
Steven J. Hewitson

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April 13, 2022

Mr. Reece McAlister
Executive Secretary
Georgia Public Service Commission
244 Washington Street, S.W.
Atlanta, Georgia 30334

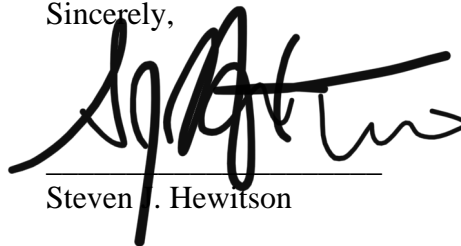
RE: Review of Expenditures Pursuant to Georgia Power Company's
Certificate of Public Convenience and Necessity for Plant Vogtle Units 3
and 4, Twenty-sixth Semi-annual Construction Monitoring Report;
Docket No. 29849

Dear Mr. McAlister:

Enclosed for filing in support of Georgia Power Company's Twenty-sixth Semi-Annual Vogtle Construction Monitoring Report, please find (1) the Direct Testimony of the Panel of David L. McKinney and Jeremiah C. Haswell, and (2) the Direct Testimony of the Panel of Stephen E. Kuczynski and John B. Williams.

Please call me at 404-885-3475 if you have any questions regarding this filing.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Hewitson", written over a horizontal line.

Steven J. Hewitson

Enclosures

1 **DIRECT TESTIMONY OF**
2 **DAVID L. MCKINNEY AND JEREMIAH C. HASWELL**
3 **IN SUPPORT OF GEORGIA POWER COMPANY'S**
4 **TWENTY-SIXTH SEMI-ANNUAL VOGTLE CONSTRUCTION MONITORING**
5 **REPORT**

6 **DOCKET NO. 29849**

7 **I. INTRODUCTION**

8 **Q. PLEASE STATE YOUR NAMES, TITLES, AND BUSINESS ADDRESSES.**

9 **A.** My name is David L. McKinney. I am the Senior Vice President of Nuclear Development
10 at Georgia Power Company ("Georgia Power" or the "Company"). My business address is
11 241 Ralph McGill Boulevard, N.E., Atlanta, Georgia 30308.

12 My name is Jeremiah C. Haswell. I am the Project Oversight Director for Georgia Power.
13 My business address is 241 Ralph McGill Boulevard, N.E., Atlanta, Georgia 30308.

14 **Q. MR. MCKINNEY, PLEASE SUMMARIZE YOUR EDUCATION AND**
15 **PROFESSIONAL EXPERIENCE.**

16 **A.** I graduated from Auburn University with a Bachelor of Science degree in Civil
17 Engineering. I joined Southern Company Services as a co-op in the Hydro Engineering
18 department and moved from there into a Project Engineer role in Southern Company
19 Generation. I then served as a Civil Engineering Manager in the Technical Services
20 Department before taking an assignment as Project Manager of Combined Cycle
21 Construction. After that, I served as General Manager of New Generation Construction. I
22 have served in various leadership roles on Plant Vogtle Units 3 and 4 (the "Project") since
23 2009, with my current role being the Senior Vice President of Nuclear Development for
24 Georgia Power. In this role, I have responsibility for Commercial and Cost Management,
25 Project oversight, regulatory relationships with the Georgia Public Service Commission

1 (the “Commission”) and their staff (“Commission Staff”) as well as the U.S. Department
2 of Energy (“DOE”).

3 **Q. MR. MCKINNEY, HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE**
4 **COMMISSION?**

5 **A.** Yes. I testified in this docket regarding the Sixth, Seventh, Eighth, Ninth/Tenth, Eleventh,
6 Twelfth, Thirteenth, Fourteenth, Fifteenth, Sixteenth, Seventeenth, Eighteenth, Nineteenth,
7 Twentieth/Twenty-first, Twenty-second, Twenty-third, Twenty-fourth, and Twenty-fifth
8 Semi-annual Vogtle Construction Monitoring (“VCM”) Reports.

9 **Q. MR. HASWELL, PLEASE SUMMARIZE YOUR EDUCATION AND**
10 **PROFESSIONAL EXPERIENCE.**

11 **A.** I graduated from the University of Alabama at Birmingham with a Bachelor of Science
12 degree in Mechanical Engineering and a Master of Science degree in Civil Engineering
13 (Construction Management focus). I completed a Master of Business Administration at
14 Augusta State University and am a licensed Professional Engineer. I joined Southern
15 Company as an Engineer in Southern Company Services Research and Technology
16 Management focusing on new technology deployment in the existing operating fleet. I held
17 multiple Team Leader roles in the areas of Maintenance, Engineering, and Compliance at
18 Alabama Power Company’s Plant Gorgas. In 2012, I moved to Plant Vogtle Units 3 and 4
19 in the Construction Compliance organization and later the role of Construction Compliance
20 Supervisor for the Turbine Island and Balance of Plant. I am currently the Project Oversight
21 Director with responsibility for regulatory filings for the Project, compliance with Georgia
22 Power’s loan guarantee with the DOE, Project oversight, risk management, and lead
23 interface with the Commission Staff, Construction Monitor, and the other Project Owners
24 (Oglethorpe Power Corporation, the Municipal Electric Authority of Georgia, and Dalton
25 Utilities, through the Board of Water, Light and Sinking Fund Commissioners of the City
26 of Dalton) (collectively, the “Owners”).

1 **Q. MR. HASWELL, HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE**
2 **COMMISSION?**

3 **A.** Yes. I testified in this docket regarding the Thirteenth, Fourteenth, Fifteenth, Seventeenth,
4 Eighteenth, Nineteenth, Twentieth/Twenty-first, Twenty-second, Twenty-third, Twenty-
5 fourth, and Twenty-fifth Semi-annual VCM Reports.

6 **Q. HOW IS YOUR TESTIMONY ORGANIZED?**

7 **A.** Our testimony is submitted on behalf of Georgia Power and a panel consisting of Stephen
8 Kuczynski and John Williams will set forth the testimony of Southern Nuclear Operating
9 Company (“Southern Nuclear” or “SNC”), the Project manager at the site. Georgia Power
10 continues to exercise its oversight role on behalf of itself and as agent for the other Owners.
11 Southern Nuclear continues to have primary responsibility for cost and schedule
12 performance as well as safety and quality in all aspects of the Project.

13 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

14 **A.** The purpose of our testimony is to support the Twenty-sixth Semi-annual Vogtle
15 Construction Monitoring Report (“VCM 26 Report”), which presents \$584 million in
16 capital expenditures invested between July 1, 2021, and December 31, 2021 (the
17 “Reporting Period”) for Commission review.

18 Our testimony will demonstrate Georgia Power’s commitment to bringing this 60-year,
19 carbon- and emission-free generation technology online. We will also provide an update
20 on current Project status as well as the current Project cost and schedule.

21 **Q. WHAT PERIOD DOES THE TWENTY-SIXTH VCM REPORT COVER?**

22 **A.** The VCM 26 Report, incorporated herein by reference, covers the period between July 1,
23 2021, and December 31, 2021.

II. PROJECT COST

Q. WHAT IS THE CURRENT STATUS OF THE PROJECT'S ESTIMATED COST?

A. The Company's projected share of the total Project cost forecast is \$10 billion, the same as reported in the VCM 26 Report. Georgia Power invested \$584 million of capital expenditures during the Reporting Period, bringing Georgia Power's cumulative capital investment in the Project through the close of the Reporting Period to approximately \$8.4 billion, after accounting for Georgia Power's portion of the Toshiba Parent Guaranty (less the costs associated with securing the Parent Guaranty payment and the customer refunds totaling approximately \$188 million). Georgia Power's investment in the Project has been prudently incurred and complies with the Certificate.

Q. PLEASE ELABORATE ON GEORGIA POWER'S ACTUAL EXPENDITURES DURING THE REPORTING PERIOD.

A. The following table identifies the breakdown of Georgia Power's \$584 million of actual expenditures during the Reporting Period.

Construction & Capital Cost	VCM 26 (in millions)
Original EPC	\$ -
Interim Payments & Liens	(0)
Site Construction Management	
Engineering Contractor	55
Procurement	96
Contract Construction	269
Construction Support & Project Management	88
Total Site Construction Management	508
Owners Costs	53
Ad Valorem	23
Transmission Interconnection	0
Test Fuel Offsets	-
Total Construction & Capital Cost	\$ 584

1 **Q. WHAT IS THE COMPANY REQUESTING THE COMMISSION TO DO WITH**
2 **THE \$584 MILLION?**

3 **A.** The Company is presenting the \$584 million to the Commission for review only and is not
4 requesting verification and approval of that amount at this time.

5 **Q. WILL THE COMPANY REQUEST VERIFICATION AND APPROVAL OF THIS**
6 **AMOUNT AT A FUTURE DATE?**

7 **A.** As stated in the stipulation adopted by the Commission in its VCM 24 Order, the Company
8 may request verification and approval of these costs at a later date, but not prior to the
9 prudency review contemplated by the VCM 17 Order. The decision has not yet been made
10 and will not be made until that time.

11 **III. PROJECT STATUS**

12 **Q. PLEASE PROVIDE AN UPDATE ON PROJECT STATUS.**

13 **A.** The Project has continued progress towards the receipt of the Nuclear Regulatory
14 Commission's ("NRC") 103(g) letter and subsequent Fuel Load on Unit 3. In support of
15 the historic 103(g) letter, and as of March 31, 2022, the Project team has submitted 319
16 Unit 3 Inspections, Tests, Analyses and Acceptance Criteria ("ITAAC") Closure
17 Notifications ("ICNs") to the NRC for review, with 79 Unit 3 ICNs remaining to be
18 submitted. Since the VCM 26 Report was filed, the Project has achieved numerous
19 accomplishments, including successful completion of the testing associated with the
20 Passive Cooling System on the outside of the Containment Vessel, and the placement of
21 all 157 fuel assemblies into the Spent Fuel Pool ("SFP"). In addition to the fuel assemblies,
22 the two neutron sources were inserted into two of the fuel assemblies stored in the SFP and
23 will be utilized to start the reaction once Fuel Load is completed and the necessary Plant
24 conditions are achieved. The Project team continues to make progress with the closure of
25 documentation as demonstrated by progress on Inspection Record ("IR") completions.
26 Continued completion of the documentation supports closure of work packages required
27 for 103(g) and Fuel Load.

1 Unit 4 continues to make progress with the transition from construction to critical testing
2 evolutions as recently demonstrated with the successful completion of the Structural
3 Integrity Test (“SIT”) and the Integrated Leak Rate Test (“ILRT”) as well as continued
4 progress with the Open Vessel Testing (“OVT”) evolution. The SIT and ILRT testing
5 evolutions are examples of the quality work completed on Unit 4 to ensure it is constructed
6 per design requirements. Through March 2022, direct construction for Unit 4 was 93%
7 complete.

8 While the Project continues to make progress, many challenges remain to completing the
9 work to go and achieving the remaining major milestones. As discussed in the VCM 26
10 Report, the target in-service dates for both Units were adjusted during this Reporting
11 Period, with Unit 3 projected during the fourth quarter of 2022 or the first quarter of 2023
12 and Unit 4 projected during the third quarter or the fourth quarter of 2023. This shift in
13 schedule is primarily due to the need for additional time to address continued construction
14 challenges and to allow for the comprehensive testing necessary to ensure the unwavering
15 commitment to quality and safety standards is achieved.

16 **Q. PLEASE PROVIDE AN UPDATE ON THE PROJECT’S DOCUMENTATION**
17 **CLOSURE EFFORTS.**

18 **A.** As discussed in the VCM 26 Report, the closure of IRs and associated work packages posed
19 a significant challenge to the Project’s completion and contributed to the revision of the
20 projected in-service dates for both Units. Significant focus on documentation closure has
21 resulted in positive gains in documentation closure to support the near-term Unit 3 103(g)
22 finding and Fuel Load milestones, and the Project continues its focus on this effort.

23 **Q. WHAT IS THE CURRENT STATUS OF THE NRC SPECIAL INSPECTION?**

24 **A.** As discussed in the VCM 26 Report, the NRC released its report in November 2021
25 following the special inspection of the circumstances that led to construction remediation
26 work on electrical cable and associated raceway systems. The NRC recently completed its
27 planned follow-up inspection at Unit 3, which evaluated the corrective actions and

1 remediation efforts and identified no findings during the follow-up inspection. While the
2 associated NRC inspection report is not anticipated until May 2022, the NRC has closed
3 the two white findings identified by the NRC in November 2021 and returned Vogtle Unit 3
4 to the baseline inspection program, moving the NRC inspection process back to Column 1
5 (Licensee Response) of the Construction Reactor Oversight Program.

6 **Q. PLEASE PROVIDE AN UPDATE ON THE UNIT 3 SFP REPAIRS.**

7 **A.** Repairs to the SFP and associated testing were completed in 2021, which facilitated the
8 loading of all 157 fuel assemblies in the SFP earlier this year. The fuel assemblies will
9 remain in the SFP until they are loaded in the Reactor Vessel during the Fuel Loading
10 process, which is planned for later this year.

11 **Q. PLEASE PROVIDE AN UPDATE ON UNIT 4 PERFORMANCE.**

12 **A.** Progress on Unit 4 has slowed due to the temporary diversion of additional craft and
13 support resources from Unit 4 to support construction efforts on Unit 3. In response to the
14 resource realignment, the Project team is continuing its efforts to increase craft labor and
15 field non-manual support resources, particularly electricians, to help provide for continued
16 progress and to increase production.

17 As you can see in the table below, electrical progress on Unit 4 is maintaining the
18 forecasted pace assumed for the September 2023 Risk Adjusted Schedule. However, the
19 forecast assumes an increase in production later in the year. To achieve the September 2023
20 Risk Adjusted Schedule, production will need to increase, and the number of craft and field
21 non-manual support resources will need to increase as well. Further decreases in production
22 could pressure the Project's abilities to meet a December 2023 in-service date.

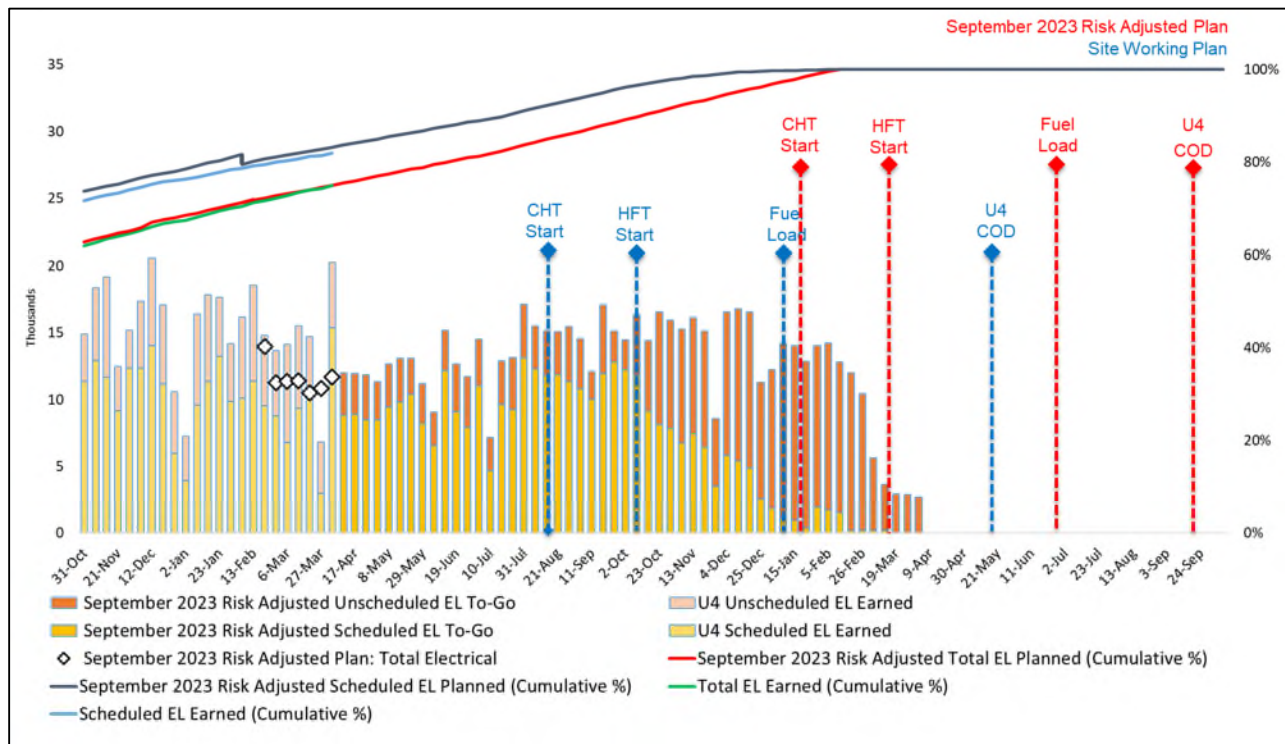


Figure A - Unit 4 Electrical Percent Complete

Q. HAS THE LOWER UNIT 4 PRODUCTION HAD AN EFFECT ON SCHEDULE?

A. As discussed in the VCM 26 Report, the target or projected in-service date for Unit 4 was extended to encompass a range of third or fourth quarter 2023.

Progress continues for the necessary work to support the continuation of OVT, while construction production has supported the successful completion of several testing evolutions including SIT, ILRT and Lube Oil Flush. With construction production constraints primarily in the electrical disciplines, the workforce has been augmented by utilizing specialty contractors for specific work evolutions, such as safety-related terminations. Additionally, the incorporation of lessons learned from Unit 3 continues to improve first-time quality with changes to work sequencing expected to reduce the amount of congestion from Subcontractors as electrical resources increase.

1 **IV. COVID-19 IMPACT AND RESPONSE**

2 **Q. WHAT IS THE ESTIMATED SCHEDULE AND COST IMPACT OF COVID-19**
3 **FOR THE PROJECT?**

4 **A.** The Project team continues to monitor the number of COVID-19 cases on-site, which has
5 dramatically decreased following the wave witnessed at the beginning of 2022.

6 Throughout the pandemic, the Company and Southern Nuclear have proactively managed
7 the impacts on site and remain dedicated to protecting the safety and health of workers on
8 site at Vogtle Units 3 and 4 as well as the surrounding community. It is still estimated that
9 productivity impacts of the COVID-19 pandemic consumed three to four months of the
10 schedule margin previously embedded in the site work plans for both units, with an
11 estimated cost of \$160-200 million for Georgia Power's portion of these costs.

12 **V. CONCLUSION**

13 **Q. WHAT IS GEORGIA POWER REQUESTING AT THIS TIME?**

14 **A.** The Company is not requesting that the Commission take any action at this time regarding
15 the \$584 million in actual expenditures invested in the construction of the Project during
16 the Reporting Period of July 1, 2021, through December 31, 2021.

17 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

18 **A.** Yes.

1 **DIRECT TESTIMONY OF**
2 **STEPHEN E. KUCZYNSKI AND JOHN B. WILLIAMS**
3 **IN SUPPORT OF GEORGIA POWER COMPANY’S**
4 **TWENTY-SIXTH SEMI-ANNUAL VOGTLE CONSTRUCTION MONITORING**
5 **REPORT**
6 **DOCKET NO. 29849**

7 **I. INTRODUCTION**

8 **Q. PLEASE STATE YOUR NAMES, TITLES, AND BUSINESS ADDRESSES.**

9 **A.** My name is Stephen E. Kuczynski. I am the Chairman, President, and Chief Executive
10 Officer of Southern Nuclear Operating Company (“Southern Nuclear” or “SNC”). My
11 business address is 7825 River Road, Waynesboro, Georgia 30830.

12 My name is John B. Williams. I am the Vice President of Business Operations for Plant
13 Vogtle Units 3 and 4 (the “Project”). My business address is 7825 River Road,
14 Waynesboro, Georgia 30830.

15 **Q. MR. KUCZYNSKI, PLEASE SUMMARIZE YOUR EDUCATION AND**
16 **PROFESSIONAL EXPERIENCE.**

17 **A.** I graduated from the Milwaukee School of Engineering with a Bachelor of Science degree
18 in electrical engineering technology. I am also a graduate of the Harvard Advanced
19 Management Program and have earned a senior reactor operator license from the U.S.
20 Nuclear Regulatory Commission (“NRC”). I was elected to my current position as
21 Chairman, President, and Chief Executive Officer of Southern Nuclear in July 2011. I am
22 responsible for construction of the Plant Vogtle Units 3 and 4 (the “Project”) and other
23 nuclear development initiatives, as well as all operations at Southern Company’s six
24 operating nuclear reactors at plants Farley, Hatch, and Vogtle. I have more than 37 years
25 of experience in the nuclear industry, joining Southern Nuclear from Exelon Nuclear,

1 where I held the role of Senior Vice President of Engineering and Technical Services,
2 responsible for fleet engineering, capital projects, outage services, and nuclear fuel. Prior
3 to that role, I was the Senior Vice President of Exelon Nuclear's Midwest Operations. In
4 that role, I was responsible for oversight of Exelon Nuclear's six Illinois operating facilities
5 and 11 reactors.

6 I previously served as chair of the Nuclear Energy Institute's ("NEI") Advanced Reactor
7 Working Group and the New Plant Advisory Committee. I am a former member of the
8 Terrestrial Power Industry Advisory Board and the board of advisors of X-Energy, a
9 nuclear reactor and fuel design engineering services company. I previously served on the
10 board of directors and the executive committee of NEI, the Institute of Nuclear Power
11 Operations National Nuclear Accrediting Board, as well as the advisory boards for the Oak
12 Ridge National Laboratory Nuclear Science and Engineering Directorate, and the U.S.
13 Department of Energy's ("DOE") Gateway for Accelerated Innovation in Nuclear. I
14 previously served as a member of the DOE's Office of Nuclear Energy, Nuclear Energy
15 Advisory Committee. I have received the Special Achievement Award from the U.S.
16 Nuclear Infrastructure Council and the Presidential Citation from the American Nuclear
17 Society. I testified before Congress about advanced nuclear technology innovation on May
18 17, 2016.

19 **Q. MR. KUCZYNSKI, HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE**
20 **GEORGIA PUBLIC SERVICE COMMISSION ("COMMISSION")?**

21 **A.** Yes. I testified in this docket regarding the Eighteenth, Nineteenth, Twentieth/Twenty-first,
22 Twenty-second, Twenty-third, Twenty-fourth, and Twenty-fifth Semi-annual Reports.

23 **Q. MR. WILLIAMS, PLEASE SUMMARIZE YOUR EDUCATION AND**
24 **PROFESSIONAL EXPERIENCE.**

25 **A.** I graduated from the Georgia Institute of Technology with a bachelor's degree in nuclear
26 and radiological engineering. I am currently the Vice President of Business Operations for

1 Southern Nuclear Plant Vogtle 3&4. I joined Southern Nuclear in 2005 and have more than
2 20 years of engineering and nuclear fuel experience and have served in several leadership
3 positions throughout the Southern Nuclear organization, including Plant Hatch
4 Engineering Director, Nuclear Fuels and Analysis Director, and Interim Engineering Vice
5 President.

6 I have represented Southern Nuclear on the Department of Energy Industry Advisory
7 Boards for the Advance Fuels Campaign and the Nuclear Energy Advance Modeling and
8 Simulation (“NEAMS”) program. I have also served as the utility lead for the Nuclear
9 Energy Institutes’ Accident Tolerant Fuel Working Group’s (“ATFWG”) Licensing and
10 Safety Benefits Task Force, leading the team that introduced the first Accident Tolerant
11 Fuel into a commercial reactor at Plant Hatch in 2018 and Plant Vogtle in 2019.

12 **Q. MR. WILLIAMS, HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE**
13 **COMMISSION?**

14 **A.** No.

15 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

16 **A.** The purpose of our testimony is to support the Twenty-sixth Semi-annual Vogtle
17 Construction Monitoring (“VCM”) Report and to update the Commission on efforts by
18 Southern Nuclear regarding the construction and future operation of this long-term asset
19 for Georgia customers. Additionally, our testimony, along with the testimony of Georgia
20 Power Company’s (“Georgia Power” or the “Company”) witnesses Mr. McKinney and Mr.
21 Haswell, provides justification for Georgia Power’s actual expenditures invested in the
22 Project between July 1, 2021, and December 31, 2021 (the “Reporting Period”), as made
23 pursuant to the Certificate of Public Convenience and Necessity.

II. PROJECT STATUS

Q. WHAT IS THE CURRENT STATUS OF THE PROJECT?

A. As discussed in the VCM 26 Report, the Project team continues its work promoting a safety-first culture. The Project continued on a positive safety trend that is well below the heavy construction industry average with a Total Recordable Incident Rate for 2021 at the lowest level since 2015. Site leadership continues to emphasize the importance of safety onsite.

We remain committed to our organization's high standards for safety and quality and continue to prioritize these two tenets ahead of schedule. The next major milestone for Unit 3 will be the receipt of the historic 103(g) letter from the NRC. The NRC's 103(g) letter will document the NRC's finding that there is reasonable assurance the Unit 3 license acceptance criteria are met, meaning that Unit 3 has been constructed and will be operated in conformance with the license, the Atomic Energy Act, and NRC regulations. Upon receipt of the 103(g) letter from the NRC, Inspections, Tests, Analyses and Acceptance Criteria ("ITAAC") are no longer part of Unit 3's license and no further NRC issuances are necessary in order for SNC to load fuel or begin the startup sequence.

Additionally, Site Operations continues to prepare for Unit 3 Fuel Load and Startup Testing. After fuel is loaded in Unit 3, Startup Testing will demonstrate the integrated operation of the primary coolant system and secondary systems at design temperature and pressure using nuclear fuel inside the reactor prior to reaching commercial operation.

For Unit 4, the Project successfully completed the Structural Integrity ("SIT") and Integrated Leak Rate ("ILRT") tests. The successfully completed tests not only demonstrated that the Containment Vessel meets the design requirements for protection of the plant and the public during normal and emergency operating conditions; but also the ability of the Project team to reduce the testing duration through the incorporation of lessons learned from Unit 3.

The Project has turned over systems critical to the completion of the Integrated Flushing (“IF”) evolution and to support Open Vessel Testing (“OVT”). Each of these milestones is significant to the progress of Unit 4 as it continues its transition from a heavy construction focus to testing. In the coming months, Unit 4 will progress further into testing as the Project team completes OVT and transitions to Closed Vessel testing, both of which support Cold Hydro testing projected to occur later in 2022.

Q. WHAT IS THE PERCENT COMPLETE FOR THE PROJECT?

A. We provide the Total Project Percent Complete as of January 31, 2022, on page 14 of the VCM 26 Report. The Total Project Percent Complete shown below is one measure of how progress is tracked onsite and does not include work associated with remediation. As of March 31, 2022, those figures are:

Table 1 – Project Percent Complete	
Project Phase	% Complete
Engineering	100%
Procurement	99.9%
Construction	97.1%
I&C/Cyber Security	99.9%
ITP/Startup Testing	69.3%
Total Project	96.3%

Q. DID THE NRC COMPLETE ITS FOLLOW-UP INSPECTION?

A. Yes. The NRC completed its follow-up inspection at Unit 3, which verified that the corrective actions taken by Southern Nuclear to resolve findings associated with the Corrective Action Program and electrical commodity installation issues were effective. The NRC concluded that no findings were identified from the follow-up inspection. As a result of the inspection, the NRC Staff reported during the exit interview that the criteria of the Inspection Procedure 90001, “Construction Regulatory Response Column Inspections,” were satisfied. While the associated NRC inspection report is not anticipated

1 until May 2022, the NRC has closed the two white findings identified by the NRC in
2 November of 2021 and returned Vogtle Unit 3 to the baseline inspection program.

3 **Q. CAN YOU BRIEFLY DESCRIBE THE ACTIONS TAKEN BY SOUTHERN**
4 **NUCLEAR IN RESPONSE TO THE NRC'S FINDINGS WHICH RESULTED IN**
5 **CLOSURE OF THE OPEN FINDINGS?**

6 **A.** Southern Nuclear Management identified the IEEE-384 cable separation concerns in late
7 2020 and initiated an Extent of Condition ("EOC") investigation. As previously discussed
8 in the VCM 24 and VCM 25 proceedings, in January 2021, the EOC effort was included
9 in a Root Cause Determination ("RCD") following additional discovery. The Project Team
10 worked diligently to identify the extent of the issues and the details that precipitated the
11 challenges.

12 During the execution of the RCD, and as the contributing causes were identified, the
13 Management team immediately took actions to curtail the issues through expanded
14 electrical training, increased oversight, heightened focus on the Corrective Action
15 program, and leadership changes in the Quality Control organization.

16 The issues identified during the review were documented through the Corrective Action
17 Program in Condition Reports, then a remediation plan was established that included joint
18 walkdown evaluations and increased inspections. Additionally, the Project team engaged
19 the Engineering organization to evaluate the issues and identify actions to ensure that the
20 standards were achieved, and the resolutions remained consistent with the unwavering
21 quality expectations of Southern Nuclear for delivering a plant which will operate safely
22 for the next 60 to 80 years.

23 Project leadership extended the evaluation to Unit 4 to ensure any issues with Unit 4 were
24 identified, remediated, and that process improvements were implemented to minimize
25 impacts to Unit 4.

Based on the results of the March 2022 NRC inspection, which noted no findings along with an elevated and improved pace of Corrective Action utilization, it is clear the actions taken by the Project team over the past year have resolved the findings through a demonstrated focus and commitment to improving upon the areas of concern and ensuring that a quality asset will be placed in service.

III. STATUS OF PROJECT SCHEDULE

Q. WHAT IS THE CURRENT PROJECTED IN-SERVICE DATE FOR UNIT 3?

A. The in-service dates for Unit 3 have not changed since the filing of the VCM 26 report, with a projected in-service date for Unit 3 during the fourth quarter 2022 or the first quarter 2023. The achievability of these dates is subject to current and future challenges, including construction productivity, the volume of construction remediation work, the pace of system and area turnovers, the completion of documentation which includes inspection records (“IRs”), and the progression of startup and other testing. Additional delays could result in a Unit 3 in-service date beyond the first quarter of 2023.

The following table summarizes Southern Nuclear’s planned timing for the remaining major milestones for Unit 3, as well as the projected timing of milestones included in the Risk Adjusted Schedule.

Table 1A - Unit 3 Comparison to Risk Adjusted Schedule		
Unit 3 Major Milestone	March 2022 Site Work Plan	December 2022 – March 2023 Risk Adjusted Schedule
Hot Functional Testing	July 2021 (Actual)	
103(g) Letter Received	May 2022	August 2022 – September 2022
Fuel Load	June 2022	August 2022 – October 2022
Commercial Operation Date	October 2022	December 2022 – March 2023

Q. HOW HAS UNIT 4 PROGRESSED SINCE THE VCM 26 REPORT?

A. The projected in-service date for Unit 4 has not changed since the filing of the VCM 26 report with an in-service date during the third or fourth quarter 2023 and the Project team is working towards a more aggressive site work plan that currently assumes a second quarter 2023 in-service date. Recently, the progress on Unit 4 has slowed due to some craft and support resources being diverted from Unit 4 temporarily to support construction close-out efforts on Unit 3. Even with this diversion of resources, Construction continues its efforts to add targeted field non-manual support resources and craft labor, particularly electricians, in an effort to increase production.

Project leadership continues to believe that working toward a challenging schedule is the best strategy to maintain the focus and drive of the Project, identify and mitigate risks early, and ultimately support the Project's objective of safely and successfully reaching commercial operation.

The table below shows a comparison of milestone dates between the current Unit 4 site work plan and the projected timing of milestones included in the Risk Adjusted Schedule.

Table 1-B – Unit 4 Comparison to Risk Adjusted Schedule		
Unit 4 Major Milestone	March 2022 Site Work Plan	September 2023 – December 2023 Risk Adjusted Schedule
Structural Integrity Test (“SIT”)/ Integrated Leak Rate Test (“ILRT”)	February 2022 (Actual)	
Cold Hydro Testing Start	August 2022	October 2022 – January 2023
Hot Functional Testing Start	October 2022	December 2022 – March 2023
Fuel Load Start	January 2023	April 2023 – July 2023
Commercial Operation Date	May 2023	September 2023 – December 2023

1 **IV. CONSTRUCTION AND TESTING PROGRESS**

2 **Q. HOW IS CONSTRUCTION PROGRESSING AT THE SITE?**

3 **A.** As of the end of March 2022, total construction on the Project is approximately 97%
4 complete after including site-specific balance of plant (“BOP”) structures. Unit 3 direct
5 construction, consisting of Bechtel’s current scope of work (plus direct scope completed in
6 the Unit 3 power block prior to Bechtel), is approximately 99% complete. Remediation
7 efforts are ongoing which is not factored into the percent complete, but also have
8 contributed to construction progress as can be seen by inspection record closures which is
9 discussed further in the testimony. Unit 4 direct construction is approximately 93%
10 complete and BOP is approximately 98% complete.

11 **Q. WHAT IS THE STATUS OF UNIT 3 FUEL LOAD?**

12 **A.** The Site Operations team continues to perform surveillances to ensure conditions and
13 testing requirements are met prior to loading fuel as preparations for Startup Testing
14 continues. Also, the Project now has 72 licensed operators for Unit 3, which is sufficient
15 to support Fuel Load and Startup Testing. Unit 3 Fuel Load could occur before the end of
16 the second quarter 2022, but a Fuel Load date as late as October 2022 should support an
17 in-service date in the first quarter 2023.

18 Prior to initial Fuel Load, and following Southern Nuclear’s final ITAAC submission, the
19 NRC will issue the 52.103(g) finding (also known as the 103(g) letter), which will
20 authorize Unit 3 to operate in accordance with the combined license. After the 103(g)
21 finding is issued by the NRC, Unit 3 will transition into the plant’s operating programs.
22 The Project team continues their efforts to complete all necessary inspections and
23 documentation completions to support ITAAC submittals.

24 The site has received all 157 fuel assemblies required to support Fuel Load. These
25 assemblies have been placed into the Spent Fuel Pool for storage. In February of this year,

1 the two neutron sources that help start the reaction necessary to support initial criticality
2 were also placed in the Spent Fuel Pool for storage.

3 Fuel Load on Unit 3 depends on the completion of significant documentation, including
4 IRs and work packages, as well as component and pre-operational tests. The completion of
5 these tasks, particularly the completion of the backlog of IRs, is challenging the site work
6 plan date for Fuel Load but is within the Risk Adjusted Schedule for Unit 3. In an effort
7 to mitigate these risks, the site team has increased the number of quality control and
8 engineering resources and improved cross-functional communication to ensure the closure
9 process is as efficient as possible.

10 **Q. PLEASE DISCUSS THE PROGRESS OF SYSTEM TURNOVERS AND TESTING**
11 **FOR UNIT 3.**

12 **A.** Currently 156 systems have been turned over from Construction to the Initial Test Program
13 (“ITP”) group. All systems in support of the 103(g) milestone have been turned over from
14 Construction to ITP, and seven systems remain to be turned over for testing in support of
15 Fuel Load. Daily meetings on site are structured to review the most critical paths and to
16 ensure the support organizations are aligned based on the criticality of the activity to the
17 individual sub-divided scope and the milestone as a whole.

18 The pace of system turnovers has slowed in recent months as the project teams have
19 focused on electrical commodity installation completion, identified and resolved
20 outstanding work items remaining for documentation closure in support of ITAAC
21 submittals, and in support of Fuel Load.

22 **Q. PLEASE PROVIDE AN UPDATE ON THE STATUS OF THE ITAAC**
23 **SUBMITTALS.**

24 **A.** All of Unit 3 and Unit 4’s Uncompleted ITAAC Notifications (“UINs”) have been
25 submitted. As discussed in prior testimony, ITAAC Closure Notifications (“ICNs”) for

1 both units have been and will be submitted following satisfaction of the acceptance criteria
2 in the ITAAC. Through March 31, 2022, 319 of 398 Unit 3 ICNs and 115 of 393 Unit 4
3 ICNs have been submitted. For Unit 3, the remaining 79 ICNs will be submitted in the
4 coming months.

5 Southern Nuclear and NRC staff continue to communicate regularly to identify, discuss,
6 and resolve ITAAC-related matters. NRC's internal procedure for issuance of the
7 52.103(g) finding seeks to mitigate the time between submission of the final ITAAC and
8 the issuance of the 52.103(g) finding to a maximum of 17 days. The Project team expects
9 that all ITAAC ICNs will be submitted in a timely fashion upon their completion and that
10 the NRC will have adequate resources to support its review.

11 **Q. WHAT IS THE STATUS OF OPEN VESSEL AND COLD HYDRO TESTING ON**
12 **UNIT 4?**

13 **A.** Unit 4 continues to make progress on OVT, which is projected to be completed in the
14 coming months. The ITP group has successfully completed many component tests in
15 support of the remaining OVT testing sequences. OVT includes flow measurement, pump
16 performance, line resistance, and tank mapping testing for the major systems flushed
17 during IF. Measurements obtained during OVT ensure that safety and defense-in-depth
18 systems and components function properly to support pre-operational testing and meet the
19 design requirements for protection of the plant and the public during normal and emergency
20 operating conditions.

21 The site is preparing for Cold Hydro testing, which is scheduled to begin later this year.
22 Cold Hydro testing verifies the integrity of the primary system at operating pressure. These
23 milestones are important to the successful startup and operation of the plant and will lay
24 the foundation for commercial operations.

1 **V. COVID-19 IMPACT AND RESPONSE**

2 **Q. PLEASE PROVIDE AN UPDATE ON THE COVID-19 IMPACTS ON SITE.**

3 **A.** The Project continues to navigate the effects of COVID-19 on its workforce, cost, and
4 schedule. Protecting the health and safety of the Vogtle Units 3 and 4 team and the
5 surrounding community remains the highest priority for the Project.

6 The Site team continues to monitor the state of the pandemic, and adjust protocols as
7 appropriate to reduce the potential for further impacts on the Project. The overall long-term
8 impact of the pandemic on cost and schedule remains difficult to state definitively at this
9 time but Georgia Power's share has been estimated to cost in the range of \$160-200 million
10 and three to four months of schedule margin.

11 **VI. PROJECT CHALLENGES**

12 **Q. WHAT ARE THE PRIMARY CHALLENGES FACING THE PROJECT TODAY?**

13 **A.** The Project has continued to face significant challenges to performance, specifically for
14 Unit 3 in the area of documentation closure, which has delayed transition of craft and field
15 non-manual resources to Unit 4 and impacted production on Unit 4. As the Project team
16 continues to move toward completion on Unit 3, documentation completion challenges
17 production on the Unit. Documentation completion continues to be a major focus for the
18 Site team, and several efforts are underway to complete the required documentation
19 necessary to achieve successful startup and commissioning. In the recent weeks, significant
20 progress has been made in the closure of IRs and other project documentation. The Project
21 team continues to prioritize safety and quality ahead of schedule and the Project team is
22 working closely with Bechtel and subcontractors to support their efforts to increase
23 production in a safe and quality manner.

1 **Q. PLEASE PROVIDE AN UPDATE ON THE UNIT 3 REMEDIATION WORK.**

2 **A.** The Project team has made significant progress with remediation work for Unit 3. The
3 Project continues to employ a critical path and near critical path strategy for the completion
4 of remaining work. As previously discussed, this strategy ensures the resources remain
5 collectively focused on achieving the same near-term goals as the Project progress towards
6 the 103(g) and Fuel Load milestones. The success of this process is best demonstrated by
7 the positive results of the recent NRC follow-up visit.

8 **Q. PLEASE PROVIDE AN UPDATE ON THE PROJECT'S DOCUMENTATION**
9 **CLOSURE EFFORTS.**

10 **A.** The Project continues to progress with the completion of documentation closure. As
11 discussed in the past, the closure of documentation demonstrating the Plant is constructed
12 according to the design and per the required codes, is an essential aspect of completing a
13 nuclear power plant. The completion of the IRs and work packages encompasses the
14 verification of numerous aspects of the construction process, and confirms the Plant is
15 constructed according to design and the required codes.

16 The resources focused on the completion of the IRs are transitioning their focus to the
17 closure of work packages as the physical work and documentation required to ensure the
18 plant is built to the required specification is completed. The Project team remains
19 committed to ensuring the Plant is constructed and will operate safely, which includes the
20 completion of documentation required to demonstrate adherence to design and the required
21 codes.

22 **Q. IS THE PROJECT TEAM LEVERAGING SNC FLEET RESOURCES TO ASSIST**
23 **IN PREPARING UNIT 3 FOR OPERATIONS?**

24 **A.** Yes. As Unit 3 approaches Fuel Load, Project Leadership has engaged the broader
25 Southern Nuclear fleet to provide support and oversight of the Operations team. An

1 integrated plan to transition from a construction site to an operating reactor is in place. We
2 are now completing final work and testing to support the 103(g) finding letter and Fuel
3 Load and concurrently the operating fleet has increased engagement to assist in a successful
4 commissioning phase. As part of this plan, remaining work is prioritized to support the
5 upcoming operating modes and oversight and support are in place to assure the readiness
6 of the operating team. The work is appropriately prioritized to ensure the successful
7 operation of the unit at the same level of performance excellence that is demonstrated by
8 the existing Southern Nuclear fleet.

9 **Q. WHAT STEPS ARE THE PROJECT TAKING TO PREVENT A REPEAT OF**
10 **QUALITY ISSUES AND DOCUMENTATION CHALLENGES ON UNIT 4?**

11 **A.** Project Leadership continues to implement short- and long-term corrective actions based
12 on our root cause analyses and lessons learned from Unit 3. Project Leadership has also
13 increased the use of SNC-led oversight teams with a focus on quality of electrical
14 commodity installations and effectiveness of the Corrective Action Program. Trending
15 tools are utilized to improve visibility into in-progress work and assist with focusing the
16 efforts of the oversight teams tasked to identify opportunities for further improvement and
17 implement additional lessons learned from Unit 3 for Unit 4. Southern Nuclear continues
18 to review Bechtel and the subcontractors' quality programs and will implement
19 improvement plans, as needed, to minimize future quality issues.

20 Regarding improvement in Unit 4 documentation closures to mitigate the challenges
21 discussed on documentation closure for Unit 3, the project has taken actions to improve
22 construction actions in Unit 4. Specifically, the Project Leadership continues to emphasize
23 sign-as-you-go and implements the changes and actions identified in the previous Root
24 Causes that are material to satisfactory documentation closure. Electrical completion in
25 Unit 4 continues to pose challenges for work package closure and the project leadership
26 continues to evaluate improvements to mitigate future backlog development.

1 **Q. PLEASE DESCRIBE THE POTENTIAL CHALLENGES FACING THE PROJECT**
2 **DURING STARTUP AND COMMISSIONING.**

3 **A.** While not expected, it is possible the Project will experience an unanticipated challenge
4 that would impact the forecasted in-service dates due to the first of a kind technology.
5 During Startup Testing, Operators will utilize the general operating procedures for the first
6 time to bring the plant from cold shutdown to initial criticality, synchronize the Unit to the
7 grid, and achieve power ascension through multiple steps, ultimately raising power to
8 100%.

9 During Unit 3 HFT, the Project successfully operated the plant at designed temperature
10 and pressure without fuel in the reactor. With Reactor Coolant Pumps (“RCPs”) being the
11 only heat source during HFT, minimal steam was generated for Turbine testing and not all
12 the secondary steam supply systems were operated. Therefore, it is expected that the
13 remaining secondary steam supply systems will be tested for the first-time during startup
14 when it reaches 100% power with nuclear fuel inside the reactor. The organization is well
15 equipped and has sufficient licensed operators to address challenges that may arise during
16 startup and commissioning.

17 **Q. PLEASE DESCRIBE UNIT 4’S CURRENT PRODUCTIVITY CHALLENGES.**

18 **A.** As Unit 4 continues to progress through construction and its transition into further testing,
19 the Project team’s challenges remain in electrical installation, first-time quality, and work
20 package closure. These challenges have been exacerbated by the need to transfer resources
21 to support Unit 3 work completion activities. The transfer of electrical craft resources from
22 Unit 3 to Unit 4 has started and will provide support for electrical commodity installation.

23 Focus remains on constructing the plant in a safe and quality manner. The Project team’s
24 focus is on quality electrical commodity installation. This includes planning future work to
25 ensure that the necessary work is completed in the appropriate order to align with Project
26 schedule. Further, alignment on craft and field non-manual staffing is reviewed to ensure

1 that the necessary resources are available to support the alignment in scope mentioned
2 previously. These steps are expected to help mitigate the impacts of the resources that have
3 been transferred to Unit 3.

4 Throughout the Reporting Period, the Quality Control organization on site has worked to
5 draw down the backlog of Quality Control inspection items on Unit 4. This reduction of
6 backlog allows the team to continue to focus on first time quality and is an important lesson
7 learned from Unit 3. By keeping the backlog of items to be inspected low, the team can
8 quickly assess unsatisfactory quality trends and work to identify and correct them before
9 they become a larger issue.

10 The Project continues to onboard craft and field non-manual resources to address the
11 staffing and productivity needs of the Project. In the coming months, staffing on Unit 3
12 will begin to shift back to Unit 4 as remediation and documentation closure work draws to
13 a close. The return of staffing to Unit 4 will provide a knowledge base on construction
14 quality and lessons learned on Unit 3 construction. However, until the work is completed
15 on Unit 3 and resources are completely transferred back to Unit 4, construction productivity
16 will remain challenged.

17 **VII. COST FORECAST**

18 **Q. PLEASE DISCUSS ANY UPDATES TO THE TOTAL CAPITAL FORECAST FOR**
19 **THE PROJECT SINCE VCM 25.**

20 **A.** Southern Nuclear utilizes its Project Controls processes and tools to manage project costs
21 and evaluate risks as part of the monthly cost forecasting process. As stated in the VCM
22 26 Report, following the contingency replenishment and schedule adjustments that
23 occurred in the third and fourth quarters of 2021, Georgia Power's projected share of the
24 total Project cost increased by \$745 million to \$10.0 billion with the Company adding \$646
25 million to the capital cost forecast for costs primarily associated with schedule extensions,

1 construction productivity, the pace of system turnovers, and support resources for Units 3
2 and 4 as well as the addition of \$99 million to replenish construction contingency.

3 **VIII. CONCLUSION**

4 **Q. HOW WOULD YOU DESCRIBE THE PROGRESS DURING THE REPORTING**
5 **PERIOD?**

6 **A.** The Project continues to work towards the completion of Units 3 and 4. Project Leadership
7 continues to create a safe environment in which the Project can operate and regularly
8 identifies and incorporates opportunities to improve performance.

9 The Project team remains committed to the safety of the personnel at the site and the
10 surrounding community, while also focused on executing the site work plan to bring both
11 Units online. In 2021, the Project team performed with the fewest number of recordable
12 incidents since 2015, a trend that the Project team continued through the first quarter of
13 this year. Project Leadership continues to implement process improvements for planning,
14 scheduling, and coordination of work as we continue our focus on opportunities to
15 complete major testing evolutions timely and safely, improve performance, and further
16 reduce risk as the Project transitions through testing, startup, and into operations.

17 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

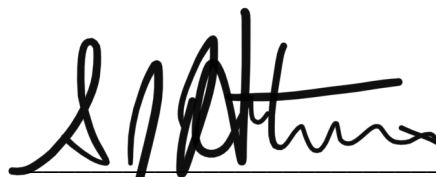
18 **A.** Yes.

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the within and foregoing DIRECT TESTIMONY OF THE PANEL OF DAVID L. MCKINNEY AND JEREMIAH C. HASWELL AND THE DIRECT TESTIMONY OF THE PANEL OF STEPHEN E. KUCZYNSKI AND JOHN B. WILLIAMS IN DOCKET NO. 29849 upon all parties listed below via electronic service or by hand delivery and addressed as follows:

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This 13th day of April 2022.

A handwritten signature in black ink, appearing to read "S. J. Hewitson", written over a horizontal line.

Steven J. Hewitson
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