

BEFORE THE
GEORGIA PUBLIC SERVICE COMMISSION
STATE OF GEORGIA

FILED

AUG 08 2014

EXECUTIVE SECRETARY
G.P.S.C.

Docket No. 29849

In Re:]
]]
Review of Proposed Revisions and]
Verification of Expenditures Pursuant]
To Georgia Power Company's Certificate]
of Public Convenience and Necessity for]
Plant Vogtle Units 3 and 4, 9th and 10th]
Semi-annual Construction Monitoring]
Report.]

Brief of the Southern Alliance for Clean Energy

Summary of Argument

The construction of Vogtle Units 3 and 4 (the "Project") is over budget, behind schedule and faces more cost overruns that ultimately will be paid for by ratepayers. Residential and commercial ratepayers currently pay an additional 9.3% on their gross bill for the Nuclear Construction Cost Recovery ("NCCR") rider, and the Project's cost to ratepayers is projected to increase an additional 50% to 100%. (9th/10th Vogle Construction Monitoring ("VCM") Report, p. 7).

The anticipated cost savings from using a single site for the fabrication of the nuclear modules has been lost with the hiring of three new companies in Japan, Oregon and Florida. Serious problems with the nuclear module construction have plagued the Project from the beginning, as identified by the Construction Monitor in the VCM-2 proceeding, yet no

action by any party was taken until recently. Benign neglect of the module fabrication problems since 2010 calls into question whether minimal prudent oversight by the Owners occurred.

More efficient cooling technologies should be considered while there is an opportunity to incorporate these systems before major construction has begun. The indirect wet-dry cooling system and the zero liquid discharge treatment and recycling system would significantly minimize the environmental impact of the new reactors on the imperiled Savannah River and improve the plant's operational performance and reliability, especially during times of drought.

Regular semi-annual reviews of the Project are vital to provide the Commission and ratepayers important information that will aid in minimizing further construction delays and cost overruns. Regular semi-annual reviews are the most effective means of incenting the Project Owners to keep the Project on schedule.

I. The Project Is Now 21 Months Behind Schedule and the Construction Monitor Has Identified Additional Delays With the Shield Building Construction

Construction delays mean higher costs. No one can contest that fact. Georgia Power admits that the Project is 21 months behind schedule (9th/10th VCM Report, p. 4), and to compound this problem the

construction of the Shield Building is 317 days behind schedule. (Testimony of Roetger and Jacobs, p. 19)

The commercial operation dates for Units 3 and 4 have steadily been pushed back further and further from the original dates of April 1, 2016 and April 1, 2017. According to Staff Witness Philip Hayet, “. . .the average Total Project and Production Cost impact caused by a delay increases to approximately \$2.0 million per day.” (Testimony of P. Hayet, p. 21, l. 4-5) The 317- day delay in the construction of the Shield Building could thus amount to a \$634 million increase in the cost of the Project, and additional delays are possible further compounding the cost overrun problem.

Table 4 of Mr. Hayet’s pre-filed testimony indicated that a 57 month delay forecast would drive up Georgia Power’s share of the Project costs from the current certified cost of \$6.113 billion to \$8.8 billion (Id. at p. 20), and the total production cost impact of a 57 month delay to Georgia Power would be \$10.6 billion, an increase of approximately \$4.5 billion over the Company’s current certified cost. The Project costs for the other Owners, MEAG, Oglethorpe Power and Dalton Utilities, would also increase proportionately.

The Commission’s oversight of the Project is critical to minimizing construction delays and cost overruns. Regular semi-annual review of the Project is the most effective means of incenting the Company and all of the

Owners to diligently work to keep the Project on schedule. As the construction advances for Units 3 and 4 to the critical phases of the Project, more, not less oversight and monitoring is essential to keep cost overruns in check. Commission vigilance may be able to help reduce cost overruns but lack of regular oversight will only facilitate greater budget overruns.

A. Further Construction Delays Mean Higher Costs for Ratepayers And Additional Loss of Project Benefits

Construction delays not only drive up the costs of the Project but they also steadily erode the supposed benefits of the Project. Staff Witness Hayet pointed out that the, “Owners and Financing costs represent 45% of the Total Project Cost under the Company’s current COD [Commercial Operation Date] forecast, and would increase if additional Project delays occur.” (Testimony of P. Hayet, p. 17) If further delays of 36 months occur in addition to the current 21-month delay the percent of the Owners’ financing costs would increase from 45% to 55%. (Id. at 18, Table 3) Construction delays directly impact all financing costs, income tax charges and additional fuel costs incurred in replacing the Vogtle 3 and 4 energy output. (Id. at 19-20) According to Mr. Hayet the additional benefits have been “earned” by ratepayers who have assumed “significant specific risks in

constructing the Vogtle units” for the Project, and thus construction delays strip ratepayers of their earned benefits. (Id. at 28)

Additionally, it was Mr. Hayet’s opinion that the alleged benefits of the Project are inflated because the Company calculated the additional benefits in 2018, rather than 2016, present worth dollars as it had done with its other economic evaluations of Vogtle. (Id. at 24) In the 9th/10th Semi-annual VCM Report the Company acknowledged the calculation of debt cost savings “on a 2018 present value basis, . . .” (9th/10th VCM Report, p. 29) By using two different years the value of the economic evaluations would change by inflating the value of the Project benefits. (Tr. 478)(Testimony of P. Hayet, p. 24)

1. Ratepayers are currently paying an additional 9.3% on their bills for the Nuclear Construction Cost Recovery (“NCCR”) Rider and the Company Estimates That the Cost to Ratepayers Will Increase an Additional 50% to 100%

Georgia Power Company’s current construction monitoring report states that, “. . .the Facility’s total rate impact is projected to be about 6 to 8 percent,” and 4% are already in rates. (9th/10th VCM, p. 7) Georgia Power ratepayers pay an additional 9.3141% on their gross monthly bill for the

Nuclear Construction Cost Recovery rider¹. For an average residential ratepayer who uses 1,100 kilowatts per month this is a cost of \$7.98². If the Company projects that the rate impact of Vogtle Units 3 and 4 will increase by an additional 2% to 4% beyond the current 4% level already in rates, this means rates could increase an additional 50% to 100%. That would mean residential and commercial ratepayers would see further rate increases between 4.7% to 9.3% above the current 9.3% NCCR-4 rider amount. Based on current rates this would mean the average residential ratepayer who uses 1,100 kilowatts a month would pay an additional \$4.00 to \$8.00 on their monthly bills or a cumulative increase between \$12.00 and \$16.00. These amounts would increase proportionately based on a consumer's electric demand.

2. The Company is Collecting Its Return on Equity (ROE) in the NCCR Rider

The Company should not be collecting any return on equity on the pre-collected portion of the financing costs. (Tr. 472) The fact that the Commission allows the Company to collect all of its financing costs before one kilowatt of power is even generated from the new reactors is

¹ Docket 36989, Document 151501 (January 22, 2014), http://www.georgiapower.com/pricing/files/rate-and-schedules/common/10.10_NCCR-4.pdf.

² Georgia Public Service Commission bill calculator, <http://www.psc.state.ga.us/calc/electric/GPcalc.asp>.

exceptionally generous, but to also recover a return on equity is excessive, representing nothing but a huge financial windfall at the expense of ratepayers that is unjustified, unnecessary and unearned.

By allowing the Company to collect its return on equity (“ROE”) of 10.95% on prepaid financing costs ratepayers are paying the Company a bonus that increases the NCCR rider with no benefit to ratepayers. Pre-collection of financing costs that normally would be collected over the 40 to 60 year life of Units 3 and 4 dramatically reduces the Company’s risk exposure while front-end loading the recovery of financing charges on current ratepayers rather than allocating a proportionate share to all ratepayers over the life of the Units.

The Commission should consider an adjustment to any cost overruns by reducing any cost overruns greater than the current certified amount of \$6.113 billion less the amount collected through the NCCR allocated to the Company’s return on equity. A regulated utility’s ROE is provided to cover the cost of financing and to provide investors with an adequate incentive to offset the risk of investment. There is no risk to a utility which pre-collects its financing costs before the generation plant is operational and no ROE need be paid.

3. MEAG's \$1.8 Billion Loan Guarantee Has Not Been Approved for the Project

MEAG owns 22.7% of Units 3 and 4. If MEAG were not able to secure the taxpayer-backed Federal nuclear loan guarantee for \$1.8 billion, its participation in the Project would be severely jeopardized and could have direct ramifications for Georgia Power and the remaining Project Owners.

While Georgia Power's counsel was technically correct in arguing that the Commission did not have a direct responsibility for the financial condition of MEAG, the Commission should not be shortsighted and imprudent by ignoring relevant information that could have a major impact on the Project. If MEAG does not ultimately receive the Federal loan guarantee it could have significant consequences for the entire Project, such as driving up MEAG's financing costs or forcing MEAG to reduce its ownership share.

In a worst case scenario if MEAG did not get the necessary financing for its share of the Project either a new partner would have to be found to assume MEAG's 22.7% interest in the Project or the remaining Owners would have to increase their individual share of the Project. Common sense and a general concern for the entire Project should lead the Commission to, at a minimum, monitor major ancillary issues such as the status of MEAG's application for a Federal loan guarantee.

II. The Consortium Has Hired Three New Subcontractors to Assist With the Construction of the Nuclear Modules

The Consortium has recently hired Oregon Iron Works, SMCI and the Toshiba subsidiary IHI to assist with the construction of the sub-modules and modules. (Tr. p. 327) Construction of nuclear modules has been stopped at the Lake Charles, Louisiana site, and moved to the other locations. (Tr. 332) This means that the anticipated cost savings and construction “efficiencies” of having all the modules built in one location are lost, and higher construction and transportation costs will be incurred for the Project. Rather than shipping the sub-modules and modules from the Lake Charles, Louisiana facility to the construction site now the modules must be shipped from Japan, Oregon and Florida. Additionally, this means that three new fabrication crews will have to be trained and monitored which will add more costs to the Project. (See 9th/10th VCM Report, p. 26)

Hiring three new subcontractors is a desperate response that highlights the irreparable problems that both Shaw and now CB&I had with nuclear module fabrication. Even in a best-case scenario it is going to take time for the three new subcontractors to train, test and prepare for nuclear module construction, which means more delays.

A. Persistent Problems with the Nuclear Module Fabrication Have Plagued the Project from the Beginning and Problems Have Arisen with the Construction of the Shield Building

The Construction Monitor has repeatedly alerted the Commission to the serious problems with the module construction since the second semi-annual VCM. In his VCM-3 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 sub-modules at the Shaw Modular Solutions (“SMS”) facility as required to meet the Project schedule; . . .” (Testimony of W. Jacobs, pp. 5-6)

The Construction Monitor’s criticism has been consistent throughout the construction review process. In December 2012 he stated, “[t]he Consortium’s 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.” (Testimony of W. Jacobs, 7th VCM, p. 16)

As the initial construction phase for the Shield Buildings begins the Consortium does not have the advantage of learning from the Chinese AP1000 projects which are two years ahead of the Vogtle Project (Tr. 336)

because the Chinese AP1000 reactors are not using the Vogtle Shield Building design. (Tr. 337) The Vogtle Shield Building is a first-of-its-kind design that has never been built anywhere. Because of the size and complexity of this critical reactor safety component the Project will be more vulnerable to delays as the new technology is fabricated and incorporated into the nuclear island construction. According to the Public Service Commission Staff the Shield Building construction is already 317 days behind schedule, and it is reasonable to assume further delays will occur. (Testimony of Roetger and Jacobs, p. 19)

Not until March or April of 2014 did the Consortium finally take some decisive action by bringing in three new subcontractors to complete the nuclear sub-module and module construction. What were the Owners doing when this known and obvious problem was further delaying the entire Project and driving costs higher? While the Consortium was responsible for construction activities, the prolonged and significant problems with the nuclear module construction exacerbated the delay and cost issues for the entire Project. Letting a known problem fester until it becomes a crisis is irresponsible and imprudent behavior on the part of the Owners. If similar problems arise with the construction of the Shield Building the Consortium and Owners need to take immediate corrective action.

III. The Company Should Consider Utilizing Alternate Cooling Technology Which Is Available and Will Reduce All the Units' Vulnerability to Reduced Generation During Drought Conditions

Available low-impact water conservation technology should be incorporated into the design of the cooling system for Units 3 and 4 to ensure the reliable operation of all the Vogtle reactors during any future periods of drought. According to the Construction Monitor the critical construction of the major water intake structures has not begun. (Tr. 348) While the design modification for the Unit 3 and 4 cooling systems may add additional expense this is an investment that will pay major benefits in the future to ensure the reliable operation of all the Vogtle reactors during future droughts and minimize the daily effect of the facility on the Savannah River which is critically imperiled.

The June 25, 2014, letter from the Savannah Riverkeeper highlighted that, “[a]t full operation the four combined Vogtle reactors could withdraw a maximum of 201 mgd [million gallons per day] from the river. The enormous water withdrawal requirement for Plant Vogtle makes all the reactors more vulnerable to shut down or reduced operation during periods of drought.” (See Exhibit 1) Inclusion of the indirect wet-dry cooling and a zero liquid discharge treatment and recycling system would affordably improve the operational reliability of the reactors, especially during times

of drought in which nuclear power plants have proven to be vulnerable, and significantly minimize the environmental impact of the new reactors. (Id.)

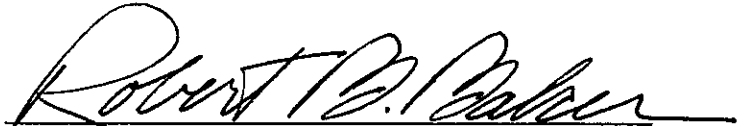
IV. Conclusion

While three new subcontractors have been hired by the Consortium to complete the nuclear module construction, there is no guarantee that all the problems will be resolved or that new, additional problems will not occur. More construction problems with the nuclear modules or other aspects of the Project, such as the Shield Buildings, mean more delays and greater cost overruns. Regular semi-annual monitoring of the Vogtle construction project is necessary and critical to the successful completion of these nuclear reactors so that the Commission may take appropriate action should any further construction problems or delays occur.

The Company should be directed to immediately evaluate the feasibility of incorporating the low-impact water conservation technology into the Project's cooling systems prior to the start of related major construction. The indirect wet-dry cooling system and the zero liquid discharge treatment and recycling system would significantly minimize the environmental impact of the new reactors on the Savannah River and improve the plant's operational performance and reliability, especially during times of drought.

The NCCR rider should be adjusted to remove any collection of the Company's return on equity for financing as unnecessary and to help offset the current Project cost overruns.

Respectfully submitted this 8th day of August, 2014.

A handwritten signature in black ink, reading "Robert B. Baker", written over a horizontal line.

Robert B. Baker
Attorney for the Southern Alliance for
Clean Energy

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing **Brief of the Southern Alliance for Clean Energy** was filed in Docket 29849 with the Georgia 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, and addressed as follows:

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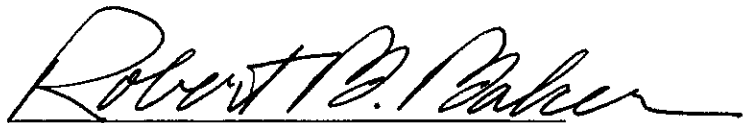
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This 8th day of August, 2014.



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Exhibit 1

Savannah Riverkeeper letter of
June 25, 2014
To the Georgia Public Service Commission
(Hearing exhibit to July 1, 2014, PSC
transcript in Docket 29849)

Honorable Charles "Chuck" Eaton
Chairman
Georgia Public Service Commission
244 Washington Street, S.W.
Atlanta, Georgia 30334

June 25, 2014

RE: Georgia Power Company's Ninth and Tenth Semi-Annual
Vogtle Construction Monitoring Review: Docket 29849

Dear Chairman Eaton and Commissioners:

On behalf of the Savannah Riverkeeper I would like to offer the following public comments regarding the cumulative impact the construction of Plant Vogtle Units 3 and 4 will have upon the Savannah River and the use of river water for cooling at the new nuclear reactors. The Savannah Riverkeeper serves as the primary guardian of the Savannah River striving to respect, protect, and improve the entire river basin through education, advocacy, and action. The Savannah Riverkeeper is a 501 (c)(3) non-profit organization funded by individuals and foundations that share our commitment to creating a clean and healthy river that sustains life and is cherished by its people.

The already imperiled Savannah River will be used to cool Plant Vogtle Units 3 and 4 which will place an additional demand on the river of up to 74 million gallons per day ("mgd"). Vogtle Units 1 and 2 are currently permitted to withdraw a maximum of 127 mgd from the Savannah River. At full operation the four combined Vogtle reactors could withdraw a maximum of 201 mgd from the river. The enormous water withdrawal requirement for Plant Vogtle makes all the reactors more vulnerable to shut down or reduced operation during periods of drought.

The current cooling technology incorporated into the design of Vogtle Units 3 and 4 is inefficient, outdated and threatens the future operation of the facility. Conversion of the wet-only cooling systems to indirect wet-dry cooling, and addition of a zero liquid discharge treatment and recycling system will eliminate discharges to the Savannah River and reduce cooling system water withdrawals thereby reducing the environmental impact of the new nuclear units and improving the operation reliability of all the reactors for decades.

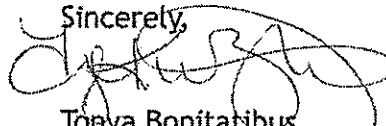
Attached for your review is a report prepared by Mr. Bill Powers, P.E. entitled "Vogtle Units 3 and 4: Feasible and Cost-Effective Water Conservation Measures" for technical comments we submitted to the Georgia Environmental Protection Division this May as they review the draft surface water withdrawal permit request from Southern Nuclear. In his report Mr. Powers discusses the application of the Indirect Wet-Dry Cooling technology in the construction of Vogtle Units 3 and 4. Use of the Indirect Wet-Dry Cooling System will greatly reduce the amount of water necessary to effectively cool the new reactors and, coupled with the zero liquid discharge system

Mr. Powers' proposes, significantly reduce their environmental impact on the Savannah River.

Reducing the amount of water necessary to cool Units 3 and 4 will mean the facility will be far less vulnerable to any future drought conditions. Several years ago Plant Farley, a nuclear plant in Alabama also operated by Southern Nuclear, had to reduce its generation level and bring in expensive additional portable cooling units because of the dangerously reduced water levels in the Chattahoochee River. By modifying the cooling design of Vogtle Units 3 and 4 now the long term operation of all the reactors will be improved and the environmental impact will be significantly reduced.

Thank you very much for your consideration of the Savannah Riverkeeper's public comments in this case. Please include our comments and attachments in the public record of this proceeding. A copy of this letter and all attachments has been provided to Mr. McAlister on disc in PDF and Word format for filing.

Sincerely,



Tonya Bonitatibus
Executive Director
Savannah Riverkeeper

TB/

Attachment

CC: Commissioner Timothy Echols
Commissioner H. Douglas Everett
Commissioner Lauren McDonald
Commissioner Stan Wise
Jeffrey Stair, Esq.
Kevin Greene, Esq.
Mr. Reece McAlister, Executive Secretary