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EXECUTIVE SECRETARY
G.P.S.C.

BEFORE THE
GEORGIA PUBLIC SERVICE COMMISSION
STATE OF GEORGIA

Re: Construction Monitoring Proceeding]	
for Georgia Power Company's Plant Vogtle]	Docket No. 29849
Units 3 and 4; Supplemental Information,]	
Staff Review and Opportunity for Settlement.]	

Initial Comments of the Southern Alliance for Clean Energy

COMES NOW the Southern Alliance for Clean Energy (hereafter "SACE"), and submits its initial comments regarding the Consortium Settlement with Georgia Power Company (hereafter "Company" or "GPC") and the Company's position that all costs incurred to date for the Vogtle Project have been prudently spent and that the new cost and schedule is a reasonable re-forecast for Vogtle Units 3 and 4.

I. Summary of Comments

Georgia Power Company has not met its burden of proof to show that all \$4,504,000,000¹ of the actual costs to date for the largest and most expensive construction project in the history of Georgia have been "prudently spent and that

¹ The Actual to Date Capital costs are \$3,509,000,000 and Actual to Date Financing costs are \$995,000,000. There is no specific amount listed in Georgia Power Company's Supplemental Information Report or any of the supporting documentation identifying the exact amount the Company is asking the Commission to review for prudence or the time period covered by the Company's request. Reference is made to the costs-to-date in the 14th VCM Report, Table 1.1, p. 6; Docket 29849, Georgia Power Company's Supplemental Information Report, p. __.

the new cost and schedule is a reasonable re-forecast.”² The Company’s cost and schedule re-forecast are just as unrealistic and unreliable as their previous cost and schedule projections.

No public hearings will be held on the matter. No witnesses will be presented or cross-examined on the matter. And Georgia Power ratepayers will be responsible for the costs approved by the Commission for the next 60 years or more. Additionally, the Company is seeking to recover \$419,000,000 for its share of the settlement costs with its Contractor plus costs for change orders.³ As expected, the Company is asserting that every penny of the \$4,923,000,000⁴ of the actual costs to date and settlement costs for the Project were prudently spent.

The Company failed to fully comply with the Commission’s Order Regarding Supplemental Information , Staff Review, and Opportunity for Settlement⁵ by not providing any response regarding replacement power costs. Rather than responding to the Commission’s five requests for supplemental information, the Company has focused most of its response on attempting to create a revisionist history that is 180-degrees opposite from its original “on time and on budget” commitment made in the Vogtle certification docket in 2008-2009 to the

² Docket 29849, Order Regarding Supplemental Information, Staff Review, and Opportunity for Settlement, p. 2, February 5, 2016.

³ Docket 29849, Georgia Power Company’s Application for Review and Approval of Definitive Settlement Agreement for Plant Vogtle Units 3 and 4 and Amendment 7 to the Engineering, Procurement and Construction Agreement, p. 6, January 21, 2016; Expert Report of Peter N. Wang On Prudence of Settlement, p. 5.

⁴ The \$4,923,000,000 contains the \$3,509,000,000 for the Actual to Date Capital costs, \$995,000,000 for the Actual to Date Financing costs and the litigation settlement costs and change orders of \$419,000,000.

⁵ Docket 29849, Document 161916, February 5, 2016.

Company's current position that unexpected risks and costs associated with a first-of-a-kind project could not have been anticipated.

The Company cannot completely divorce itself from the management oversight of the Project construction. The Company made a commitment in the certification docket to manage and oversee the Project.⁶ It had responsibility for prudent decision-making, especially where long-term and persistent problems, such as module fabrication and the completion of an Integrated Project Schedule ("IPS") severely impacted the Project construction schedule for years.

Problems with module fabrication were first mentioned by the Construction Monitor in the Second Semi-annual Vogtle Construction Monitoring ("VCM") Review in 2010, and were repeatedly mentioned by the Construction Monitor through the 13th VCM Review. The same is true for the IPS. Not until the 13th VCM Review was a complete IPS prepared and made available to the Commission. These types of systemic, long-term, critical construction problems clearly indicate that the Company did not diligently exercise its oversight responsibilities enumerated in the EPC Agreement.

There are several areas where expenditures for the Project were not prudently incurred and should not be included in the \$4,923,000,000 for Project costs, such as;

⁶ Docket 27800, Direct Testimony of Joseph A. Miller and Edward Day VI, pp. 27-28; Docket 29849, Eleventh VCM, Tr. 404.

- Any costs that should be allocated to Vogtle Units 1 and 2 are not prudent.
- Costs incurred for any portion of Vogtle Units 3 and 4 that must be tested and verified as operational, such as cooling towers, among other systems and components, should not be included in any consideration of prudence until they are fully tested and certified as operational.
- Any costs caused or incurred by the excessive and persistent module and sub-module fabrication problems.
- Any costs caused or incurred as a result of the Integrated Project Schedule not being completed in a timely manner pursuant to the EPC Agreement.
- All nuclear operator costs incurred after the initial operation dates of April 1, 2016, for Unit 3 and April 1, 2017, or Unit 4.

Based on the Project's history, the current cost and schedule for Vogtle Units 3 and 4 are only temporary place holders that will soon be changed to a higher cost and longer schedule. Both the Company's current cost and schedule reforecasts should be rejected by the Commission as unrealistic and unresponsive. In a recent data request response the Company acknowledged that as of December 2015 only 18% of the Unit 3 nuclear island and 9% of the Unit 4 nuclear island construction were complete.⁷ Nuclear island construction involves numerous critical path activities. Those activities include setting structural modules CA01,

⁷ Georgia Power Company response to STF-83-2 in Docket 29849, March 18, 2016

CA02 and CA03, setting the major reactor system components such as the reactor vessel, steam generators and pressurizer, and installation of reactor loop piping, smaller piping inside the containment and installation of electrical cables and instrumentation.⁸

The current commercial operation dates of June 1, 2019 for Unit 3 and June 1, 2020 for Unit 4 are the fourth official set of dates for the Project, and only 26.4% of the total Project man-hours for construction have been completed as of the Thirteenth VCM Review.⁹ An honest construction assessment should incorporate and adjust for additional Project construction delays and the corresponding increases in Project costs beyond the current 39 month delay. As no mitigation strategy has been submitted by Fluor Corporation, the new Project contractor, that supports the current claimed commercial operation dates of June 2019 for Unit 3 and June 2020 for Unit 4, these dates are untenable and unsupported by any evidence.

⁸ Docket 29849, Direct Testimony of Steven D. Roetger and William R. Jacobs, Jr., Ph.D., 12th VCM, p. 26)

⁹ Docket 29849, Direct Testimony of Steven D. Roetger and William R. Jacobs, Jr., Ph.D., Thirteenth Semi-Annual Vogtle Construction Monitoring Period, p. 16; Thirteenth VCM, Tr. 310 (Jacobs – “It’s based on man hours. earned man hours that have been earned on tasks needed to complete this project.”)

II. Comments

A. Introduction

SACE has been an active participant and intervenor associated with Vogtle Units 3 and 4 since the initial certification of the Project in Docket 27800, which the Commission approved in 2009. Even further back, SACE intervened in the 2004 and 2007 Georgia Power Integrated Resource Plans (“IRP”), Dockets 17687 and 24505, when the “nuclear option” was first mentioned and the Vogtle 3 and 4 Units were subsequently proposed, and the Vogtle Accounting Order Docket 22449 in 2006. As one of the few organizations that has diligently monitored the construction and participated in the semi-annual Vogtle construction monitoring reviews from the very beginning, SACE brings a unique prospective based on its years of experience and knowledge.

Based on its experience participating in every Vogtle construction monitoring review, SACE offers comments regarding those issues which deserve extra attention before any decision is made regarding whether to approve Georgia Power Company’s request to find that \$4,923,000,000 in current costs for the Project are prudent.

B. The Company Failed to Comply With the Commission's Vogtle Prudency Review Order by Not Providing Any Response Regarding Replacement Power Costs for Each Unit for the Duration of the Period When the Certificate Anticipated Commercial Operation and the Actual Commercial Operation Is Realized

The Commission's directive to the Company to provide the replacement power costs was simple and unambiguous. The Company's response is evasive and disingenuous. The Commission directed the Company to:

Calculate the cost of replacement power for each Unit for the duration of the period of when the certificate anticipated the commercial operation and the actual commercial operation. The company shall include its definition of commercial operation and shall include all assumptions made in its calculations.

(Docket 29849, Order Regarding Supplemental Information, Staff Review, and Opportunity for Settlement, p. 2, February 5, 2016) In response, the Company said it could not make the calculation because "the actual commercial operation date has not yet been achieved." (Docket 29849, Georgia Power Company's Supplemental Information Report, p. 31) According to the Company it will not know what the "actual commercial operation date" is until it happens!

This Project has had several commercial operation date ("COD") revisions beginning with the original CODs of April 1, 2016 for Unit 3 and April 1, 2017 for Unit 4. The next CODs were November 1, 2016 and November 1, 2017 for Units 3 and 4 respectively. Then the CODs were pushed back to December 31, 2017 for Unit 3 and December 31, 2018 for Unit 4. Those CODs did not last long before

June 1, 2019 and June 1, 2020 were selected as the most recent completion dates. Of note, the Construction Monitor and PSC Staff witnesses have predicted these delays before the Company has formally acknowledged them and has also challenged the Company's current schedule estimates. (Docket 29849, 13th VCM, Tr. 343, 345)

The Company reported in the Fourteenth VCM Report, "[t]he in-service target dates of June 2019 and June 2020 were reaffirmed in the Definitive Settlement Agreement and remain unchanged since the 12th Vogtle Construction Monitoring ("VCM") Report." (Docket 29849, Fourteenth Semi-annual Vogtle Construction Monitoring Report, p. 4) SACE recommends that the Commission should immediately direct the Company to comply with its order and produce the replacement fuel costs using the dates of June 1, 2019 for Unit 3 and June 1, 2020 for Unit 4.

C. The Company Cannot Completely Divorce Itself from Its Responsibilities To Provide Management Oversight of the Vogtle Project

The Company knew about the long-term and persistent problems with the nuclear module and sub-module fabrication and the Integrated Project Schedule ("IPS") that contributed to the current construction delays and cost overruns. In the First Semi-Annual VCM the Company described the Project management structure it had created. "The Company has adopted a streamlined and effective

project management structure that includes the creation of an Executive Vice President of Nuclear Development position that reports directly to the CEOs of Georgia Power and Southern Nuclear. The Vogtle Project Management Board was established to act as the highly integrated senior management oversight board.” (Docket 29849, First Semi-Annual VCM, Direct Testimony of Jeffrey A. Burleson, pp. 4-5) Later in Mr. Burleson’s testimony he responded to the question, “[w]hat notable challenges has [sic] the Company managed during this First Semi-Annual reporting period?” by explaining that, “. . .while the Project continues to be on schedule and on budget, many issues are being managed and watched, some of which could put pressure on the schedule and budget.” (Id. at p. 6) He then provides an extended description of the various major construction issues the Company was addressing and managing. Finally, he concluded by saying, “[w]hile these issues are being **actively managed**, they are not yet resolved.” (Id. at pp. 6-7) (Emphasis supplied)

The Company was never an absentee manager that merely reviewed invoices and signed checks. They had created an elaborate management structure for the Vogtle Project and actively participated in its oversight and management of the construction process. From the very beginning Georgia Power made it clear to the Commission what their role would be in the management and oversight of the Vogtle Project. In the certification proceeding for Vogtle Units 3 and 4 Joseph A.

Miller and Edward Day VI testified how Southern Nuclear and their Engineering and Construction Services (“E&CS”) organization would function together in the oversight of the new nuclear units. They stated,

As described in more detail above, Southern Nuclear will be responsible for the management and oversight of the licensing, QA, engineering and procurement portions of the project. Southern Nuclear will be responsible for implementing the EPC agreement and will coordinate the multiple project functions such as EPC implementation, overall budget oversight, schedule integration, licensing, QA, fuel, and preparation for long term operations. As stated in the answer above, E&CS will be responsible for the management and oversight of the construction portion of the project. Although both Southern Nuclear and E&CS employees will remain employees of their respective companies, they will functionally report to the same project organization within Southern Nuclear. . . . The functional reporting to Southern Nuclear ensures a clear chain of command with authority and responsibility for the success of the project. In all regards, Southern Nuclear will act in its agency capacity on behalf of Georgia Power and the Co-owners.

(Docket 27800, Direct Testimony of Joseph A. Miller and Edward Day VI, p. 28)

The Company’s detailed testimony clearly acknowledges that critical construction functions, such as quality assurance, engineering, EPC implementation and schedule integration were all areas that Southern Nuclear would be responsible for the “management and oversight.”

In the 8th VCM Review the Staff witnesses stated, “Southern Nuclear Operating Corporation (“SNC”), as the COL [Combined Operating License] Licensee for the Project, acts as the agent for the Co-owners and as such, bears

ultimate responsibility for meeting the requirements of the Atomic Energy Act of 1954 and NRC regulations.” (Docket 29849, Direct Testimony of Steven D. Roetger and William R. Jacobs, Jr., Ph.D., 8th Semi-annual Vogtle Construction Monitoring Review, pp. 7-8) Later in their pre-filed testimony the Staff witnesses describe the quality control issues related to the placement of the rebar in the Unit 3 nuclear island (“NI”). They stated,

. . .the NRC identified that the rebar bend radius of certain rebar did not meet American Concrete Institute (“ACI”) requirements. This code violation resulted in the removal of approximately 280 pieces of rebar from the NI. The primary cause for the installation of this deficient rebar was poor vendor oversight, in the form of source inspections and poor receipt inspections by the Consortium. It also indicates that **SNC did not provide sufficient oversight of these critical Consortium requirements**. Also, during this same inspection, the NRC identified that received and installed embed plates did not conform to purchase requirements.

(Id. at pp. 9-10) (Emphasis supplied) Staff’s conclusion clearly indicates that Southern Nuclear failed in its oversight responsibilities regarding the installation of rebar in the nuclear island.

1. Persistent Problems with the Nuclear Module Fabrication Plagued the Project from the Beginning

The Construction Monitor has repeatedly alerted the Commission to the serious problems with the module and sub-module fabrication since the Second Semi-Annual VCM. In his Third Semi-Annual VCM pre-filed testimony the

Construction Monitor stated, “However, some of the issues and concerns that were identified and discussed in the second semi-annual VCM proceeding have not been resolved at this time. These issue [sic] include: design and fabrication of modules and submodules at the Shaw Modular Solutions (“SMS”) facility as required to meet the Project schedule; . . .” (Docket 29849, Direct Testimony of William R. Jacobs, Jr., Ph.D., Third Semi-annual Vogtle Construction Monitoring Review, pp. 5-6)

The Construction Monitor’s criticism has been consistent throughout the construction review process. In December 2012 he stated, “[t]he Consortium’s¹⁰ inability to design, fabricate and assemble structural modules to meet the Project schedule is another example of unsatisfactory Consortium performance that I would characterize as even worse than their FNC [first nuclear concrete] performance.” (Docket 29849, Direct Testimony of William R. Jacobs, Jr., Ph.D., Seventh Semi-annual Vogtle Construction Monitoring Review, p. 16) One of the major selling points the Company used to demonstrate how project costs would be controlled was the central fabrication facility in Lake Charles, Louisiana. This never happened.

In his Seventh VCM pre-filed testimony the Construction Monitor described an “extreme example” of the problems plaguing the fabrication of the sub-

¹⁰ Westinghouse Electric Company LLC and Stone & Webster, Inc. a subsidiary of The Shaw Group Inc., which was acquired by Chicago Bridge & Iron Company N.V.

modules. (Docket 29849, Direct Testimony of William R. Jacobs, Jr., Ph.D., 7th VCM, p. 17) Dr. Jacobs highlighted how a critical sub-module for the assembly of module CA20 that was completed in April 2012 but had “not yet been shipped to the Vogtle site due to paperwork deficiencies.” (Id.) In his testimony on December 18, 2012, when asked how long the paperwork problem had existed Dr. Jacobs said, “**since day one.**” (Docket 29849, 7th VCM, Tr. 325)(Emphasis supplied) To allow construction activities to be seriously delayed from “day one” because of paperwork problems is completely irresponsible and demonstrates a clear lack of management and oversight by all parties. Dr. Jacobs highlighted the absurdity of the matter by stating,

When fabrication of some sub-modules was completed, the required quality assurance paperwork was of such poor quality that the completed sub-modules could not be shipped. Quality Assurance (QA) paperwork problems included lost paperwork, missing signatures, and illegible notes. On some occasions, resolution of the quality assurance paperwork issues took longer than fabrication of the sub-modules.

(Docket 29849, Direct Testimony of William R. Jacobs, Jr., Ph.D., 7th VCM, p. 17)

Not until March or April 2014 did the Consortium finally take some decisive action by bringing in three new subcontractors to complete the nuclear module and sub-module fabrication: Oregon Iron Works, SMCi and the Toshiba subsidiary IHI. What was Georgia Power Company doing when these known and obvious problems with module and sub-module design and fabrication were delaying the

entire project and driving costs higher? Additionally, the multiple changes in Contractors from Shaw to CB&I and finally to Fluor in less than seven years is a clear indication that major construction problems existed with the Project.

While the Consortium was responsible for construction activities, the prolonged and significant problems with the nuclear module construction exacerbated the construction schedule delay and cost issues for the entire Project. Letting a known problem fester until it became a crisis is irresponsible and imprudent behavior on the part of Georgia Power.

2. The Lack of a Final and Complete Integrated Project Schedule Six Years Into the Vogtle Project is Clearly Unreasonable and Imprudent

The Advocacy Staff declared in the Eleventh Semi-Annual VCM Report that the lack of an effective Integrated Project Schedule (“IPS”) to manage the Vogtle Project, “[i]n fact runs counter to any prudent project management, nuclear or otherwise, the Engineering, Procurement, and Construction Agreement requirements, and the nuclear industry’s own self-funded INPO Principles for Excellence in Nuclear Project Construction.” (Docket 29849, Eleventh VCM, Roetger and Jacobs Pre-filed Direct Testimony, p. 24) The Company’s ineffective management oversight of the Vogtle Project exacerbated scheduling and construction problems, and it failed to live up to its commitment made in the

certification docket. (See Docket 27800, Direct Testimony of Joseph A. Miller an Edward Day VI, p. 28) (SACE Comments, pp. 9-10)

Yes, this is one of the first new nuclear construction projects in almost thirty years. Yes, this is a new nuclear reactor design. And yes, the Company and Commission were made aware of the risks such a project posed before and during the certification docket. But no, the Company was not excused from ignoring its obligations to ratepayers and the Commission to comply with the terms of the EPC agreement and produce an IPS “that is realistic, understood and agreed upon by all parties.” (Eleventh VCM, Tr. 290) Not having a final workable IPS until February 2015, nearly six years after the Vogtle Project was certified, adversely impacted the entire Vogtle Project construction schedule and added significant additional costs that are not prudent. A determination of the additional costs incurred because of the lack of a complete IPS must be made in order to make an adjustment to the prudent construction costs.

3. Any Costs That Should be Allocated to Vogtle Units 1 and 2 Are Not Prudent and Should be Disallowed

The Thirteenth Semi-annual Vogtle Construction Monitoring Report and the Company’s response to STF-73-6 state that expenditures associated with the construction of Vogtle Units 3 and 4 benefit Vogtle Units 1 and 2. Footnotes 1 and 3 in Table 1.1 in the 13th VCM Report unequivocally state that expenditures for

Units 3 and 4 benefit Units 1 and 2. Footnote 1 refers to the EPC Base Fixed Semi Annual Escalation and states, “Includes \$28 million for EPC Joint Use buildings (that benefit Vogtle 1 & 2).” Footnote 3 refers to transmission interconnection expenses and states, “Includes \$23 million for Transmission that benefits Units 1 and 2.” Discovery response STF-73-6 provided that, “Training Center B includes \$4 million that benefits Units 1 and 2.” While the exact amount of expenses that benefit Units 1 and 2 are subject to review, it is uncontested that there are construction expenses for the Project that provide benefits to Units 1 and 2 and should be allocated for cost recovery to those units and not approved at this time for Units 3 and 4. The Company should work with the Staff to identify these instances and subsequent costs that should be apportioned to Vogtle Units 1 and 2 and provide this information to the Commission.

4. Operator Staff Costs Incurred After the Initial Operation Dates of April 1, 2016, for Unit 3 and April 1, 2017, for Unit 4 Are Not Prudent and Should Be Denied

Any costs included in the \$4,923,000,000 that apply to operator salaries or expenses incurred for Unit 3 after April 1, 2016, and April 1, 2017, for Unit 4 should be denied. The 85 operator/trainees were originally hired with the objective of having them trained and certified to begin work as nuclear plant operators in April 2016. This has not happened and is unlikely to happen in the next five years.

Instead, the Company has drafted them into service “for augmented construction compliance oversight and start-up activities, in addition to continuing required operational readiness activities.” (Docket 29849, Thirteenth Semi-Annual Vogtle Construction Monitoring Report, p. 26) This operator busy work over the next several years is going to cost approximately \$200 to \$300 million according to Company testimony. (Docket 29849, Thirteenth Vogtle Construction Monitoring Review, Tr. 137) These excess unplanned costs should not be allocated to the cost of the Vogtle Project, but should be recovered by allocating these expenses to the Company’s general operation. It is unreasonable and clearly imprudent to keep 85 nuclear operators on the Vogtle Project payroll as they wait five years before they can actually do their job.

D. Conclusion

WHEREFORE, the Southern Alliance for Clean Energy requests that the Commission order the following:

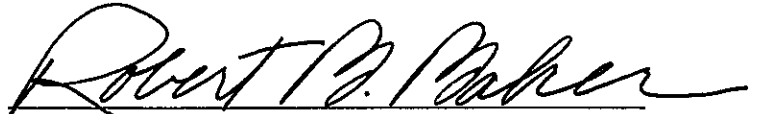
1. That Georgia Power Company identify the specific amount it is seeking the Commission to determine is prudent in this proceeding;
2. That it deny Georgia Power Company’s request that it “support a finding that all costs incurred to date on Plant Vogtle Units 3 and 4 . . . have been

prudently incurred pursuant to O.C.G.A. §46-3A-7 and are being spent in compliance with the certificate”;

3. That Georgia Power Company be directed to immediately submit a revised cost and schedule that is reasonable based on the current status of construction;
4. Find all costs that should be allocated to Vogtle Units 1 and 2 are imprudent;
5. Find all costs for any portion of Vogtle Units 3 and 4 that must be tested and verified as operational should not be included in any consideration of prudent costs until they are fully tested and certified as operational;
6. Find any costs caused or incurred by the excessive and persistent module and sub-module fabrication problems are imprudent;
7. Find any costs caused or incurred as a result of the Integrated Project Schedule not being completed in a timely manner pursuant to the EPC Agreement are imprudent, and;

8. Find all operator costs incurred after the initial operation dates of April 1, 2016, for Unit 3 and April 1, 2017, for Unit 4 are imprudent;

Respectfully submitted this 19th day of May, 2016.



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CERTIFICATE OF SERVICE

I hereby certify that the foregoing Comments of the Southern Alliance for Clean Energy in Docket No. 29849 was filed with the Public Service Commission's Executive Secretary by hand delivery. An electronic copy of same was served upon all parties listed below by electronic mail, unless otherwise indicated, as follows:

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This 19th day of May, 2016.



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