Georgia Power

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241 Ralph McGill Boulevard, NE
Atlanta, GA 30308-3374

February 15, 2024

Ms. Sallie Tanner
Executive Secretary
Georgia Public Service Commission
244 Washington Street, SW
Atlanta, GA 30334-5701

RE: Georgia Power Company's Thirtieth Semi-annual Construction Monitoring Report for Plant Vogtle Units 3 and 4; Docket No. 29849

Dear Ms. Tanner:

Enclosed for filing is Georgia Power Company's Thirtieth Semi-annual Construction Monitoring Report for Plant Vogtle Units 3 and 4 pursuant to O.C.G.A. § 46-3A-7(b), Georgia Public Service Commission ("Commission") Rule 515-3-4-.07(2)(b), and the Commission's Final Order in Docket No. 27800.

There is no trade secret information included in this Thirtieth Semi-annual Report.

Should you have any questions, please call me at 404-506-3044.

Sincerely,

Kelley M. Balkcom

Kelley M. Balkcom
Director, Regulatory Affairs
mmcclosk@southernco.com

Vogtle
UNITS 3 & 4

Thirtieth Semi-annual Vogtle Construction Monitoring Report

February 2024 · Docket No. 29849

VOGTLE UNIT Units 3 & 4

The First Two Nuclear Units Built in the United States in over 30 Years

Georgia Power

Vogtle Units 3 and 4
Thirtieth Semi-annual
Construction Monitoring Report

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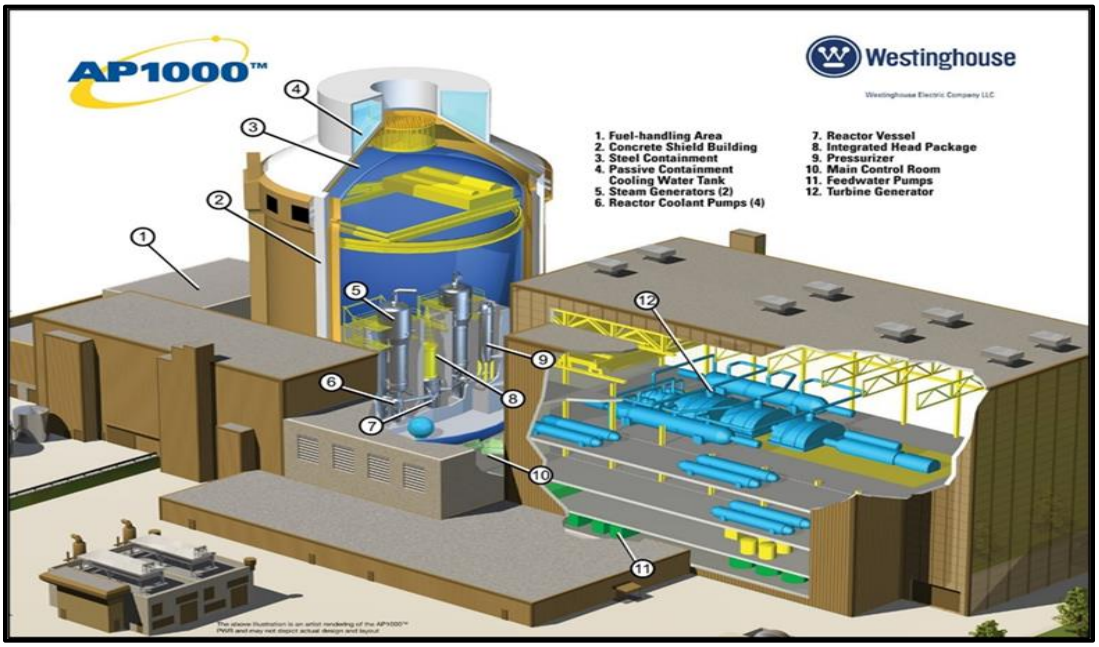
Unit 4 Nuclear and Turbine Islands

As of January 2024



EXECUTIVE SUMMARY

- **Georgia Power Company ("Georgia Power" or the "Company") and Southern Nuclear Operating Company ("SNC"), as agent for Georgia Power, are committed to safety, quality, and compliance.**

  Site leadership continues to cultivate and enhance a culture that promotes safety first. Through December of 2023, the site continued to experience a low number of recordable incidents. SNC remains committed to enhancing the safety-first culture and has transitioned the site to the SNC safety program as direct construction is now complete.

  During the reporting period of July 1, 2023, through December 31, 2023 (the "Reporting Period"), SNC did not receive any Notice of Violation and remains in favorable standing with the NRC's Reactor Oversight Process (the "ROP"). Through the ROP program, the NRC communicates plant performance and assessments to the public.

- **Unit 3 continues to operate successfully.**

  On July 31, 2023, Vogtle Unit 3 successfully completed all required start-up and power ascension testing and was declared to have achieved Commercial Operation. Unit 3 operated uninterrupted for 180 days at 100% thermal output. On January 27, 2024, Unit 3 entered a planned maintenance outage to address items identified during the initial operations period that should help maintain the long-term performance of the Unit and curtail the quantity of manual actions required by Operations during plant operation. On February 2, 2024, Unit 3 synced back to the grid and has operated at 100% thermal output continually since that time.

- **Unit 4 completed start-up and pre-operational testing necessary to start power ascension.**

  Vogtle Unit 4 has successfully completed all required start-up and pre-operational testing necessary to start power ascension testing. The Site Operations team successfully achieved initial criticality on February 14, 2024. Over the next several weeks, Unit 4 is projected to be synchronized to the grid and will begin power ascension testing, which will put the unit through testing at the 25%, 50%, 75%, 90% and 100% reactor power levels to confirm that Unit 4 performs according to design.

- **Georgia Power incurred $171 million of capital expenditures during the Reporting Period.**

Table 1 – 30th VCM Expenditures

Dollars in Millions

Original EPC & EPC Scope Change	$ -
Interim Payments & Liens	1
Site Construction Management	110
Owners Costs	39
Ad Valorem Tax	22
Transmission Interconnection	0
Test Fuel Offsets	(1)
Total 30th VCM Expenditures	$ 171

- **Georgia Power presents $171 million in capital expenditures for review only and does not request the Commission take any action.**

  In the Commission's Order Adopting Stipulation regarding the Company's Application to Adjust Rates to Include Reasonable and Prudent Plant Vogtle Units 3 and 4 Costs ("Vogtle Prudence Order"), the Company agreed not to request recovery for any costs exceeding $7.562 billion. Thus, the Company presents the $171 million incurred during the Reporting Period for Commission review only.

- **The Company's share of the total project capital cost forecast remains approximately $10.2 billion.**

  The Company and SNC continue to monitor and evaluate costs associated with completing the Project. The total project capital cost forecast remains approximately $10.2 billion. As of December 31, 2023, based on completion of construction work and the assessment of start-up and pre-operational testing remaining, SNC has an estimated $36 million for construction contingency remaining in the estimate to complete. This contingency is projected to be allocated to address any further Unit 4 schedule extensions or remediation of other issues discovered during the start-up process.

  Cumulative capital expenditures through the Reporting Period are $10.0 billion after accounting for receipt of the Toshiba Parent Guaranty. The estimated remaining capital spend to complete the Project is approximately $189 million, which includes Georgia Power's share of Project contingency.

- **The projected in-service date for Unit 4 is during the second quarter 2024.**

  On February 1, 2024, the Company announced that following the replacement of one out of four reactor coolant pumps ("RCP"), during the start-up and pre-operational testing for Unit 4, Southern Nuclear identified, and has remediated, vibrations associated with certain piping within the cooling system. The vibrations and methods of remediation were similar in nature to those experienced during pre-operational testing for Unit 3 and other AP1000 nuclear units. Considering the remaining pre-operational testing, Georgia Power now projects that the Unit 4 in-service date will occur during the second quarter 2024. The Unit 4 schedule extension is not expected to affect the total project capital cost forecast.

- **Vogtle Units 3 and 4 peak rate impact for customers is expected to be approximately ten percent.**

  Consistent with the Vogtle Prudence Order, the total rate impact to Georgia Power retail customers from the construction and initial operation of Vogtle Units 3 and 4 is expected to be approximately 10%, of which approximately 5% is already in retail rates. Accordingly, the month after Unit 4 achieves Commercial Operation, average retail rates will be adjusted by approximately 5%. Notably, this estimated impact to average retail rates does not reflect the inherent fuel savings and the value of decreased fuel pricing volatility resulting from the Project. When fuel savings are taken into account, the total expected rate impact to retail customers from Vogtle Units 3 and 4 is approximately 8%.

RESPONSES TO STIPULATED QUESTIONS

1. The reasons for any additional change in the estimated costs and schedules of the Units since the process began.

The total Project capital cost forecast remains approximately $10.2 billion. The details of the current total Project capital cost forecast are provided in Table 1.1, which also reflects the capital investment through December 31, 2023, actual-to-forecast variances, and total financing costs during construction. Total financing costs include amounts collected and forecasted to be collected pursuant to the NCCR tariff and amounts accrued and forecasted to be accrued through AFUDC.

Unit 3 achieved Commercial Operation on July 31, 2023, and Unit 4's in-service date is now projected to occur during the second quarter 2024. The projected schedule for Unit 4 significantly depends on the progression of start-up and pre-operational testing, which may be impacted by equipment or other operational failures. As Unit 4 progresses further through testing, ongoing and potential future challenges also include the management of contractors and vendors; the availability of materials and parts, and/or related cost escalation; the availability of supervisory and technical support resources; and the timeframe and duration of pre-operational testing.

New challenges may continue to arise as Unit 4 moves further into testing and start-up, which may result in required engineering changes or remediation related to plant systems, structures, or components. These challenges may result in further schedule delays and/or cost increases.

Table 1.1

Vogtle 3 & 4 Project
Georgia Power Company Cost - Subject to Commission Verification and Approval
Project To Date
Through Period Ending December 31, 2023

(Millions of $) Construction & Capital Cost	VCM 29 ($ millions)	Total Current Forecast ($ millions)	Variance ($ millions)	Actual to Date ($ millions)	Budget to Date ($ millions)	Variance ($ millions)
Original EPC[1]	$ 3,198	$ 3,198	$ -	$ 3,198	$ 3,198	$ 0
Interim Payments & Liens	411	411	-	410	410	(1)
Site Construction Management						
Engineering Contractor	665	668	3	658	657	1
Procurement	1,548	1,564	16	1,548	1,549	(1)
Contract Construction	3,213	3,166	(46)	3,160	3,184	(24)
Construction Support & Project Management	968	978	10	901	937	(36)
Total Site Construction Management	**6,393**	**6,375**	**(18)**	**6,267**	**6,327**	**(60)**
Owners Cost	1,233	1,232	(1)	1,208	1,228	(20)
Ad Valorem	336	336	-	319	323	(4)
Transmission Interconnection	62	63	1	62	62	(0)
Test Fuel Offsets	(4)	(4)	-	(2)	(2)	(0)
	1,627	1,626	(1)	1,587	1,611	(24)
Total Construction & Capital Cost	**11,629**	**11,611**	**(18)**	**11,462**	**11,546**	**(84)**
Toshiba Parent Guarantee Payment, net of customer refunds	(1,492)	(1,492)	-	(1,492)	(1,492)	-
Unallocated Contingency Not Included Above	17	36	18	-	-	-
Construction Monitor	33	33	-	28	30	(2)
Total Construction & Capital Cost, including unallocated contingency and Construction Monitor Costs, net of Parent Guarantee [3]	10,188	**$ 10,188**	**$ 0**	**$ 9,998**	**$ 10,084**	**$ (86)**
Amounts Absorbed by GPC [3]		$ (2,626)		(2,626)	(2,626)	-
Approved Prudency Stipulation [2]		**7,562**		**7,372**	**7,459**	**(86)**
Project Schedule Financing						
Return on CWIP in Rate Base[4]		2,983		2,971	2,971	1
AFUDC - Accrued on CWIP Above Original Certified Cost		439		403	403	(1)
AFUDC - Accrued through Dec 2010 and Related Return		109		109	109	-
Total Project Schedule Financing		**$ 3,532**		**$ 3,483**	**$ 3,482**	**$ 1**
Total Capital Cost and Financing		**$ 13,719**		**$ 13,482**	**$ 13,566**	**$ (85)**

Footnotes:

1. Includes Original EPC contract payment milestones and EPC Scope Change.
2. $7.562 billion is the Total Construction & Capital Cost approved by Georgia Public Service Commission (Order dated December 19, 2023).
3. Above excludes approximately $567 million of costs associated with the cost-sharing and tender provisions of the joint ownership agreement that Georgia Power will not seek recovery for from retail customers.
4. NCCR will only be collected on the certified capital cost of $4.418 billion per the January 3, 2017 Order Adopting Stipulation and VCM 17 Order.

Note: Details may not add to totals due to rounding.

2. **The status of the Company's loan guarantee application at the DOE and to the extent that the application is granted, then the Company shall also report on the impact it has or would have on the final expected in-service cost of the Units.**

Table 2 – DOE Loan Guarantee		
Available	Received	Remaining
$5.13 billion	$5.13 billion	$0

Georgia Power has borrowed all $5.13 billion related to Vogtle Units 3 and 4 costs through the DOE Loan Guarantee Agreement and a multi-advance credit facility among Georgia Power, the DOE, and the Federal Financing Bank.

The DOE loan guarantee does not have a material impact on the in-service cost of Vogtle Units 3 and 4, but it does provide benefits to customers through access to lower credit spreads during construction and operation. Georgia Power customers are estimated to save approximately $513 million, which has already been secured through draws against the credit facility.

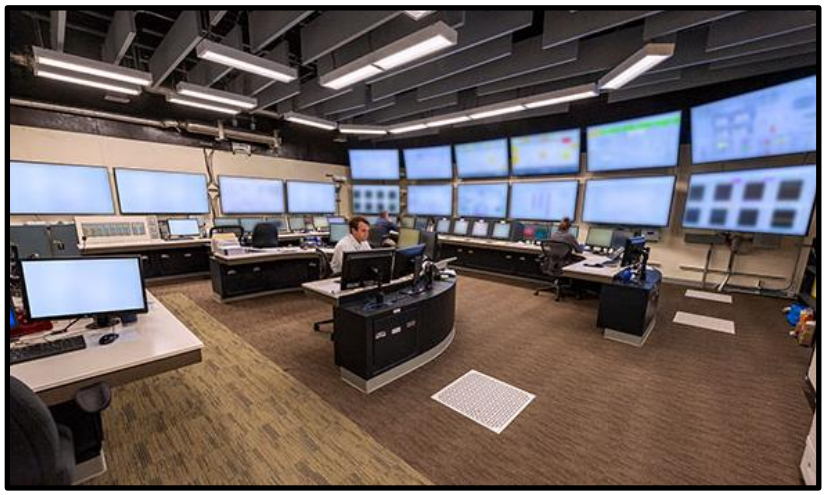
3. The status of Quality and Compliance, Procurement, Engineering, Construction and Operational Readiness.

TOTAL PROJECT PERCENT COMPLETE

As of January 31, 2024, the total Project is approximately 99.9% complete. With direct construction on both Units complete and Unit 3 operating, the only remaining scopes of work are limited subcontractor construction and completing the Initial Test Program ("ITP") and start-up activities for Unit 4. These remaining scopes of work are each approximately 99% complete as of January 2024.

QUALITY AND COMPLIANCE

During the Reporting Period, Georgia Power provided oversight of the Project while SNC directed and provided guidance to contractors and actively addressed issues and concerns as the final direct construction activities were completed. SNC also continued quality oversight of the ITP organization and Site Operations to help achieve and maintain compliance with laws, regulations, and Project licensing documents. SNC Quality Assurance ("QA") teams monitored the safety and quality of work being conducted through audits and field surveillances.



Main Control Room

Unit 3 Quality Control ("QC") is managed by the SNC fleet QC organization. Transition of Unit 4 Quality Control to the SNC fleet QC organization occurred in January 2024, which allows the Maintenance and Operations teams to leverage the processes and procedures utilized by the SNC fleet.

ENGINEERING

During the Reporting Period, the overall Engineering organization continued to support the final construction activities, as well as ITP and start-up progress. The start-up Engineering organization focused on processes, programs, and the incorporation of lessons learned from Unit 3 to the start-up testing on Unit 4. The ITP Design Engineering team successfully supported Fuel Load and continues to support ongoing start-up testing on Unit 4.

PROJECT PERFORMANCE

During the Reporting Period, Unit 4 completed Fuel Load and has continued to progress with the Plant start-up testing activities which will include the testing performed at various MODEs and initial criticality. In the coming weeks, Unit 4 will begin to progress through power ascension testing up to 100% at various output levels. Unit 4's in-service date is projected to occur during the second quarter 2024.

Project Milestones

Table 3.2 shows the remaining major milestones for Unit 4, along with the actual (designated with the (A)) or estimated dates in the current Risk Adjusted Schedules.

	Table 3.2 – Remaining Project Milestones	
	Milestone	**Q2 2024 Risk Adjusted Schedule Dates**
Unit 4	Start Power Ascension Testing	February 2024 (A)
	Initial Criticality	February 2024 (A)
	Initial Sync to Grid	February 2024
	100% Rated Thermal Power	March 2024
	Commercial Operation	April - June 2024

PROJECT RISK

A robust process remains in place to evaluate areas of risk commensurate with their significance, potential impact, and likelihood of occurrence. Risks continue to be actively managed, and mitigation plans are developed and administered to decrease the probability and scope of such impacts.

The Project risk register documents threats and opportunities that are routinely evaluated until the risk event is realized or retired, as well as mitigation plans that have been developed and executed to reduce the potential impacts of identified risks. The following section discusses one of the remaining Project risks as well as strategies the Project team is undertaking to mitigate impacts of the risk.

- *The risk the Project experiences a significant unanticipated challenge during the Start-up phase that requires modification.*

The identification and resolution of challenges, and the incorporation of lessons learned impacting Unit 3 Start-up, decreases the likelihood of experiencing the same issues; however, it does not completely eliminate the risk of other challenges during Unit 4 Start-up.

During the Reporting Period, Unit 4 experienced an unanticipated challenge with one out of four of the RCPs, which required replacement of one of the pumps. The Project team had captured lessons learned from China, where an RCP had to be replaced, and utilized those lessons learned to reduce the impact of the RCP replacement. Additionally, an RCP had been procured by the Project as a major equipment spare. The availability of a spare pump significantly decreased the impact to the Project from having to replace an RCP. Replacement of the RCP was completed during the Reporting Period and the replacement RCP is currently operational.

Unit 4 replacement Reactor Coolant Pump

Also in the Reporting Period, following the replacement of one of four RCPs, during the start-up and pre-operational testing for Unit 4, Southern Nuclear identified, and has remediated, vibrations associated with certain piping within the cooling system. The vibrations and methods of remediation were similar in nature to those experienced during pre-operational testing for Unit 3 and other AP1000 nuclear units.

PROJECT CONTINGENCY

As of December 31, 2023, based on completion of construction work and the assessment of start-up and pre-operational testing remaining, SNC has an estimated $36 million for construction contingency remaining in the estimate to complete. This contingency is projected to be allocated to address any further Unit 4 schedule extensions or remediation of other issues discovered during the start-up process.

UNIT UPDATES

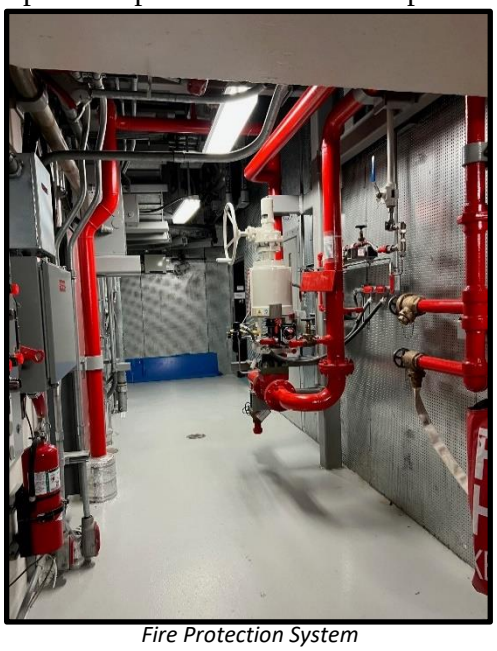
Unit 3

Since declaring Commercial Operations Unit 3 operated continuously for 180 days prior to a brief planned maintenance outage that was successfully completed early in the first quarter 2024 and is expected to be followed by the first refueling outage in the fourth quarter 2024.

Unit 4

During the Reporting Period, and since the completion of Fuel Load on August 19, 2023, Unit 4 has continued to progress with Start-up testing. On October 6, 2023, during the start-up and pre-operational testing for Unit 4, a motor fault was identified in one of four RCPs. The replacement of the RCP took approximately 85 days, which was mitigated by applying lessons learned from China and the Project's foresight to procure a spare RCP.

Upon completion of the RCP replacement and resolution of the piping vibration identified during start-up and pre-operational testing, Unit 4 continued through the remaining pre-operational testing and recently achieved initial criticality. Unit 4 is now projected to be placed in service during the second quarter 2024.

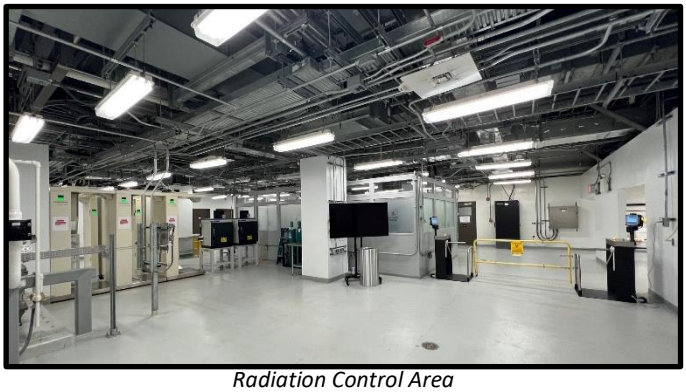


Fire Protection System

The final Construction work package was completed on August 14, 2023, and the Constructor demobilized from the Site. Southern Nuclear retained responsibility for a few of the remaining subcontractors all of which completed their scopes during the Reporting Period.

The Start-up and ITP teams continue to focus on each of the evolutions required to complete Start-up testing, which will demonstrate the integrated operation of the primary coolant system and steam supply system at design temperature and pressure with fuel inside the reactor. Operators will utilize the general operating procedures to achieve power ascension through multiple steps, ultimately raising power to 100%.

On February 14, 2024,Vogtle Unit 4 achieved initial criticality; this occurs when the nuclear chain reaction in the reactor was both initiated and became self-sustaining. Next, the Project team will synchronize the Unit 4 generator to the power grid and generate electricity for the first time. The Site Operations team will then complete testing on Unit 4 at 25%, 50%, 75%, 90% and 100% reactor power levels. It is projected that in March 2024, the Project team will complete a Planned Maintenance Outage, which is one of the last steps required to place Unit 4 in service. Unit 4 is projected to become a commercially operating unit during the second quarter 2024, at which time it is expected to operate as a safe, clean, reliable, and affordable energy source for the state of Georgia for the next 60 to 80 years.



Radiation Control Area

Vogtle 3&4 - January 4, 2024

Georgia Power

Glossary of Abbreviations	
103(g)	10 C.F.R Part 52.103(g)
DOE	Department of Energy
HFT	Hot Functional Testing
I&C	Instrumentation & Controls
ICN	ITAAC Closure Notifications
ITAAC	Inspection, Test, Analysis, and Acceptance Criteria
ITP	Initial Test Program
NRC	Nuclear Regulatory Commission
ROP	Reactor Oversight Process
SNC	Southern Nuclear Company
VCM	Vogtle Construction Monitoring