE DESCRIBE THE STATUS OF LICENSING ACTIVITIES FOR THE VOGTLE PROJECT.

A. At this time the project critical path is through the licensing activities leading to issuance of the COL. As discussed in my December 2, 2009 testimony, the COL must be issued before significant safety related construction can begin. The current date for issuance of the COL to support the April 2016 commercial operation date for Unit 3 is October 2011. The Vogtle COL application ("COLA") will reference the AP1000 design which is certified when the Design Control Document for the AP1000 is certified by the NRC. The COL cannot be issued until the Design Control Document is certified.

In my December 2, 2009 testimony in this docket I noted that approval of the DCD may be delayed due to technical concerns with the Shield Building that the NRC identified in an October 15, 2009 letter to Westinghouse. At the time this letter was issued, it seemed likely that certification of the DCD would be several months later than currently scheduled due to the shield building issue. However, Westinghouse has acted aggressively to resolve the NRC's concerns with the Shield Building. Actions by Westinghouse include:

- Numerous meetings with NRC staff to discuss specific technical issues;
- Submission of the Shield Building Design Report Rev. 1 on March 21, 2010;
- Submission of the Seismic Report on March 21, 2010;
- Submission of the Shield Building Design Report Rev. 2 on May 7, 2010;
- Completion of final testing May 26, 2010;
- Final test report to be submitted June 21, 2010.

In a public meeting on June 9, 2010, the NRC staff stated "Westinghouse has addressed the NRC concerns identified in the October 15, 2009 letter." In addition, the NRC Commissioners have indicated their desire to maintain the current schedule for DCD approval. To that end the NRC has established standing weekly meetings to review issues related to the AP1000 DCD and issues related to the Vogtle 3 and 4 COLA. The NRC will issue a revised DCD review schedule in the near future.

Q. WHAT IS YOUR CURRENT OPINION REGARDING CERTIFICATION OF THE AP1000 DCD AND ISSUANCE OF THE VOGTLE 3 AND 4 COL?

A. I am more optimistic than I was in my December 2, 2009 testimony. Aggressive actions by Westinghouse appear to have resolved the NRC concerns with the shield building. In addition, as discussed above, the NRC Commissioners and the highest levels of NRC management are committed to maintaining the current schedule and have taken actions to this end. In my December 2, 2009 testimony I expressed the opinion that the Vogtle COL would likely be several months late. By this I meant that I anticipated the Vogtle COL to be issued in early to mid-2012. I now estimate that the Vogtle COL will be issued in late 2011 or possibly early 2012 given the progress made on technical issues and the NRC's commitment to maintain the schedule. This is an improvement of 2 to 3 months over my earlier estimate. However, this outlook is dependent on Westinghouse continuing to take aggressive steps to meet NRC licensing requirements.

Q. WILL A DELAY OF A FEW MONTHS IN ISSUANCE OF THE VOGTLE COL DELAY COMPLETION OF THE PROJECT?

A. I believe that the project can recover from a two to three month delay in issuance of the Vogtle COL. The current project schedule is based on a planned substantial completion of January 2016 and 2017 with guaranteed substantial completion dates of April 2016 and 2017. This schedule float can accommodate a two to three month delay in issuance of the COL.

Q. ARE THERE OTHER ISSUES BEYOND LICENSING ISSUES THAT MAY IMPACT PROJECT SCHEDULE AND COST?

Yes. There will be other challenges for the project to overcome. Some of these challenges are known at this time and are discussed in Section IV below. Other technical and regulatory challenges will likely arise as this first of a kind project moves forward. The ability of the Consortium and the Company to manage and mitigate these challenges will ultimately determine the outcome of the project.

Q. PLEASE DESCRIBE THE CURRENT CONSTRUCTION ACTIVITIES AT THE VOGTLE SITE.

A. The primary construction activity at the Vogtle 3 and 4 site at this time is related to the excavations for the Unit 3 and 4 nuclear islands. Excavation for the Unit 3 and 4 nuclear islands is complete and installation of compacted category 1 backfill is under way. Other activities include clearing of NOIs[2] [redacted] in preparation for recovery of category 1 backfill from these areas, erection of the primary batch plant, installation of foundations for various site buildings and other civil work including preparation of the site locations for the cooling towers.

Q. WHAT IS THE CURRENT STATUS OF THE PROJECT BUDGET?

A. EPC capital expenditures at this time continue under budget primarily due to failure of the Consortium to achieve certain milestones in accordance with the project milestone schedule. Owners' capital expenditures are also under budget due to the timing of project oversight and non-EPC project activities. These budget variances are due to timing differences between actual expenditures and the budget and should not impact total project cost. Actual expenditures can be found in the Trade Secret testimony filed by Jeffrey Burleson on behalf of Georgia Power Company in this docket.

Q. WHAT IS THE CURRENT STATUS OF THE TOTAL PROJECT COST FORECAST?

A. The Company's current Total Project Cost forecast is $[redacted] which is slightly under the estimate at certification of $6.113 billion. This reduction is the function of two factors that are not likely to recur. First, [redacted] is under budget as a result of construction costs rising much less than projected due to the

[2] NOI stands for Notice of Intent. Areas of the site are identified as different NOI numbers.

economic difficulties of the past two years. The second factor is lower Total Financing Cost which is the result of the Company recognizing the lower cost of debt associated with the project.

IV. OTHER ISSUES POTENTIALLY IMPACTING PROJECT SCHEDULE AND/OR COST

Q. PLEASE DESCRIBE THE ISSUE RELATED TO SHORTAGE OF CATEGORY 1 BACKFILL AND THE COMPANY'S EFFORTS TO RESOLVE THIS ISSUE.

A. Beginning in June 2009, the primary construction activity at the Vogtle 3 and 4 site has been excavation for the Unit 3 and 4 nuclear islands. Excavation of the nuclear islands to approximately 90 feet below grade elevation has been completed and the process of filling the excavations with compacted category 1 backfill is underway. The original geotechnical analyses indicated that sufficient category 1 backfill to backfill the excavations would be obtained from the excavations themselves and from designated areas on site. This has not been the case. The amount of category 1 backfill recovered from these locations is far less than the amount needed.

The Company is addressing the shortage of backfill in three ways. First, they have filed an amendment (the "On-Site Amendment") with the NRC to allow the use of category 1 backfill taken from on-site areas other than the originally designated areas. This amendment has received partial approval from the NRC to use backfill from certain specified areas and the Company is anticipating approval to use backfill from the remainder of the requested areas. Next, the Company has filed an amendment (the "Engineered Fill Amendment") to use engineered fill to backfill areas of the excavation that are not directly below the nuclear island. If these two amendments do not provide sufficient backfill, the Company has identified an offsite source of backfill that could be used. Use of the offsite backfill will require approval of a third amendment by the NRC.

Q. HAS THE SHORTAGE OF CATEGORY 1 BACKFILL IMPACTED THE PROJECT SCHEDULE?

A. The answer is not yet but it could. The shortage of category 1 backfill resulted in [redacted]. Backfill of the Unit 3 and 4 excavations must reach the 180 foot elevation to allow other construction activities such as installation of the circulating water pipe to continue as planned. If the project receives approval of phase 2 of the On-Site amendment as anticipated and the expected amount of category 1 backfill is recovered from the other onsite locations ([redacted]), backfilling the excavations to the 180 foot elevations should be achievable in time to support the project schedule. If the amendment is not approved as planned or the recovery from [redacted] is less than planned, the construction schedule will likely be impacted.

Q. PLEASE DESCRIBE THE ISSUE RELATED TO DESIGN AND FABRICATION OF MODULES AND SUBMODULES AT THE SHAW MODULAR SYSTEMS FACILITY.

A. The AP1000 design uses modular construction techniques to reduce the amount of work that must be done on site. The modules and sub-modules will be fabricated at the Shaw Modular System facility in Lake Charles, Louisiana. Fabrication of the first modules has experienced repeated delays with the start of module fabrication [redacted]. After fabrication of the initial modules in [redacted], fabrication was halted due to [redacted]. [redacted]

[redacted]. [redacted] are near the critical path and could impact the project schedule if problems with module fabrication continue.

Q. PLEASE DESCRIBE THE ISSUE RELATED TO DESIGN FINALIZATION.

A. Finalization of the detailed AP1000 design culminating in issuance of construction drawings for the Vogtle project is a concern. The plan for the project was to have all deliverables (construction drawings, specifications, etc.) for construction available [redacted]. The first design package deliverable was completed on schedule [redacted]. However, design finalization is a very large task and actual design finalization is [redacted]. Westinghouse has reorganized their engineering group to improve performance in this area. Continued close monitoring in this area is needed.

Q. HAVE POTENTIAL CHANGE ORDERS BEEN IDENTIFIED BY THE CONSORTIUM OR THE COMPANY?

A. Yes. In accordance with the EPC contract, the Consortium must notify the Company when it identifies a situation or issue that may result in a change order. In addition the Company has also identified emerging issues in some areas that could result in change orders. In its Vogtle 3 and 4 Project Metrics Report dated April 2010 the Company identified [redacted] potential changes of which [redacted] were estimated to have a cost impact over $[redacted] and [redacted] were estimated to have cost impact between $[redacted] and $[redacted]. Most of the potential changes identified to date are due [redacted] while some have been at the Company's request. The Company is developing a more precise estimate of the costs of these potential change orders. It is likely that more potential change orders will be identified as the project proceeds. These changes will be monitored and evaluated by the CM and Commission Staff.

V VERIFICATION AND APPROVAL OF COSTS

Q. WHAT ARE YOUR RECOMMENDATIONS CONCERNING VERIFICATION AND APPROVAL OF EXPENDITURES THROUGH DECEMBER 2009 AND THE REVISED BUDGET FORECAST?

A. I recommend that the $[redacted] of Total Project Cost expenditures through December 2009 as shown on Table 1.1 be verified and approved by the Commission as requested by the Company. I also recommend that subject to the recommendations of Staff witness Tom Newsome concerning Amendment 3 to the EPC contract, the revised Current Forecast of Total Project Cost on Table 1.1 submitted in the February 2010 Second Semi-Annual Vogtle Construction Monitoring Report be approved by the Commission.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.

EXHIBIT STF-1

Resume of William R. Jacobs, Jr.

EDUCATION: Ph.D., Nuclear Engineering, Georgia Tech 1971
MS, Nuclear Engineering, Georgia Tech 1969
BS, Mechanical Engineering, Georgia Tech 1968

ENGINEERING REGISTRATION: Registered Professional Engineer

PROFESSIONAL MEMBERSHIP: American Nuclear Society

EXPERIENCE:

Dr. Jacobs has over thirty-five years of experience in a wide range of activities in the electric power generation industry. He has extensive experience in the construction, startup and operation of nuclear power plants. While at the Institute of Nuclear Power Operation (INPO), Dr. Jacobs assisted in development of INPO's outage management evaluation group. He has provided expert testimony related to nuclear plant operation and outages in Texas, Louisiana, South Carolina, Florida, Wisconsin, Indiana, Georgia and Arizona. He currently provides nuclear plant operational monitoring services for GDS clients. He is assisting the Florida Office of Public Counsel in monitoring the development of four new nuclear units in the State of Florida. He will provide testimony concerning the prudence of expenditures for these nuclear units. He has assisted the Georgia Public Service Commission staff in development of energy policy issues related to supply-side resources and in evaluation of applications for certification of power generation projects and assists the staff in monitoring the construction of these projects. He has also assisted in providing regulatory oversight related to an electric utility's evaluation of responses to an RFP for a supply-side resource and subsequent negotiations with short-listed bidders. He has provided technical litigation support and expert testimony support in several complex law suits involving power generation facilities. He monitors power plant operations for GDS clients and has provided testimony on power plant operations and decommissioning in several jurisdictions. Dr. Jacobs represents a GDS client on the management committee of a large coal-fired power plant currently under construction. Dr. Jacobs has provided testimony before the Georgia Public Service Commission, the Public Utility Commission of Texas, the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Iowa State Utilities Board, the Louisiana Public Service Commission, the Florida Public Service Commission, the Indiana Regulatory Commission, the Wisconsin Public Service Commission, the Arizona Corporation Commission and the FERC.

A list of Dr. Jacobs' testimony is available upon request.

<u>1986-Present</u> GDS Associates, Inc.

As Vice-President, Dr. Jacobs directs GDS' nuclear plant monitoring activities and has assisted clients in evaluation of management and technical issues related to power plant construction, operation and design. He has evaluated and testified on combustion turbine projects in certification hearings and has assisted the

Georgia PSC in monitoring the construction of the combustion turbine projects. Dr. Jacobs has evaluated nuclear plant operations and provided testimony in the areas of nuclear plant operation, construction prudence and decommissioning in nine states. He has provided litigation support in complex law suits concerning the construction of nuclear power facilities.

1985-1986 Institute of Nuclear Power Operations (INPO)

Dr. Jacobs performed evaluations of operating nuclear power plants and nuclear power plant construction projects. He developed INPO Performance Objectives and Criteria for the INPO Outage Management Department. Dr. Jacobs performed Outage Management Evaluations at the following nuclear power plants:

- Connecticut Yankee - Connecticut Yankee Atomic Power Co.
- Callaway Unit I - Union Electric Co.
- Surry Unit I - Virginia Power Co.
- Ft. Calhoun - Omaha Public Power District
- Beaver Valley Unit 1 - Duquesne Light Co.

During these outage evaluations, he provided recommendations to senior utility management on techniques to improve outage performance and outage management effectiveness.

1979-1985 Westinghouse Electric Corporation

As site manager at Philippine Nuclear Power Plant Unit No. 1, a 655 MWe PWR located in Bataan, Philippines, Dr. Jacobs was responsible for all site activities during completion phase of the project. He had overall management responsibility for startup, site engineering, and plant completion departments. He managed workforce of approximately 50 expatriates and 1700 subcontractor personnel. Dr. Jacobs provided day-to-day direction of all site activities to ensure establishment of correct work priorities, prompt resolution of technical problems and on schedule plant completion.

Prior to being site manager, Dr. Jacobs was startup manager responsible for all startup activities including test procedure preparation, test performance and review and acceptance of test results. He established the system turnover program, resulting in a timely turnover of systems for startup testing.

As startup manager at the KRSKO Nuclear Power Plant, a 632 MWE PWR near Krsko, Yugoslavia, Dr. Jacobs' duties included development and review of startup test procedures, planning and coordination of all startup test activities, evaluation of test results and customer assistance with regulatory questions. He had overall responsibility for all startup testing from Hot Functional Testing through full power operation.

1973 - 1979 NUS Corporation

As Startup and Operations and Maintenance Advisor to Korea Electric Company during startup and commercial operation of Ko-Ri Unit 1, a 595 MWE PWR near Pusan, South Korea, Dr. Jacobs advised KECO on all phases of startup testing and plant operations and maintenance through the first year of commercial operation. He assisted in establishment of administrative procedures for plant operation.
As Shift Test Director at Crystal River Unit 3, an 825 MWE PWR, Dr. Jacobs directed and performed many systems and integrated plant tests during startup of Crystal River Unit 3. He acted as data analysis engineer and shift test director during core loading, low power physics testing and power escalation program.

As Startup engineer at Kewaunee Nuclear Power Plant and Beaver Valley, Unit 1, Dr. Jacobs developed and performed preoperational tests and surveillance test procedures.

1971 - 1973 Southern Nuclear Engineering, Inc.

Dr. Jacobs performed engineering studies including analysis of the emergency core cooling system for an early PWR, analysis of pressure drop through a redesigned reactor core support structure and developed a computer model to determine tritium build up throughout the operating life of a large PWR.

SIGNIFICANT CONSULTING ASSIGNMENTS:

Georgia Public Service Commission – Selected as the GPSC's Independent Construction Monitor for the Plant Vogtle 3 and 4 nuclear construction projects. Assists the Commission staff in providing oversight of all aspects of the Plant Vogtle 3 and 4 project. Provides testimony in the semi-annual hearing before the GPSC on the Vogtle project.

South Carolina Office of Regulatory Staff – Assisted the South Carolina Office of Regulatory Staff in evaluation of South Carolina Electric and Gas' request for certification of two AP1000 nuclear power plants at the V.C. Summer site.

Florida Office of Public Counsel – Assists the Florida Office of Public Counsel in monitoring the development of four new nuclear power plants in Florida including providing testimony on the prudence of expenditures.

East Texas Electric Cooperative – Represents ETEC on the management committee of the Plum Point Unit 1 a 650 Mw coal-fired plant under construction in Osceola, Arkansas and represents ETEC on the management committee of the Harrison County Power Project, a 525 Mw combined cycle power plant located near Marshall, Texas.

Arizona Corporation Commission – Evaluated operation of the Palo Verde Nuclear Generating Station during the year 2005. Included evaluation of 11 outages and providing written and oral testimony before the Arizona Corporation Commission.

Citizens Utility Board of Wisconsin – Evaluated Spring 2005 outage at the Kewaunee Nuclear Power Plant and provided direct and surrebuttal testimony before the Wisconsin Public Service Commission.

Georgia Public Service Commission - Assisted the Georgia PSC staff in evaluation of Integrated Resource Plans presented by two investor owned utilities. Review included analysis of purchase power agreements, analysis of supply-side resource mix and review of a proposed green power program.

State of Hawaii, Department of Business, Economic Development and Tourism – Assisted the State of Hawaii in development and analysis of a Renewable Portfolio Standard to increase the amount of renewable energy resources developed to meet growing electricity demand. Presented the results of this work in testimony before the State of Hawaii, House of Representatives.

Georgia Public Service Commission - Assisted the Georgia PSC staff in providing oversight to the bid evaluation process concerning an electric utility's evaluation of responses to a Request for Proposals for supply-side resources. Projects evaluated include simple cycle combustion turbine projects, combined cycle combustion turbine projects and co-generation projects.

Millstone 3 Nuclear Plant Non-operating Owners – Evaluated the lengthy outage at Millstone 3 and provided analysis of outage schedule and cost on behalf of the non-operating owners of Millstone 3. Direct testimony provided an analysis of additional post-outage O&M costs that would result due to the outage. Rebuttal testimony dealt with analysis of the outage schedule.

H.C. Price Company – Evaluated project management of the Healy Clean Coal Project on behalf of the General Contractor, H.C. Price Company. The Healy Clean Coal Project is a 50 megawatt coal burning power plant funded in part by the DOE to demonstrate advanced clean coal technologies. This project involved analysis of the project schedule and evaluation of the impact of the owner's project management performance on costs incurred by our client.

Steel Dynamics, Inc. – Evaluated a lengthy outage at the D.C. Cook nuclear plant and presented testimony to the Indiana Utility Regulatory Commission in a fuel factor adjustment case Docket No. 38702-FAC40-S1.

Florida Office of Public Counsel - Evaluated lengthy outage at Crystal River Unit 3 Nuclear Plant. Submitted expert testimony to the Florida Public Service Commission in Docket No. 970261-EI.

United States Trade and Development Agency - Assisted the government of the Republic of Mauritius in development of a Request for Proposal for a 30 MW power plant to be built on a Build, Own, Operate (BOO) basis and assisted in evaluation of Bids.

Louisiana Public Service Commission Staff - Evaluated management and operation of the River Bend Nuclear Plant. Submitted expert testimony before the LPSC in Docket No. U-19904.

U.S. Department of Justice - Provided expert testimony concerning the in-service date of the Harris Nuclear Plant on behalf of the Department of Justice U.S. District Court.

City of Houston - Conducted evaluation of a lengthy NRC required shutdown of the South Texas Project Nuclear Generating Station.

Georgia Public Service Commission Staff - Evaluated and provided testimony on Georgia Power Company's application for certification of the Intercession City Combustion Turbine Project - Docket No. 4895-U.

Seminole Electric Cooperative, Inc. - Evaluated and provided testimony on nuclear decommissioning and fossil plant dismantlement costs - FERC Docket Nos. ER93-465-000, et al.

Georgia Public Service Commission Staff - Evaluated and prepared testimony on application for certification of the Robins Combustion Turbine Project by Georgia Power Company - Docket No. 4311-U.

North Carolina Electric Membership Corporation - Conducted a detailed evaluation of Duke Power Company's plans and cost estimate for replacement of the Catawba Unit 1 Steam Generators.

Georgia Public Service Commission Staff - Evaluated and prepared testimony on application for certification of the McIntosh Combustion Turbine Project by Georgia Power Company and Savannah Electric Power Company - Docket No. 4133-U and 4136-U.

New Jersey Rate Counsel - Review of Public Service Electric & Gas Company nuclear and fossil capital additions in PSE&G general rate case.

Corn Belt Electric Cooperative/Central Iowa Power Electric Cooperative - Directs an operational monitoring program of the Duane Arnold Energy Center (565 Mwe BWR) on behalf of the non-operating owners.

Cities of Calvert and Kosse - Evaluated and submitted testimony of outages of the River Bend Nuclear Station - PUCT Docket No. 10894.

Iowa Office of Consumer Advocate - Evaluated and submitted testimony on the estimated decommissioning costs for the Cooper Nuclear Station - IUB Docket No. RPU-92-2.

Georgia Public Service Commission/Hicks, Maloof & Campbell - Prepared testimony related to Vogtle and Hatch plant decommissioning costs in 1991 Georgia Power rate case - Docket No. 4007-U.

City of El Paso - Testified before the Public Utility Commission of Texas regarding Palo Verde Unit 3 construction prudence - Docket No. 9945.

City of Houston - Testified before Texas Public Utility Commission regarding South Texas Project nuclear plant outages - Docket No. 9850.

NUCOR Steel Company - Evaluated and submitted testimony on outages of Carolina Power and Light nuclear power facilities - SCPSC Docket No. 90-4-E.

Georgia Public Service Commission/Hicks, Maloof & Campbell - Assisted Georgia Public Service Commission staff and attorneys in many aspects of Georgia Power Company's 1989 rate case including nuclear operation and maintenance costs, nuclear performance incentive plan for Georgia and provided expert testimony on construction prudence of Vogtle Unit 2 and decommissioning costs of Vogtle and Hatch nuclear units - Docket No. 3840-U.

Swidler & Berlin/Niagara Mohawk - Provided technical litigation support to Swidler & Berlin in law suit concerning construction mismanagement of the Nine Mile 2 Nuclear Plant.

Long Island Lighting Company/Shea & Gould - Assisted in preparation of expert testimony on nuclear plant construction.

North Carolina Electric Membership Corporation - Prepared testimony concerning prudence of construction of Carolina Power & Light Company's Shearon Harris Station - NCUC Docket No. E-2, Sub537.

City of Austin, Texas - Prepared estimates of the final cost and schedule of the South Texas Project in support of litigation.

Tex-La Electric Cooperative/Brazos Electric Cooperative - Participated in performance of a construction and operational monitoring program for minority owners of Comanche Peak Nuclear Station.

Tex-La Electric Cooperative/Brazos Electric Cooperative/Texas Municipal Power Authority (Attorneys - Burchette & Associates, Spiegel & McDiarmid, and Fulbright & Jaworski) - Assisted GDS personnel as consulting experts and litigation managers in all aspects of the lawsuit brought by Texas Utilities against the minority owners of Comanche Peak Nuclear Station.

NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION
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Site: http://www.nrc.gov

No. S-10-016 June 8, 2010

"State of the Nuclear Renaissance – A Regulatory Perspective"
Prepared Remarks of Kristine L. Svinicki, Commissioner
U.S. Nuclear Regulatory Commission

Capitol Hill Symposium VIII
Sponsored by the U.S Nuclear Infrastructure Council
June 8, 2010

Thank you, and good morning, everyone. I am pleased to be able to join this distinguished group of speakers and panel members and to have the opportunity to participate in this year's Capitol Hill Symposium on the state of the nuclear renaissance.

As the recent national news headlines make clear every day, finding and developing new sources of energy has been and will continue to be a national priority and will encompass both traditional and new energy sources for the foreseeable future. Regrettably, as the headlines from the Gulf of Mexico also make clear, energy development activities are not free either from risk or environmental consequence, particularly if they are pursued without adequate attention to safety. As a regulator, whose job it is to enable commercial energy activities to proceed, provided that safety, environmental, security or other applicable requirements are met, I can assure you that this regulatory role is neither easy nor at times popular, but it is a necessary and vital role that contributes to the ultimate success of energy development activities and, if performed well, diminishes the likelihood of adverse consequences.

In my remarks today, I will be commenting on the current status of the "nuclear renaissance" from the position of the regulator. Before I begin, however, I need to set the appropriate context for my remarks. First, my perspective is different from that of other participants in this conference. As a nuclear regulator, it is not my role to advocate for the commercial uses of nuclear energy. My agency, the U.S. Nuclear Regulatory Commission, is an independent nuclear regulatory body that is responsible for regulating the safe and secure use of nuclear technology and materials, and is separate from the Department of Energy, which is the U.S. Government agency responsible for developing and promoting nuclear technologies, as well as other sources of energy. Secondly, the views I am about to express are my own and may not represent the collective view of the Commission.

I think the best place to begin to explain the regulatory perspective and how it differs from the perspective of the industry and others is to focus briefly on the term "nuclear renaissance" itself. In my view, we have certainly experienced a renaissance in terms of renewed interest in nuclear power. The NRC, as many of you know, has received 18 applications for combined operating licenses for 28 new nuclear power plants; of these, 13 applications for 22 units have been docketed and are under active NRC review, while five applications have been suspended or deferred by the applicants for reasons that are unrelated to the NRC's regulatory processes. These are the first applications for new reactors that the agency has received in roughly three decades. In addition, the Tennessee Valley Authority has decided to complete construction of its Watts Bar Unit 2, a current generation nuclear plant whose construction was deferred in 1985. TVA is also evaluating whether it may pursue the same approach with respect to completion of either of its Bellefonte units in Alabama. At the same time, interest in the development of more advanced reactors, including small modular reactor designs, is continuing. Accompanying these developments is increased interest in, and additional applications for, the licensing of uranium recovery sites in the western United States.

Without question these are developments that were not necessarily foreseen just a decade or so ago and they represent a change in focus for the nuclear industry and the NRC. At this point, both the NRC and the industry are fully engaged. Arguably, this is the stage when the regulator has – in some sense – the primary role and the greatest impact on overall project scheduling. But reviewing new reactor applications is not our only role – and this is a key point in understanding the regulatory perspective. As I and some of my former and current Commission colleagues have stated on other occasions, the resurgence in interest in new nuclear power plants has only been made possible by the sustained safe and reliable performance of currently operating plants. Neither the NRC nor the industry can afford to lose sight of that fact.

The NRC considers the oversight of the 104 currently licensed and operating reactors to be a primary mission, and the great majority of our resources remain focused on these facilities. Just as the NRC's credibility and reputation depend on our effective oversight of these operating plants, so, too, does the reputation and credibility of the nuclear industry depend on the continued safe operation of every one of these plants. Public confidence, that elusive quality that the NRC has worked so hard to restore in the decades subsequent to the Three Mile Island accident and that in recent years has been enhanced by the promise of new reactor designs and by the perceived need to be less dependent on fossil fuels, is now and will always be one accident away from dissipation. As a result, both the regulator and the regulated industry must remain vigilant and focused on safety.

That being said, the NRC is fully capable of addressing both oversight of operating reactors and new reactor licensing tasks, and we are doing so. Given that we are at a critical stage in the new reactor review process and that the NRC must also remain focused on operating reactors, however, I think there are at least three questions that could be asked about expectations for regulatory performance during this period:

- First, is the NRC regulatory structure prepared to handle the increased new reactor activity?
- Second, will the regulatory process be efficient and produce regulatory predictability?
- Third, will issues related not to the applications, but to the regulatory process itself, have a negative impact on the future development of nuclear power?

I want to explore these issues briefly with you, once again from the regulatory perspective and from my own observations.

As to the first question, the NRC has taken many steps in advance of the wave of new reactor applications in order to ensure that the agency will be in a position to handle the increased activity associated with new reactors. The Commission, starting in 1989, substantially modified its licensing process, which had not changed since the early days of the NRC's existence. The new process, contained in the Commission's regulations as 10 CFR Part 52, envisioned a modified reactor licensing process with three potential steps: certifying a plant design, obtaining an early site permit, and submitting an application for a combined license or COL.

The purpose of the new process was to provide both applicants and the public with the opportunity to resolve siting and design issues before construction would begin and to provide a more predictable and stable licensing environment than had been available under the 10 CFR Part 50 process. The use of standardized designs would eventually ensure a more streamlined NRC review process since design features would be similar for license applications utilizing the same reference design. In addition, the NRC created the Office of New Reactors to ensure that we had dedicated staff to focus solely on new reactor applications while the existing licensing organization for reactors – the Office of Nuclear Reactor Regulation – would remain devoted to the task of ensuring the safe and secure operation of the existing 104 operating reactors. We also substantially increased the number of agency staff involved in reviewing designs and new reactor license applications through an extensive recruitment effort over a three-year period.

In my opinion, the NRC has put in place the right structure and given that structure adequate resources to handle new reactor-related work. I also want to note, however, that at the same time that we have been hiring new staff, we have also lost many of our most experienced personnel to retirements, a phenomenon that the nuclear industry has also experienced. Moreover, we have been able to support a strong recruitment program through substantial growth in our annual budget in recent years. We cannot expect that growth to continue in the future, however, with the result that we may experience constraints on our flexibility in the future to continue to adjust in response to changes in our licensing workload. Nevertheless, I am convinced that the NRC is ready and is demonstrating today its ability to handle the 13 applications that are under active review, as well as the design certifications that are currently active.

Further, I believe that the framework for review of combined license applications – that of reference and subsequent COLAs – is logical and sound and can provide a greater degree of predictability in licensing reviews. While some have criticized the number and diversity of new reactor designs as an impediment to the envisioned drive towards standardization, the diversity does not, in my view, indicate a fickleness or failure to commit on the part of designers or industry but is simply a reality given the nature of markets and the structure of the energy industry in the United States. The ability to choose among designs and sizes of reactors allows applicants to tailor their technology selection to their needs. Moreover, I believe this greater technological diversity in any future fleet will be a potential strength, not a weakness. At bottom, the Part 52 process is well-established but will have to complete the journey of proving itself through the successful demonstration of its final stages.

On the human capital and workforce front, half of the agency's staff has now been at NRC for six years or less. When viewed through the prism of the demands of the agency's workload and the substantial number of licensing milestones that pepper the NRC's new reactor licensing schedules in fiscal years 2011 and 2012, this poses a human capital and knowledge management challenge unprecedented in the NRC's history.

Simply put, the challenge of having a newer staff is that we must gain greater confidence in defining and communicating what it is we will need in order to come to closure on open issues and in adjudicating and communicating our technical determinations in a timely and predictable manner. But there are well-founded reasons for confidence. The NRC's workforce is technically and professionally strong, is well-motivated, and performance indicators of its work and safety culture rank among the best in class.

The title of "Best Place to Work in the Federal Government" – earned by the NRC for the second time in a row – in my view, correlates strongly with the results of the NRC's safety culture and work climate surveys. Results of the latest survey of the NRC's employees by the Office of the Inspector General, compared to a similar survey in 2005, found substantial improvements in 16 of 17 categories surveyed. These scores were generally in line with or better than those of U.S. high-performance companies.

I will linger for a moment, briefly, on these survey results because, again, at the end of the day – for a regulatory agency in particular – the determining factor in whether or not we can accomplish the mission and get the job done is going to boil down to one thing – our people. The NRC's safety culture and work climate survey results indicated the following:

- NRC employees show strong support of and alignment with NRC mission, goals, objectives and values;
- Employees believe that multiple levels of NRC are well-managed;
- Management style and valuing differences are close to best-in-class levels;
- Management supports innovative solutions and highly values individual input;
- Strong respect and cooperation exist among all employees;
- There are excellent opportunities for personal and professional growth;
- Employees are comfortable in expressing differing views with management; and
- Employees are fulfilled and consider their jobs important to the agency.

It is appropriate, in my view, that the NRC – as the regulator – has returned such strong results in assessing its own, internal safety culture. Surely, we could have no stronger foundation to build upon as we rise to the challenges ahead. These results are also a noteworthy complement to the industry-wide focus on the importance of safety culture. In other words, the NRC needs to exhibit the same cultural values that we expect of the industry. And just like industry, we are going to keep striving to improve upon these results.

While structure and resources are quantifiable, efficiency and stability are more subjective. With respect to the second question I posed – that of whether the regulatory process will be efficient and produce regulatory predictability – I would like to examine this question through the prism of the NRC's Principles of Good Regulation. Many of you in this room likely are very familiar with these principles, but I ask you to indulge me for a moment while I discuss them briefly.

Originally issued by the Commission in 1991, the Principles of Good Regulation are intended as a guide to both agency decision-making and the individual conduct of NRC employees. They are described as fundamental guideposts in ensuring "the quality, correctness, and consistency of our regulatory activities." I believe these principles articulate the standards by which the regulated community and the broader public should judge the NRC as a regulator – charged with ensuring the public trust.

The first principle – that of independence – calls for the "highest possible standards of ethical performance and professionalism" but notes that independence "does not imply isolation." All available facts and opinions must be sought openly. Conflicting public interests must be considered and final decisions must be based on objective, unbiased assessments of all information, and documented with reasons explicitly stated.

The second principle – openness – describes nuclear regulation as the public's business. The public must have the opportunity to participate in the regulatory process and open channels of communication must be maintained.

The third principle – that of efficiency – notes that the American taxpayer, the rate-paying consumer, and licensees are all entitled to the best possible management and administration of regulatory activities, which should also be consistent with the degree of risk reduction they achieve. Regulatory decisions should be made without undue delay.

The fourth principle – clarity – calls for regulations that are coherent, logical, and practical. Agency positions should be readily understood and easily applied.

The fifth and final principle – reliability – states that regulatory actions should always be fully consistent with written regulations and should be promptly, fairly, and decisively administered so as to lend stability to the nuclear operational and planning processes. Most importantly, this principle supports the objective that – once established – regulation should be perceived to be reliable and not unjustifiably in a state of transition.

In issuing the Principles of Good Regulation, the NRC has offered to be judged against them. Where we fall short, we should be challenged to do better. Where we can further improve an already good process, we should seek to do that, too.

But in the context of the topic of today's symposium, which is the nuclear renaissance, I will concentrate on the principles of efficiency and reliability. With respect to efficiency, there have been calls for the NRC to shorten the timelines of its Part 52 licensing process. Both the industry and the NRC are engaged in licensing activities that have not been pursued in the United States for three decades. We are dealing with the initial wave of license applications and my general sense is that most applicants would like to be able to rely on completing the review process under the expectation that the process will be stable. Although regulatory efficiency improves with time, developing and instituting fundamental changes to the Part 52 process "mid-stream" may introduce elements of uncertainty in the process that will diminish overall stability and reliability. If past is prologue, there is reason to expect future efficiency gains in the Part 52 process. I point specifically to NRC reviews of license renewal applications, which demonstrated a substantial improvement in the efficiency of the reviews for succeeding applications after the first few. Personally, I am confident that the NRC will be able to achieve similar improvements eventually in the COL process.

A core element of stability in the regulatory process will be the ability to convey some measure of confidence and surety in the schedules for rulemaking for design certifications and for the issuance of combined licenses for new reactors. During the NRC oversight hearing before a subcommittee of the Senate Committee on Environment and Public Works on May 5, 2010, the Commission was asked by members of the subcommittee if we thought NRC could provide greater transparency regarding the schedules for the final steps in the Part 52 process. In its policy statement on the conduct of new reactor licensing, the Commission decided to conduct the mandatory hearings for COL applications itself. In my view, and as I testified before the Senate subcommittee, I believe the Commission now needs to explore whether it is possible to develop and publish tentative schedules for the conduct of the mandatory hearings for the first few new reactor combined license applications – the earliest of which may need to be conducted as soon as 2011 – and whether such schedules would have enough foundation to be meaningful at this point. I indicated to the subcommittee my willingness to engage with my Commission colleagues on this question in the months ahead and exploring their views on the matter.

As an industry representative noted at that same Senate oversight hearing, the NRC, in establishing milestones for new reactor projects, had not provided a target date for a licensing decision for any project. In his view, the "goal should be to create a predictable process that results in a reasonable certainty for the start of safety-related construction for project applicants." While I agree on the need for predictability, I would make one significant distinction. The Commission cannot commit to any date for issuance of a license. The Atomic Energy Act authorizes the Commission to issue licenses, but does not compel it to do so. I can assure you that the Commission will not issue any license until it is fully satisfied that the public health and safety will be adequately protected.

That leads me to the issue of public confidence. As I noted earlier, public confidence is fragile, is difficult to earn and easy to lose, and can never be taken for granted. Support for the nuclear power option will vanish if the public loses faith in the integrity of the COL licensing process or in the safe operation of the 104 currently operating plants. I am certain that all of us in this room recognize that it is incumbent on the NRC and our licensees to ensure that these plants operate safely. Constant vigilance, development of a strong safety culture, attention to detail, and the recognition that safety always comes first are our mutual obligation to the American people.

And in reference to this shared obligation, I would be remiss if I didn't mention the role of the Institute of Nuclear Power Operations or INPO. The work of INPO embodies the nuclear power industry's willingness to strive for excellence. In my view, the industry's sustained commitment to striving for excellence in operations, complemented by the existence of a strong and independent regulator, provides a foundation for public confidence in the safety of nuclear power.

As for the last question I posed earlier, (will regulatory issues have a negative impact on the future development of nuclear power?), at this stage, I do not foresee any issues arising from the Part 52 process itself that would have an adverse impact on the future development of nuclear power; nor have any regulatory issues emerged in the reviews conducted to date that would warrant unusual concern. That does not mean that there are no regulatory issues at all. The NRC review process is designed to ensure that any safety concerns are indentified and resolved as early in the process as possible.

In closing, I want to share with you one conclusion that I have returned to again and again – in so many different contexts – in my two years of service as an NRC Commissioner: The nuclear profession is uniquely dependent on its people. People are the key enabler of success and are complicit when we fail to do what is expected.

From all I have observed, the enthusiasm and spirit of the incoming generation of nuclear professionals is high. They foresee the prospect of a front row seat for the next chapters to be written in the nuclear history of America and they intend to shape that history. Not content merely to accept what has been bequeathed to them, they intend to build upon it, advance it, and make it better – and in that way, to give something back. And that is really the challenge for all of us, however we find ourselves participating in these events.

In 1966, Robert F. Kennedy said, "Few will have the greatness to bend history itself. But each of us can work to change a small portion of events, and in the total of all these acts will be written the history of this generation."

Thank you.

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Obama Says Safe Nuclear Power Plants are a Necessary Investment

February 16, 2010 12:24 PM

From Sunlen Miller:

President Obama today **said that safe, new nuclear power plants are a "necessity"** as he announced more than $8 billion in federal loan guarantees to build **the first nuclear power plant in three decades**.

"Investing in nuclear energy remains a necessary step," the president said today at the IBEW Local Headquarters in Lanham, Maryland, "What I hope is that, with this announcement, we're underscoring both our seriousness in meeting the energy challenge and our willingness to look at this challenge, not as a partisan issue , but as a matter that's far more important than politics because the choices we make will affect not just the next generation but many generations to come."

Mr. Obama's announced plans to break ground on two new nuclear reactors at a Southern Company plant in Burke, Georgia – which he said will create thousands of construction jobs in the next year – with 800 permanent, well-paying jobs in years to come.

"And this is only the beginning," he promised, referencing his budget tripling loan guarantees to finance nuclear facilities across America which would spur more job creation.

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Acknowledging that there are some "serious drawbacks" with respect to nuclear power that still need to be addressed –like the storing and disposal of waste safety-- the president said the issue of safety would be an imperative going forward.

"That's why we've asked a bipartisan group of leaders and nuclear experts to examine this challenge. And these plants also have to be held to the highest and strictest safety standards to answer the legitimate concerns of Americans who live near and far from those facilities."

America's competitors, Mr. Obama said, are racing ahead on this issue and he said he will not accept falling behind.

"Japan and France have long invested heavily in this industry. Meanwhile, there are 56 nuclear reactors under construction around the world; 21 in China alone; six in South Korea; five in India," the president said, "Whether it's nuclear energy or solar or wind energy, if we fail to invest in the technologies of tomorrow, then we're going to be importing those technologies instead of exporting them. We will fall behind. Jobs will be produced overseas instead of here in the United States of America. And that's not a future that I accept."

Playing up the bipartisan appeal of his announcement, the president said that the announcement today is not welcome by all, but called for all to put the "same, old stale debates" behind them.

"Even when we have differences, we cannot allow those differences to prevent us from making progress," he said, "On an issue that effects our economy, our security, and the future of our planet, we can't keep on being mired in the same, old stale debates between the left and the right and between environmentalists and entrepreneurs."

Addressing the environmentalists that are opposed to nuclear power, the president said that the one plant in Georgia will cut carbon pollution by 16 million tons each year when compared to a similar coal plan, similarly to taking 3.5 million cars off the road he said.

"The fact is, even though we've not broken ground on a new power plant, new nuclear power plant in 30 years, nuclear energy remains our largest source of fuel that produces no carbon emissions. To meet our growing energy needs and prevent the worst consequences of climate change, we'll need to increase our supply the nuclear power. It's that simple."

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On the other side, the president said that there are those who have long advocated for nuclear power – like Republicans – and called on them to also recognize that there also has to be a system created of incentives to make clean energy profitable.

"Energy leaders and experts recognize that as long as producing carbon pollution carries no cost, traditional plants that use fossil fuels will be more cost effective than plants that use nuclear fuel. That's why we need comprehensive energy and climate legislation and why they legislation has drawn support from across the ideological spectrum."

The president said that his administration will be working on "areas of agreement" to pass a bipartisan energy and climate bill in the Senate.

Before delivering remarks the president toured a training center at the IBEW Local 26 headquarters which includes application that are useful for clean energy and low carbon technologies - including the construction of nuclear power plants.

While inspecting a wall of alarms and indicators, the president was invited to push a button which set off an alarm.

"I need that whenever the press is around," he said, joking and later adding that it was the first time since junior high he's gotten a chance to pull a fire alarm without getting in trouble.

-Sunlen Miller

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