

**BEFORE THE GEORGIA PUBLIC SERVICE COMMISSION
STATE OF GEORGIA**

In Re:)	
Review of Proposed Revisions and)	
Verification of Expenditures Pursuant to)	Docket No. 29849
Georgia Power Company's Certificate of)	
Public Convenience and Necessity for)	
Plant Vogtle Units 3 and 4,)	
12th Semi-annual Construction)	
Monitoring Report)	

NUCLEAR WATCH SOUTH BRIEF

Nuclear Watch South respectfully submits this brief to the Georgia Public Service Commission (PSC *or* Commission) in the 12th Vogtle Construction Monitoring Review in accordance with standard practice as described in Procedural and Scheduling Order (Amended).

SUMMARY

In this post-hearing brief, Nuclear Watch South submits its findings that:

- 1) The Georgia Public Service Commission has legal authority to modify Georgia Power's certificate to cancel or defer Vogtle 3 & 4 construction;
- 2) According to Georgia Power's annual report data, it has experienced chronically above average excess capacity amidst a 10-year sales slump and therefore does not need to build additional capacity. The PSC should revoke Georgia Power Company's Certificate of Public Convenience and Necessity for Plant Vogtle 3 & 4 and cancel construction;
- 3) Georgia Power's cost to cancel Vogtle construction is unknown. The cost to cancel construction should be compiled and published so it may be compared to the cost to complete the unneeded Vogtle 3 & 4 reactors;
- 4) Currently used 60-year economic benefit analysis of Vogtle 3 & 4 is without basis in regulatory or operating history and should be supplemented with 40-year economic benefit analysis;
- 5) Vogtle costs & benefits should be compared to distributed solar and wind generation instead of combined cycle natural gas.

I. VOGTLE CONSTRUCTION MONITORING REVIEW PROCESS INCLUDES ONGOING REEXAMINATION OF CERTIFICATE BY PSC

Georgia Legal Code governing the VCM includes O.C.G.A. § 46-3A-6 which states:

Upon application of a utility or *upon its own motion*, the commission may *reexamine any certificate granted under this chapter* to determine whether new forecasts of future requirements require the modification of the construction, purchase, sale, or expenditure for a certificated capacity resource. If upon such reexamination the commission finds that the certificated capacity resource is *no longer needed* or that any additional certificated capacity resource is needed to assure a reliable supply of electric power and energy for the utility's Georgia retail customers, the commission may *modify or revoke* the certificate. [O.C.G.A. § 46-3A-6, excerpt, emphasis added]

It is not only allowed by the code governing the Commission's Vogtle review process, but is important, in light of the volatile and controversial history of nuclear energy, to review the benefits of pursuing construction of risky nuclear power reactors. The new U.S. Environmental Protection Agency (EPA) Clean Power Plan law has placed nuclear on par with solar and wind generation further supporting renewed scrutiny of the necessity of Vogtle 3 & 4.

As Vogtle 3 & 4 construction apparently proceed down a path trod by Georgia before, the dismal experience of Vogtle 1 & 2 delays and legendary 800% cost overruns, it has become timely and critical for the Commission to continuously review the need for Georgia Power to add electrical generating capacity in today's rapidly changing energy markets. As we have shown, and show below, using basic data from Georgia Power's annual reports, Vogtle 3 & 4 are not needed.

Therefore, we demand that the Commission revoke the Vogtle reactor expansion project as charged by O.C.G.A. § 46-3A-6.

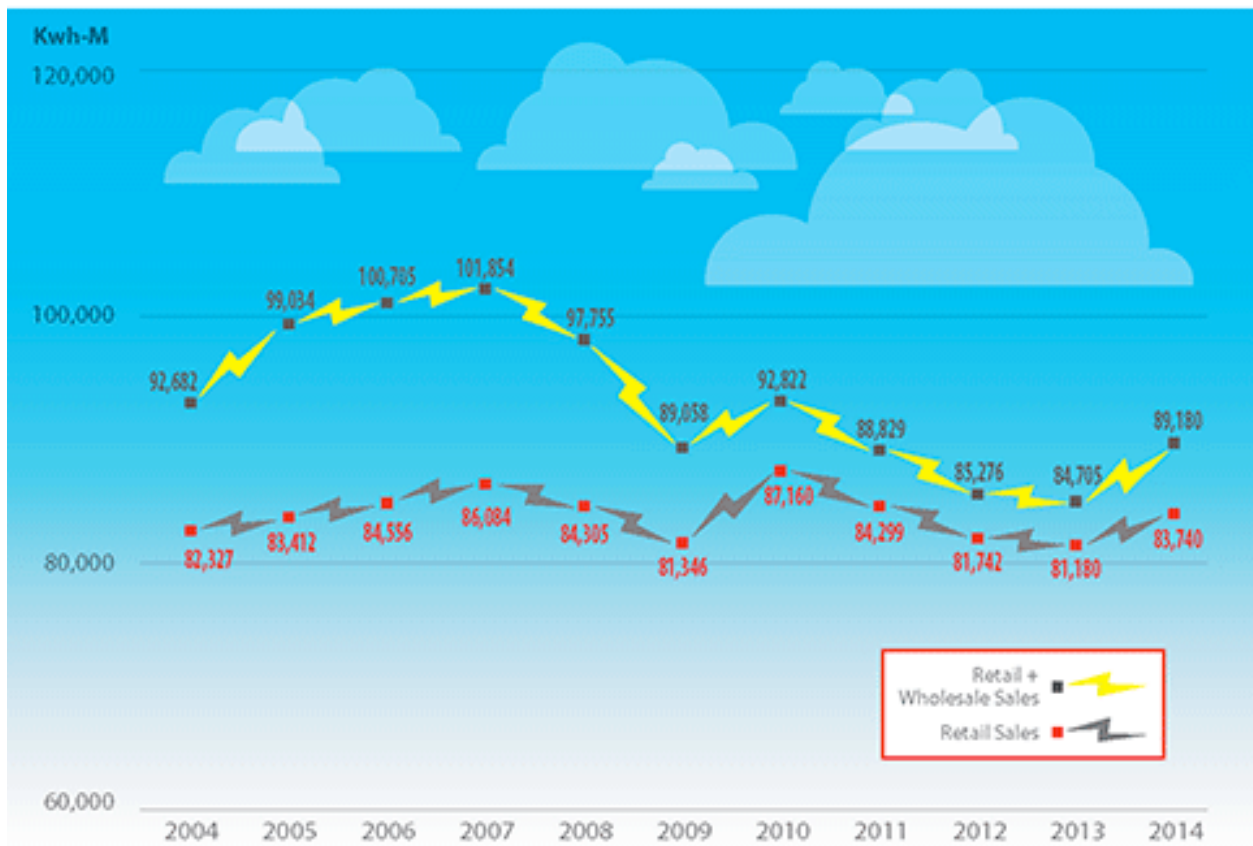
II. GEORGIA POWER'S ANNUAL REPORT DATA 2004-2014 SHOWS VOGTLE 3 & 4 ARE NOT NEEDED

In direct testimony filed June 10, 2015, and in the June 23, 2015 public hearing, Nuclear Watch South presented analysis of Georgia Power's annual report data filed with the Securities and

Exchange Commission for the years 2004-2014. The compiled data produces a clear picture of documented, historic trends which provide useful contrast and comparison to the forecasts typically used by Georgia Power and the Commission to establish the need for additional certificated capacity. Exhibits 2, 2A, 2B.

Georgia Power Company’s annual report data shows that the company is overbuilt in a shrinking, changing market and the power from Vogtle 3&4 is not needed as predicted. The charts record Georgia Power's actual performance for the years 2004-2014.

Georgia Power Sales Volume 2004-2014



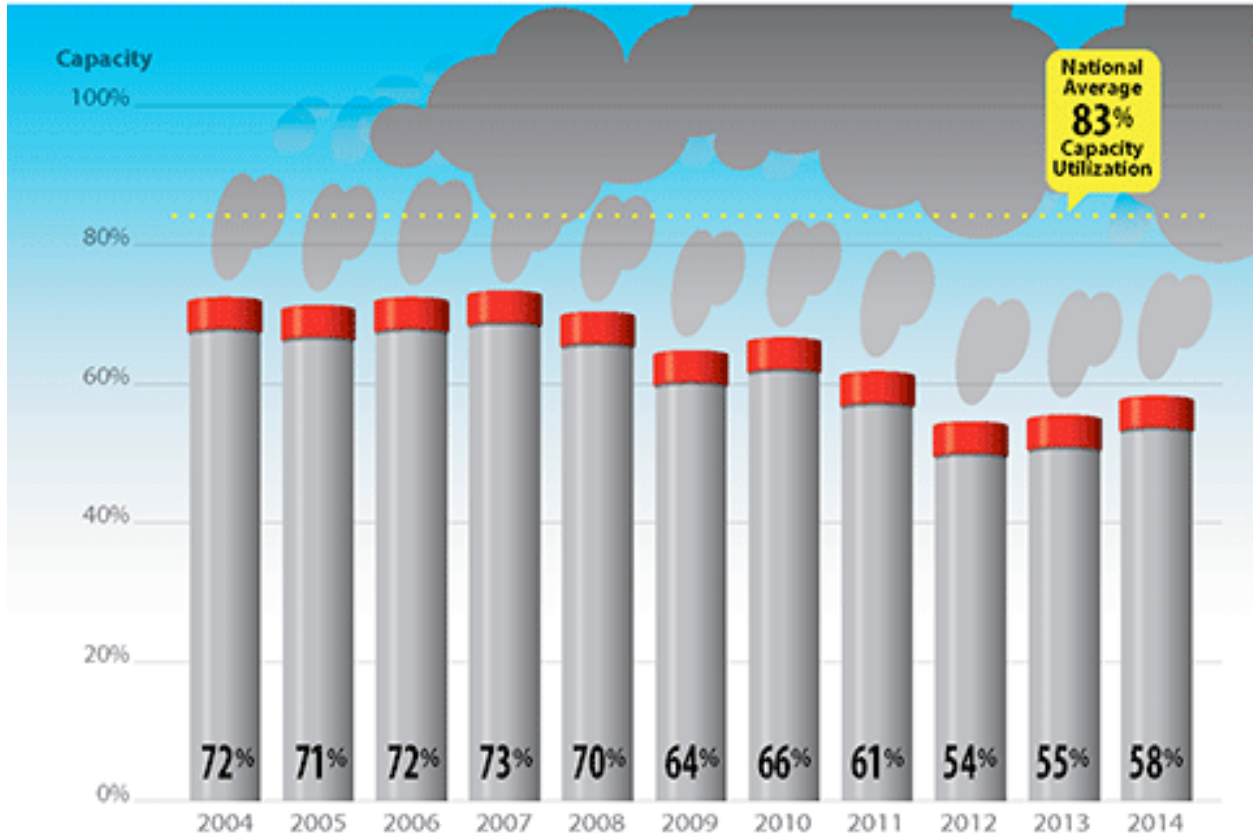
Source: Georgia Power Company annual reports 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014

Chart: © 2015 Nuclear Watch South, www.nuclearwatchsouth.org

The key points of the chart, exhibit 2, and further illustrated by the charts included herein, are:
 Line 2 (Georgia Power Sales Volume 2004-2014) which shows volume sales in Kwh are flat for

the 10 -year period 2004-2014 (Exhibit 2A) and Line 5 (Georgia Power Capacity Utilization 2004-2014), which shows capacity utilization has declined from 72% to 58% for the period (Exhibit 2B).

Georgia Power Capacity Utilization 2004-2014



Source: Georgia Power Company annual reports 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014

Chart: © 2015 Nuclear Watch South, www.nuclearwatchsouth.org

In the 2009 Vogtle Certification proceeding, Georgia Power forecast the need for an additional 8,000 MW of capacity from 2008-2018 for a 4.1% annual growth in capacity. That, plus promise of Construction Work In Progress (CWIP aka Nuclear Construction Cost Recovery NCCR) taxes collected from ratepayers and multi-billion dollar cheap loans from the U.S. Treasury in the form of loan guarantees, were used to justify building two additional reactors at Vogtle.

As line 2 of Nuclear Watch South Exhibit 2 (Georgia Power Sales Volume 2004-2014) shows, Georgia Power's 4.1% forecast in annual growth did not materialize. In fact, the past 10 years have seen only a 0.2% growth in Georgia Power's retail market and -0.4% reduction in its wholesale market. In volume sales terms, 2014's net sales of approximately 173 thousand million kilowatt hours is down almost 5% from 2004's total volume of 175 thousand million kilowatt hours.

In line 5 of the chart (Georgia Power Capacity Utilization 2004-2014), we see that Georgia Power's capacity utilization factor declined from 72% to 58% in the period 2004-2014. Capacity utilization declined from 70% to 58% in the period 2008-2014.

The assessment that Georgia Power has excess capacity is bolstered by testimony in Georgia Power's 2013 Integrated Resource Plan proceeding. Expert witness Jeffrey Pollock testified for Georgia Industrial Group and Georgia Association of Manufacturers in an October 18, 2013, filing that for 2012 Georgia Power's average reserve margin for the non-summer months was 67% and the average reserve margin for the summer months was 29%, which is well in excess of the industry average of 17% reserve margin. (JP Exhibit-10, Docket #36989)

In the 2013 IRP hearing, Commissioner Stan Wise argued vigorously that Georgia Power had excess capacity, distinguishing himself with a series of published articles and comments. In the Atlanta Business Chronicle Commissioner Wise wrote, "Georgia Power already has 25 to 30 percent more capacity than it needs." ("Solar power: Beware unnecessary cost to Georgians" by Stan Wise, Atlanta Business Chronicle, July 5, 2013)

The data all stack up to show clearly that additional capacity from Vogtle is not needed.

III. GEORGIA POWER'S COST TO CANCEL CONSTRUCTION OF VOGTLE 3 & 4 MUST BE MADE KNOWN

In cross-examination June 23, 2015, Economist Philip Hayet for the PSC, when asked "Hypothetically if Vogtle construction were canceled, do you know what it would cost?"

answered, "No." (Tr. 449)

Through much testimony it has been established that roughly \$6 billion has been expended upon the Vogtle 3 & 4 project estimated currently to come in at \$18 billion. With \$12 billion left to be spent to construct a power resource which, as shown above, isn't needed, it is likely to cost much less to stop construction than to complete unneeded Vogtle 3 & 4.

The PSC should order that the total cost to close down the Vogtle 3 & 4 construction project be supplied by Georgia Power so the Commissioners, and the ratepayers of Georgia, can make an informed comparison.

Georgia Power is protected in its investment not only by the generosity of the public which is covering the cost of Vogtle 3 & 4 through paying rates and federal taxes that are then invested by the company, but by Georgia Code 46-3A-7(d):

(d) If the commission disapproves of all or part of the proposed revisions and the utility cancels construction of some or all of the facility as a result of the disapproval, *the utility may recover through any rate-making vehicle over a reasonable period of time*, absent fraud, concealment, failure to disclose a material fact, imprudence, or criminal misconduct, *the amount of its actual investment*, net of actual salvage value, in the partially completed portion of the facility along with the cost of carrying the unamortized balance of that investment to the extent such investment is verified as made pursuant to the certificate. [emphasis added]

Since Georgia Power is protected thoroughly from investment risk on Vogtle 3 & 4, it also has no risk in disclosing what it would cost to cancel the investment. It would be beneficial to Georgia ratepayers to quit investing in an unnecessary project as soon as possible.

The mission of the Georgia PSC to ensure "safe, reliable, and reasonably priced ... electricity" compels the PSC to cancel the unnecessary project before more ratepayer money is risked. The potential savings to Georgia ratepayers will be billions of dollars compared to the \$12 billion

price tag to complete construction of the unneeded nuclear reactors. Georgia Power should be required to submit the cost to cancel construction of Vogtle 3 & 4 in the 13th VCM.

IV. 60-YEAR ECONOMIC BENEFIT ANALYSIS OF VOGTLE 3&4 IS BASELESS, 40-YEAR ECONOMIC BENEFIT ANALYSIS MUST BE PERFORMED

Georgia Power should produce 40-year economic benefit analysis to supplement its hypothetical 60-year analysis. Vogtle is licensed by the U.S. Nuclear Regulatory Commission (NRC) for only 40 years. Vogtle's licenses will date from the days they enter into commercial service which is currently projected to be 2020 at the earliest. Under NRC regulations, Georgia Power cannot apply for a license extension for Vogtle 3 & 4 until it has operated for 20 years, which will be 2040 at the earliest.

The oldest operating reactor in the U.S. has operated only 45 years. Indeed, Vermont Yankee and Kewaunee in Wisconsin were both issued license renewals but were instead shut by their owners for being uneconomic. So, the assumption that Vogtle 3 & 4 will be operational for 60 years is hypothetical and unsupported by fact. Economic benefit analysis based on Vogtle's actual NRC license and upon a 40-year operating life is needed as companion analysis to Georgia Power's current 60-year analysis.

The reasonableness of reviewing a 40-year economic benefit analysis for new nuclear reactors is supported by Dr. Bill Jacobs testimony as an expert witness for the State of Florida on the proposed Turkey Point 6 & 7 reactors. Dr. Jacobs direct testimony is attached as NWS-Exhibit #3.

On page 12-13 of his testimony, Dr. Jacobs compares the feasibility conclusions of 40-year analysis and 60-year analysis of the Florida Power & Light project. Although the project looks feasible in several scenarios of the 60-year analysis, Dr. Jacobs testifies: "considering the 40-year operating life case shown in FPL Brown's testimony, an increase of 7.91% in Turkey Points Units 6 and 7 capital costs results in no cases with feasibility." [Jacobs direct

testimony, p. 12, footnote omitted]

Georgia Power's Vogtle 3 & 4 project have already experienced a 17% capital cost increase.¹ The 60-year study being used by Georgia Power is likely to have cast the project's feasibility in an untrue light. It defies logic that analysis being used on a similar project in Florida would not apply in Georgia. Georgians should benefit from the fruits of experience being gained by our construction monitor, Dr. Jacobs.

As Georgia Power's capital costs for Vogtle 3 & 4 continue to mount it is crucial to have accurate feasibility studies by which to assess the health of the project. The PSC should demand Georgia Power to submit a 40-year economic benefit analysis with the 13th VCM.

V. VOGTLE 3 & 4 SHOULD BE COMPARED TO DISTRIBUTED SOLAR AND WIND GENERATION INSTEAD OF A COMBINED-CYCLE GAS PLANT

Due to changing energy markets and in light of the new EPA Clean Power Plan, comparisons of Vogtle expansion to a combined-cycle natural gas facility are outdated. The cost to complete Vogtle 3&4 should be compared to the cost of meeting updated Georgia Power energy forecasts with distributed solar and wind generation.

Under the new Clean Power Plan, the pressure to complete Vogtle 3 & 4 is removed as it is no longer assumed in establishing Georgia's BSER (Best System of Emission Reduction). The change places nuclear on the same menu with solar and wind for achieving emissions reduction. As the cost of Vogtle 3 & 4 has escalated, and the lack of new starts for reactors leave Georgians stranded within a shriveling industry, EPA adds this recommendation:

Investments in new nuclear capacity are very large capital-intensive investments that require substantial lead times. By comparison, investments in new RE (renewable energy) generating capacity are individually smaller and require shorter lead times. Also, important recent trends

¹ $\$7.5 \text{ billion} / 45.7 = \$164,113,700 \times 100 = \$16.411 \text{ billion} - \$14.0 \text{ billion} = \$2.411 \text{ billion} / \$14.0 \text{ billion} = 0.1722 = 17\% \text{ increase}$

evidenced in RE development, such as rapidly growing investment and rapidly decreasing costs, are not as clearly evidenced in nuclear generation. We view these factors as distinguishing the under construction nuclear units from RE generating capacity, indicating that the new nuclear capacity is likely of higher cost and therefore less appropriate for inclusion in the BSER. [Clean Power Plan, p. 344]

Georgia PSC is driving the expansion of both solar and wind in Georgia Power's portfolio and as a result Georgia has been recognized as the state with the highest growth in green jobs. ("The state creating the most green jobs is ... Georgia?" by Anne Fisher, FORTUNE, July 7, 2015)

Now, amidst falling prices for renewables and revolutionary strides in energy storage coupled with grid computerization and decentralization, utility business models are being radically transformed. Solar and wind are cheaper and faster to deploy than nuclear. The PSC should be helping Georgia Power to further recalibrate its business model to meet current business conditions.

The PSC should require Georgia Power to submit comparison of Vogtle 3 & 4 completion to deploying decentralized solar and wind generation under an updated, realistic forecast in the 13th VCM.

CONCLUSION

The Commission should use the power vested in it by Georgia law and the electorate to revoke Georgia Power's certification to construct Vogtle 3 & 4 as additional Vogtle capacity is not needed and it would be cheaper to cancel Vogtle than to continue spending billions of dollars to complete its unneeded capacity.

At a minimum, in the 13th VCM, Georgia Power should furnish the cost to cancel Vogtle 3 & 4 construction as well as a 40-year economic analysis to supplement the current unrealistic 60-year analysis so that the Commission and ratepaying public can make an informed choice about future

energy expenditures.

Additionally, the outdated cost comparisons between Vogtle 3&4 and a combined cycle gas plant must be supplemented in the 13th VCM by comparing the cost of Vogtle 3 & 4 with the cost to add decentralized solar and wind generation in conformance with market demand.

Respectfully submitted,

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