

Steven J. Hewitson

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October 22, 2020

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

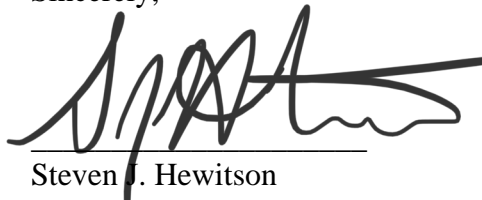
RE: Verification of Expenditures Pursuant to Georgia Power Company's
Certificate of Public Convenience and Necessity for Plant Vogtle Units 3
and 4, Twenty-third Semi-annual Construction Monitoring Report;
Docket No. 29849

Dear Mr. McAlister:

Enclosed for filing in support of Georgia Power Company's Twenty-third 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 Aaron P. Abramowitz.

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

Sincerely,



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-THIRD 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, and Twenty-second Semi-annual Reports.

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

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

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

6 **A.** Two witness panels will appear on behalf of the Company. One will be our panel, which
7 will set forth testimony on behalf of Georgia Power. The second panel consists of Stephen
8 Kuczynski and Aaron Abramovitz, who will set forth the testimony of Southern Nuclear
9 Operating Company (“Southern Nuclear”), 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-third Semi-annual Vogtle
15 Construction Monitoring Report (“VCM 23 Report”) and to provide justification for the
16 verification and approval of Georgia Power’s investment of \$701 million in the Project
17 between January 1, 2020 and June 30, 2020 (the “Reporting Period”), as made pursuant to
18 the Certificate of Public Convenience and Necessity (the “Certificate”). Although falling
19 outside the Reporting Period, we also provide an update on the schedule update effort that
20 was completed in July 2020, so that we can continue to provide the Commission with the
21 latest available schedule information.

22 Our testimony will also discuss the Project team’s ongoing response to the coronavirus
23 pandemic (“COVID-19”). While the pandemic continues, its final impact on the Project is
24 currently unknown; however, we are able to update the Commission on anticipated impacts
25 to cost and schedule based on information to date.

1 **Q. WHAT PERIOD DOES THE TWENTY-THIRD VCM REPORT COVER?**

2 **A.** The VCM 23 Report, incorporated herein by reference, covers the period between January
3 1, 2020 and June 30, 2020.

4 **Q. WHAT IS THE CURRENT STATUS OF THE PROJECT'S ESTIMATED COST**
5 **AND SCHEDULE?**

6 **A.** Georgia Power invested \$701 million of capital expenditures during the Reporting Period,
7 bringing Georgia Power's cumulative capital investment in the Project through the close
8 of the Reporting Period to approximately \$6.6 billion, after accounting for Georgia Power's
9 portion of the Toshiba Parent Guaranty (less the costs associated with securing the Parent
10 Guaranty payment and the customer refunds totaling approximately \$188 million). Georgia
11 Power's investment in the Project has been prudently incurred and complies with the
12 Certificate. The Project team continues to implement its strategy for completing
13 construction using an aggressive site work plans with in-service dates ahead of the
14 regulatory-approved in-service dates of November 2021 for Unit 3 and November 2022 for
15 Unit 4.

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

18 **A.** The following table identifies the allocation of Georgia Power's \$701 million of actual
19 expenditures during the Reporting Period.

Construction & Capital Cost	VCM 23 (in millions)
Original EPC	\$ -
Interim Payments & Liens	(6)
Site Construction Management	
Engineering Contractor	65
Procurement	159
Procurement	46
Subcontracts	113
Contract Construction	356
Bechtel FNM	106
Bechtel Craft	208
Bechtel Fees	18
Distributables	23
Construction Support & Project Management	70
Total Site Construction Management	650
Owners Costs	39
Ad Valorem	18
Transmission Interconnection	-
Test Fuel Offsets	-
Total Construction & Capital Cost	\$ 701

The expenditure category definitions are unchanged from the Company's Twenty-second Vogtle Construction Monitoring Report.

II. COVID-19 IMPACT AND RESPONSE

Q. WHAT ACTIONS ARE BEING TAKEN BY THE COMPANY AND SOUTHERN NUCLEAR TO RESPOND TO COVID-19 AT THE SITE?

A. The Company and Southern Nuclear remain dedicated to protecting the safety and health of workers on-site at Vogtle Units 3 and 4, as well as the surrounding community, with the

1 Project team continuing to take proactive measures to respond to the COVID-19 pandemic.
2 The Company, Southern Nuclear, and other Southern Company affiliates have continued
3 to collaborate in their response to the pandemic and Georgia Power is proud of the
4 continued delivery of safe and reliable energy to its customers during the pandemic. At
5 Vogtle Units 3 and 4, protecting the safety and health of our team and the surrounding
6 community is our priority. And while mitigating actions have varied across the country,
7 depending on the severity of the outbreak in the area, state and local government mandates,
8 and industry type, we believe the approach taken by the Project team has supported this
9 priority while also continuing construction, testing, and start-up of this critical
10 infrastructure project.

11 Throughout the pandemic, we have continued to consult with our medical advisors on the
12 appropriate precautionary measures to implement as we continue work on the Project. The
13 Project continues to provide medical facilities through an onsite clinic, staffed with medical
14 personnel who are equipped to administer COVID-19 tests to all badged personnel as well
15 as provide additional medical care that is not exclusive to the coronavirus. Over the past
16 few months, many field non-manual personnel who were working remotely began their
17 return to the site and have continued to work on-site. With the aid of distancing strategies
18 and protective equipment, the Project did not experience a spike in active cases after their
19 return. The Project has continued its field worker distancing strategies, adjusted break
20 schedules, and enhanced cleaning of gathering areas.

21 The Project team continues to monitor and track the number of active cases at the site and
22 compare it to trends in the surrounding area. In recent months, the number of positive cases
23 has continued to track with the surrounding area.

24 **Q. WHAT IS THE ESTIMATED COST OF COVID-19 FOR THE PROJECT?**

25 **A.** As reported in Table 1.1 of the VCM 23 Report, approximately \$19 million of actual
26 discrete costs related to COVID-19 were recorded during the Reporting Period. These costs
27 covered pandemic-related expenses such as the on-site medical village, enhanced cleaning

1 across the site, and supplies. The impact of the pandemic also includes costs associated
2 with the reduced productivity while large numbers of workers were quarantined and unable
3 to be productive, and the resulting schedule impacts. To date, SNC estimates that the cost
4 of COVID-19 on the Project, including direct and indirect costs, ranges between \$150
5 million and \$250 million, of which Georgia Power's share is currently estimated to be
6 between \$70 million and \$115 million.

7 Of course, the full impact of the pandemic on the Project is not yet known, particularly as
8 it relates to cost and schedule. Accordingly, our testimony reflects the Company's current
9 evaluation of the Project's cost and schedule as of the date of this filing. We will continue
10 to update the Commission throughout the pandemic and will provide an update when the
11 pandemic stabilizes and impacts may be more accurately assessed.

12 **Q. WHAT IMPACT HAS THE COVID-19 PANDEMIC HAD ON THE SCHEDULE?**

13 **A.** COVID-19 played a significant role in the decision to update the aggressive site work plan
14 in July 2020. Lower levels of production due to a smaller workforce were unable to support
15 the milestone dates set in the February 2020 schedule refinement. The aggressive work
16 plan reflected in the July 2020 update included changes to milestone dates, but the in-
17 service date remained the same. Notably, the November benchmark schedule also showed
18 changes in milestone dates after the July 2020 update, but affirmed the in-service dates for
19 both Units. While the pandemic continues to impact the Project, based on current
20 information and projections, we believe that the Project will be able to bring Unit 3 and
21 Unit 4 online by the regulatory-approved in-service dates of November 2021 and
22 November 2022.

23 **III. PROJECT STATUS**

24 **Q. WHAT SIGNIFICANT MILESTONES WERE REACHED DURING THIS**
25 **REPORTING PERIOD?**

26 **A.** As reported in the VCM 23 Report, the Project continued to reach significant milestones
27 during the Reporting Period, among them the setting of the Passive Containment Cooling

1 Water Tank ("CB20") on top of the Unit 3 Shield Building, completion of the turbine
2 assembly, and completion of the Structural Integrity Test ("SIT") and the Integrated Leak
3 Rate Test ("ILRT"). For Unit 4, the Reporting Period included setting the top on the
4 Containment Vessel, completion of all remaining Shield Building courses, and placing of
5 the Air Inlet panels on the Shield Building.

6 Since the VCM 23 Report, the Project has continued to work toward and achieve significant
7 milestones in the construction and testing of both Units. On Unit 3, the civil work was
8 completed on the Unit 3 Shield Building with the completion of the final concrete
9 placement on CB20. On Unit 4, the roof and all First Bay walls were completed on the
10 Turbine Building, as well as concrete placements for the Air Inlet panels on the Shield
11 Building.

12 As the Project continues its transition from construction to operations, several significant
13 testing and operational readiness achievements have been made since the filing of the VCM
14 23 Report, among them the completion of Turbine on Gear, and Cold Hydro Testing
15 ("CHT") on Unit 3. The Project team successfully completed the pre-startup review by the
16 World Association of Nuclear Operators ("WANO"), which included a review of the
17 Project's plan for transitioning systems through construction, testing, and ultimately to
18 Operations' control. The Project additionally completed the NRC-evaluated Emergency
19 Preparedness exercise, which is designed to ensure that the Project has trained, qualified
20 personnel prepared to take appropriate action in the event of unforeseen conditions that
21 challenge normal plant operations. Further, the Project team received the first 62 Reactor
22 and Senior Reactor Operator licenses. This milestone was the culmination of a multi-year
23 process to ensure there will be enough licensed operators for the Plant.

24 **Q. HOW DID THE JULY 2020 SCHEDULE UPDATE CHANGE THE PROJECT**
25 **SCHEDULE?**

26 **A.** The July 2020 Schedule Update was an effort by the Project team to assess performance
27 against the aggressive site work plan. While the in-service dates in the aggressive site work

1 plan did not change as a result of the July 2020 Schedule Update, there were changes to
2 testing and start-up milestone dates to account for construction and testing progress on site
3 since the schedule refinement in February 2020. These changes to the aggressive site work
4 plan, without an adjustment of the in-service dates, made the July 2020 Schedule Update
5 even more aggressive than previous iterations.

6 While the July 2020 Schedule Update site work plan is aggressive, Georgia Power
7 continues to believe that it is the appropriate strategy for completing the Units by the
8 regulatory-approved in-service dates. The Company and Southern Nuclear utilize the two
9 schedules as “guardrails” to evaluate progress at the site. By evaluating production against
10 the site aggressive work plan and the regulatory benchmark, direct construction earnings
11 can be analyzed as an additional measure of Project progress towards completion.

12 **Q. HAVE THERE BEEN FURTHER CHANGES SINCE THE JULY 2020 SCHEDULE**
13 **UPDATE?**

14 **A.** Yes. As discussed in the SNC Testimony of Mr. Kuczynski and Mr. Abramovitz, there
15 have been subsequent changes to the aggressive site work plan and associated milestone
16 dates. Georgia Power remains focused on the regulatory-approved in-service dates and the
17 associated November benchmark schedules. Georgia Power continues to believe that the
18 strategy of targeting completion dates ahead of the regulatory commitments is an
19 appropriate and reasonable strategy to meet the regulatory-approved in-service dates.

20 **Q. WERE THERE ANY CHANGES TO THE NOVEMBER BENCHMARK**
21 **SCHEDULE AS A RESULT OF THE JULY 2020 SCHEDULE UPDATE?**

22 **A.** Yes. The July 2020 Schedule Update included an update to the existing Unit 3 November
23 benchmark. The update provided further confidence in the Project’s ability to meet the
24 regulatory-approved in-service date of November 2021 for Unit 3. During the July 2020
25 Schedule Update, the Project team developed a preliminary Unit 4 November benchmark
26 schedule.

1 **Q. FOCUSING ON UNIT 3, SPECIFICALLY, WHAT IS GEORGIA POWER’S**
2 **ASSESSMENT OF PERFORMANCE AGAINST THE JULY 2020 AGGRESSIVE**
3 **SITE WORK PLAN?**

4 **A.** Direct construction on Unit 3 overall currently lags the July 2020 aggressive site work plan.
5 Southern Nuclear continues to update its site work plans as necessary, with the latest
6 iteration of the Project schedule reflecting Southern Nuclear’s current expectations.
7 However, despite the lag to the July 2020 Schedule Update and the challenging nature of
8 Southern Nuclear’s latest schedule iteration, the performance to date is ahead of the
9 November benchmark schedule, which is the focus of Georgia Power and the other Project
10 Owners. Figure A below shows the percent complete progress through September 2020 for
11 Unit 3.

12 Electrical and subcontractor performance continue to be the main areas of focus for
13 Georgia Power and the Project team and remain risks to Project performance. The
14 performance in these two areas will be a key factor in achieving the progress required for
15 system turnovers and to support the Hot Functional Testing (“HFT”) milestone. The
16 Company anticipates Southern Nuclear and Bechtel will effectively manage and sequence
17 electrical commodity installation and subcontracted scopes of work to support testing and
18 start-up activities, while also mitigating any challenges to cost performance and system
19 turnovers to support upcoming Project milestones.

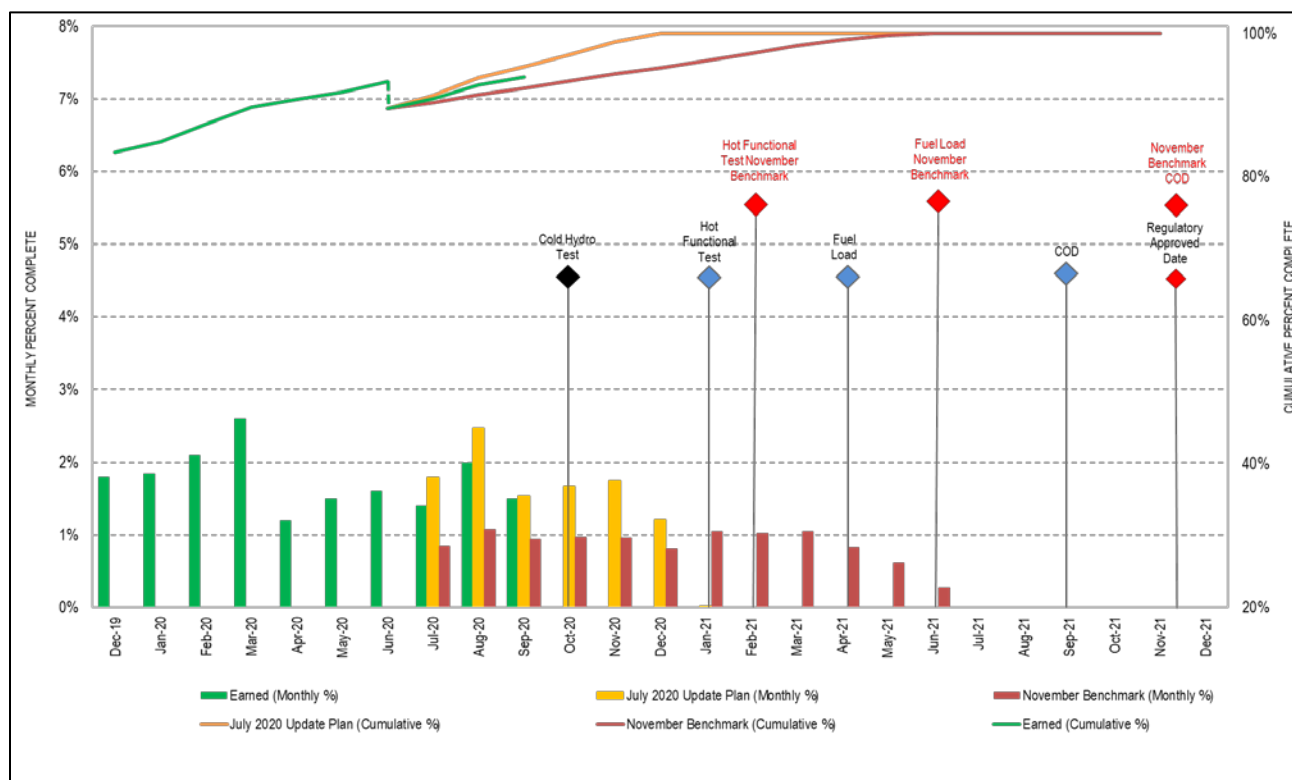


Figure A: Unit 3 Direct Construction Percent Complete

Q. WHAT IS THE CURRENT STATUS OF THE ELECTRICAL COMMODITY BACKLOG?

A. Unit 3 electrical performance has remained challenged. Lower than planned electrical earnings, which have been amplified by the onset of the COVID-19 pandemic at the site, contributed to lower than planned system turnovers and impacted milestone dates such as CHT, Condenser Vacuum, and HFT. Unit 3 remains ahead of the plan for unscheduled electrical installation but is behind on scheduled electrical installation as compared to the aggressive site work plan. Figure B below shows the electrical percent complete chart for Unit 3 through September 2020. Regarding Unit 4, the Company continues to monitor progress as it begins to ramp up staffing to support the electrical productivity levels necessary to meet its milestones.

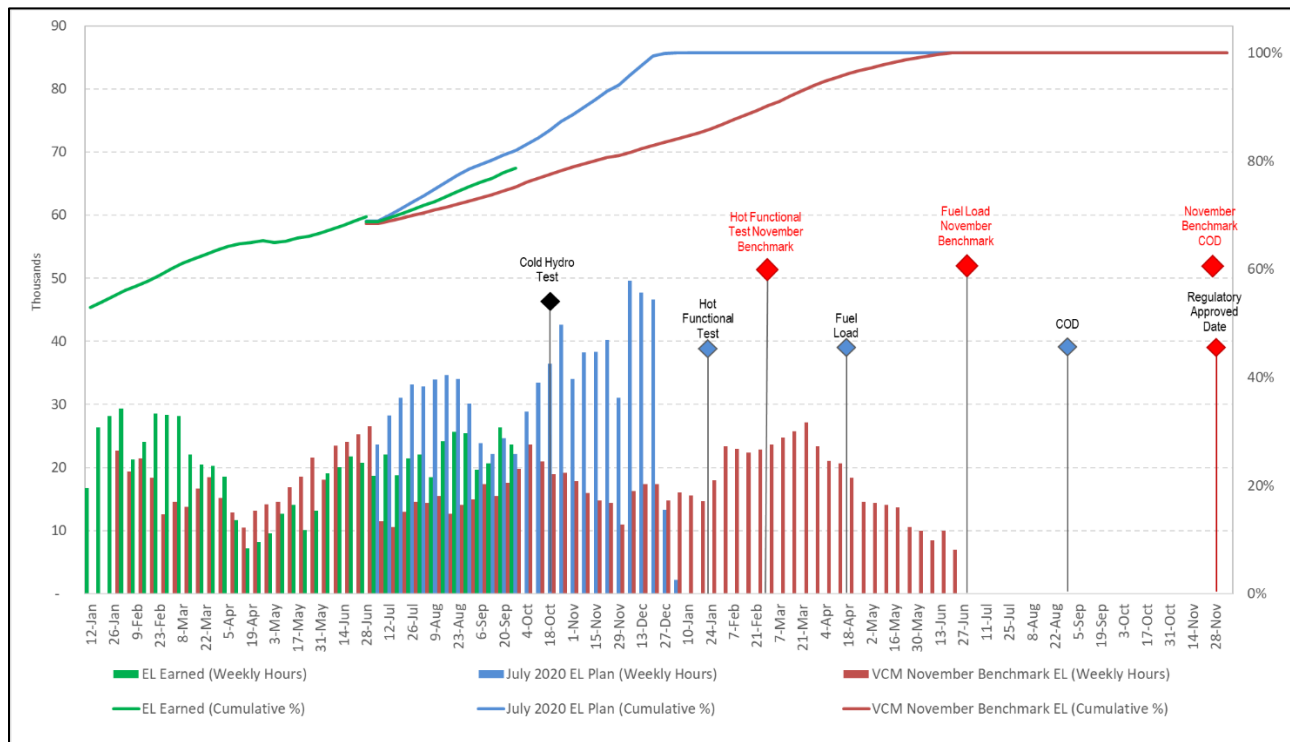


Figure B: Unit 3 Electrical Percent Complete

Q. PLEASE ELABORATE ON CURRENT SUBCONTRACT PERFORMANCE.

A. Unit 3 Subcontract performance continues to be an area of focus for the Project team. The Project's ability to meet its milestones is dependent upon subcontractors being able to access work fronts and complete work. Like other aspects of the Project, the COVID-19 pandemic impacted subcontractors as they took measures to protect their personnel while also continuing to make progress. Overall, subcontractor performance to date indicates a positive margin against the Unit 3 November benchmark and supports completion by November 2021.

1 **IV. ECONOMICS**

2 **Q. WHAT IS THE ECONOMIC BENEFIT TO COMPLETING PLANT VOGTLE**
3 **UNITS 3 AND 4?**

4 **A.** The cost to complete analysis performed for the VCM 23 Report shows that completing
5 the Project provides a weighted average expected value of relative savings of
6 approximately \$3.9 billion over a gas-fired Combined Cycle (“CC”) alternative. While the
7 Company has provided cost to complete analysis in each VCM Report, given the upcoming
8 completion of Unit 3, as well as the sustained positive customer benefit of completing
9 Vogtle Units 3 and 4 over a CC alternative, continuing to provide this analysis has marginal
10 value to the Commission. As such, the Company no longer believes it is necessary to
11 continue performing this analysis.

12 **V. CONCLUSION**

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

14 **A.** The Company requests that the Commission verify and approve the \$701 million in actual
15 expenditures invested in the construction of the Project through June 30, 2020, as made
16 pursuant to the Certificate.

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

18 **A.** Yes.

DIRECT TESTIMONY OF

STEPHEN E. KUCZYNSKI AND AARON P. ABRAMOVITZ

IN SUPPORT OF GEORGIA POWER COMPANY’S

TWENTY-THIRD SEMI-ANNUAL VOGTLE CONSTRUCTION MONITORING

REPORT

DOCKET NO. 29849

I. INTRODUCTION

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

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

My name is Aaron P. Abramovitz. I am the Vice President of Business Operations for Plant Vogtle Units 3 and 4 (the “Project”). My business address is 7825 River Road, Waynesboro, Georgia 30830.

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

A. I graduated from the Milwaukee School of Engineering with a Bachelor of Science degree in electrical engineering technology. I am also a graduate of the Harvard Advanced Management Program and have earned a senior reactor operator license from the U.S. Nuclear Regulatory Commission (“NRC”). I was elected to my current position as Chairman, President, and Chief Executive Officer of Southern Nuclear in July 2011. I am responsible for construction of the Project and other nuclear development initiatives, as well as all operations at Southern Company’s six operating nuclear reactors at plants Farley, Hatch, and Vogtle. I have more than 36 years of experience in the nuclear industry, joining Southern Nuclear from Exelon Nuclear, where I held the role of Senior Vice

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

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

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

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

22 **Q. MR. ABRAMOVITZ, PLEASE SUMMARIZE YOUR EDUCATION AND**
23 **PROFESSIONAL EXPERIENCE.**

24 **A.** I graduated from the University of Georgia with a Bachelor of Business Administration in
25 Finance and Management Information Systems. I joined Southern Company as a contractor
26 in the Financial Strategy and Decision Support organization. This was followed by a series

1 of Financial Analyst roles in various disciplines that included Financial Planning, Financial
2 Analysis, Regulatory Support, and Competitive Intelligence. From there I transitioned to
3 Georgia Power Company (“Georgia Power”) to serve as the Coordinator for Forestry and
4 Right of Way services. In 2008, I was assigned to the Kemper Project in Mississippi, where
5 I served in financial leadership roles of increasing responsibility, eventually serving as the
6 Project’s Finance Director, where I was responsible for governance, reporting, regulatory
7 support, and executive and Board of Directors communications. In 2015, I returned to
8 Atlanta to serve as the Director of Investor Relations for Southern Company, where I was
9 responsible for Southern Company’s communications and relationships with the
10 investment community. In 2018, I was named the Southern Nuclear Vogtle 3 and 4 Vice
11 President of Business Operations. In this role, I have responsibility for Southern Nuclear’s
12 Project Controls, Risk Management, Budgeting and Reporting, and Commercial Analysis
13 & Controls.

14 **Q. MR. ABRAMOVITZ, HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE**
15 **COMMISSION?**

16 **A.** Yes. I testified in this docket regarding the Nineteenth, Twentieth/Twenty-first and
17 Twenty-second Semi-annual Reports.

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

19 **A.** The purpose of our testimony is to support the Twenty-third Semi-annual Vogtle
20 Construction Monitoring (“VCM”) Report and to update the Commission on efforts by
21 Southern Nuclear regarding the construction and future operation of this long-term asset
22 for Georgia customers. Additionally, our testimony, along with the testimony of Georgia
23 Power’s witnesses Mr. McKinney and Mr. Haswell, provides justification for the
24 verification and approval of Georgia Power’s actual expenditures invested in the Project
25 between January 1, 2020 and June 30, 2020 (the “Reporting Period”), as made pursuant to
26 the Certificate of Public Convenience and Necessity.

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

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

3 **A.** As stated in the VCM 23 Report, the Project continues to navigate the effects of COVID-
4 19 on its workforce, cost and schedule. Protecting the health and safety of the Vogtle Units
5 3 and 4 team and the surrounding community remains the highest priority for the Project.

6 The Project continues to experience trends in positive COVID-19 tests similar to the
7 surrounding local area. As of October 20, 2020, over 1,000 workers have tested positive,
8 with almost 1,000 workers eligible to return to work. Since the beginning of the COVID-
9 19 pandemic, over 4,000 workers have been tested onsite and approximately 6,600 workers
10 have been isolated for at least 14 days as a result of being a close contact.

11 While the number of positive cases and isolations has been declining in recent months, the
12 Project was impacted throughout the Reporting Period. Project performance impacts were
13 experienced in large part due to higher than normal absenteeism for both craft and non-
14 manual personnel. Even with our improving metrics for positive cases, isolations, and
15 absenteeism, there are other disruptive aspects such as the impact to near-term planned
16 work or ongoing work suddenly having to stop or change direction due to a person, or
17 multiple people, requiring isolation. In addition to the direct construction impacts,
18 subcontractors also faced similar obstacles and experienced a degradation in their
19 performance as well. These performance challenges contributed to schedule milestone
20 delays and increased costs on the Project. Further, disruptions in the supply chain continue
21 to impact the Project as suppliers across the country navigate the pandemic's effects and
22 related state and local government restrictions.

23 **Q. PLEASE PROVIDE AN UPDATE ON THE COVID-19 PROTOCOLS THAT ARE**
24 **IN PLACE ON THE PROJECT.**

25 **A.** As mentioned in previous filings and testimony, the Project team has taken numerous
26 proactive measures in response to COVID-19. These actions include isolation of tested,

1 positive, and close contact individuals, as well as the expansion of on-site medical facilities
2 that are equipped to administer COVID-19 testing, deep cleaning of workspaces, reducing
3 the number of workers in given areas, and utilizing facial coverings when social distancing
4 is not possible.

5 As flu season approaches, the Project team is encouraging all personnel to get vaccinated
6 for the flu. While this preventive measure does not decrease the chances of getting COVID-
7 19, the medical team on site believes that it will help in the identification of symptoms
8 between the two. The Project is offering flu vaccines onsite through the medical village.

9 The Project team will continue to work with health professionals to monitor the actions
10 undertaken and will adjust as necessary to protect the health and safety of the workforce
11 and community while reducing the impacts of the pandemic on the Project.

12 We expect the pandemic will continue to present challenges and risks to the Project. Even
13 with this realization, the fact remains, however, that circumstances outside of our direct
14 control may arise that could affect project performance and cost. Currently, the range of
15 impact to the Company's estimated total cost is \$70 million to \$115 million. As the
16 pandemic continues, the overall long-term impact of the pandemic on cost and schedule
17 remains difficult to estimate definitively, and Southern Nuclear cannot presume any one
18 outcome or predict the ultimate cost and schedule impacts based on the pandemic at this
19 time.

20 **III. PROJECT STATUS**

21 **Q. WHAT IS THE CURRENT STATUS OF THE PROJECT?**

22 **A.** As discussed in the VCM 23 Report, the Project team continues its work on promoting a
23 safety-first culture. The Total Recordable Incident Rate continues its trend below the
24 Heavy Construction industry average. Site leadership continues to emphasize the
25 importance of safety and, in the month of September, the Project experienced zero
26 recordable injuries.

As Mr. McKinney and Mr. Haswell have described, there has been significant progress recently on Project milestones. Several major milestones have been completed since the last Reporting Period, including Unit 3 Cold Hydro Testing (“CHT”) and Turbine on Gear (“TOG”), which are significant accomplishments and support the start of Hot Functional Testing (“HFT”).

Additionally, Site Operations is preparing for Unit 3 Fuel Load and Startup Testing, which will commence following the completion of HFT and other pre-operational activities. Once fuel is loaded for Unit 3, Startup Testing will demonstrate the integrated operation of the primary coolant system and steam supply system at design temperature and pressure with fuel inside the reactor prior to declaration of commercial operation.

The Project continues to plan for commercial operation ahead of the regulatory-approved in-service dates of November 2021 for Unit 3 and November 2022 for Unit 4.

Q. WHAT IS THE PERCENT COMPLETE FOR THE PROJECT?

A. We provide the Total Project Percent Complete as of the end of the Reporting Period on page 15 of the VCM 23 Report. As of September 2020 (the last date for which information is available as of the filing of this testimony), those figures are:

Project Phase	September 2020 % Complete
Engineering	99.9%
Procurement	99.6%
Construction	85.5%
I&C/Cyber Security	99.9%
ITP/Startup Testing	32.7%
Total Project	88.6%

1 **IV. STATUS OF PROJECT SCHEDULE**

2 **Q. DID THE JULY 2020 SCHEDULE UPDATE RESULT IN ANY CHANGES TO**
3 **THE AGGRESSIVE SITE WORK PLAN?**

4 **A.** Yes, as discussed in the VCM 23 Report, evaluation of the Project's performance against
5 the February 2020 schedule refinement and impacts from COVID-19 necessitated the need
6 to reforecast the aggressive site work plan in July 2020 ("July 2020 Schedule Update").
7 This schedule update effort resulted in shifts to milestone dates as the Site team accounted
8 for the addition of hours to Bechtel's Direct Construction to-go work, as well as recent
9 performance and anticipated future production as impacted by a number of factors, among
10 them the COVID-19 pandemic

11 In the July 2020 Schedule Update, Unit 3 CHT was planned to occur in September 2020,
12 with HFT planned to occur during the fourth quarter of 2020. Considering the planned
13 timing of CHT and HFT, the Project team was able to re-sequence the Structural Integrity
14 Test ("SIT") and Integrated Leak Rate Test ("ILRT"), which were both successfully
15 completed in July 2020. The July 2020 Schedule Update did not adjust Unit 3 Fuel Load
16 or Commercial Operation Date ("COD").

17 The July 2020 Schedule Update also evaluated the amount of effort and associated hours
18 necessary to complete the final phases of construction for Bechtel scope across both units,
19 Balance of Plant ("BOP") and fabrication.

20 As stated in the VCM 23 Report, the July 2020 Schedule Update was premised on 1.7% of
21 direct construction completion per month for Unit 3 and 1.7% direct construction
22 completion per month through the end of the year for Unit 4. Over the past three months
23 since the July 2020 Schedule Update, Unit 3 has been averaging direct construction
24 completion of 1.6% and Unit 4 has averaged 1.1%. While these numbers are lower than
25 the July 2020 Schedule Update targets, Unit 3 remains ahead of the 1% average expected

1 to meet its November Benchmark, and Unit 4 is only slightly off the 1.2% average
2 November Benchmark pace required through the end of this year.

3 **Q. SINCE THE SUBMITTAL OF THE VCM 23 REPORT, HAS THE SITE UPDATED**
4 **THE EXPECTATIONS FOR THE TIMING OF MAJOR MILESTONES FOR ITS**
5 **WORKPLAN?**

6 **A.** Yes, with Unit 3 direct construction approximately 94% complete, CHT complete, and as
7 the site begins to shift its focus towards commencing operations, our range of completion
8 outcomes continue to narrow. For Unit 3, we are shifting from an aggressive site workplan
9 to more of an expectation for the timing of remaining activities and major milestones.
10 Considering impacts from COVID-19 and the recent productivity of electrical, and
11 subcontracted scopes of work in Unit 3, the Project team has moved the HFT, Fuel Load
12 and COD dates out by approximately twelve weeks from the July 2020 Schedule Update
13 dates. These changes will allow Construction additional time to finish required scopes of
14 work to support the success of these remaining Project milestones. Project leadership will
15 continue to evaluate the site work plan for opportunities to complete work efficiently while
16 also attempting to reduce risk to the successful startup of plant operations.

17 The table on the following page summarizes Southern Nuclear's expected timing for the
18 remaining major milestones for Unit 3 as compared to the November Benchmark and the
19 site work plan that was updated in July 2020.

Table 1-A – Unit 3 Milestone Dates			
Major Milestones	Current Site Expectation	November Benchmark	July 2020 Aggressive Site Schedule
Cold Hydro Testing Finish	<i>Complete</i>	<i>Complete</i>	<i>Complete</i>
Hot Functional Testing at temperature and pressure	January 2021	February 2021 ⁽¹⁾	October 2020
Fuel Load	April 2021	June 2021	December 2020
Commercial Operation Date	August/September 2021	November 2021	May 2021

(1) Margin exists in the November benchmark for the start of HFT, which could occur by late-March 2021 and still meet the regulatory-approved COD of November 2021.

The table below summarizes Southern Nuclear’s current aggressive site work plan for Unit 4 as compared to the its November Benchmark and the July 2020 Schedule Update.

Table 1-B – Unit 4 Schedule Dates			
Major Milestones	Current Aggressive Site Work Plan	November Benchmark	July 2020 Aggressive Site Schedule
Start Open Vessel Testing	May 2021	August 2021	May 2021
Finish Open Vessel Testing	June 2021	September 2021	June 2021
Cold Hydro Testing Finish	August 2021	November 2021	August 2021
Hot Functional Testing at temperature & pressure	November 2021	March 2022	October 2021
Fuel Load	February 2022	June 2022	January 2022
Commercial Operation Date	June 2022	November 2022	May 2022

Project leadership acknowledges that our expected case for Unit 3 is challenging and Unit 4’s site work plan is aggressive, but continues to believe that working toward a challenging schedule is necessary to maintain the focus and drive of the Project, identify and mitigate risks early, and ultimately support the Project’s objective of meeting the regulatory-approved in-service dates for Units 3 and 4.

1 **Q. PLEASE PROVIDE AN UPDATE ON THE PROJECT'S PROGRESS AGAINST**
2 **THE UNIT 3 REGULATORY BENCHMARK SCHEDULE.**

3 **A.** The November benchmark schedule provides points of comparison against the site work
4 plan. It also provides forecasted production levels needed to meet the regulatory-
5 approved in-service date of November 2021 for Unit 3. Through September 2020, Unit 3
6 has a surplus of direct hours when compared to the November benchmark schedule. In
7 addition to being ahead of the benchmark schedule in hours, the Project continues to stay
8 in line with the required milestones necessary to meet the regulatory-approved in-service
9 dates. For reference, while our current November benchmark assumes HFT in February,
10 that testing could start by late-March 2021 to support Fuel Load in mid-year, which
11 would still support a November 2021 completion date for Unit 3.

12 Considering current progress, current pace of completion, and assuming HFT starts near
13 the beginning of next year, Unit 3 could be completed ahead of the November 2021
14 regulatory commitment.

15 **V. CONSTRUCTION AND TESTING PROGRESS**

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

17 **A.** As of the end of September 2020, total construction on the Project is approximately 86%
18 complete when including site-specific BOP structures. Unit 3 direct construction,
19 consisting of Bechtel's current scope of work (plus direct scope completed in the Unit 3
20 power block prior to Bechtel) is approximately 94% complete, Unit 4 direct construction
21 is approximately 70% complete, and BOP is approximately 87% complete. Significant
22 progress continues in all phases of construction, with the setting of the Unit 3 Shield
23 Building roof, setting of the Unit 4 Containment Vessel top head, and continued bulk and
24 system commodity installation in both units, as well as continued system turnovers in
25 support of component testing.

1 **Q. HOW HAS ELECTRICAL PERFORMANCE ON UNIT 3 BEEN SINCE THE LAST**
2 **REPORTING PERIOD?**

3 **A.** During the Reporting Period, Unit 3 electrical performance continued to drive the critical
4 path. Lower than planned electrical earnings contributed to lower than planned system
5 turnovers as compared to the site work plan. As stated in our VCM 22 testimony, as the
6 Project has progressed into electrical system work related to the now completed CHT and
7 upcoming milestones of Condenser Vacuum and HFT, the complexity of this work has
8 been a contributing factor for the lower than planned performance. Additionally, the
9 COVID-19 effects on the workforce have amplified these impacts. Site leadership
10 continues to work to remove obstacles and implement plans to improve electrical
11 commodity performance.

12 Project success will continue to be dependent on Construction's ability to meet its projected
13 construction curves in this commodity. The site's work plan for electrical earnings will
14 continue to face challenges as production requirements increase to support system
15 turnovers and startup milestones. However, Project leadership expects some mitigation of
16 these challenges as work areas start to become less congested, which should support an
17 increase in productivity.

18 **Q. PLEASE DISCUSS THE PROGRESS OF SYSTEM TURNOVERS FOR UNIT 3.**

19 **A.** The current site work plan continues to support the Project team's progress through
20 significant testing evolutions leading up to Plant operations. The experience gained through
21 each testing evolution provides the Project team additional lessons learned and reduces the
22 amount of outstanding Project risk associated with Plant testing. Additionally, the Project
23 team continues to increase their test execution proficiency with the completion of each
24 testing evolution.

25 The Project team's focus on completing scope directly associated with major testing
26 evolutions has impacted the total number of completed system turnovers as compared to

1 the site work plan. Through October 1, over 42 systems have been turned over from
2 Construction to Testing and over 87 systems are at 90% completion or higher. Focusing
3 exclusively on achieving a system turnover schedule or measuring progress solely by the
4 number of system turnovers would have significantly hampered the amount of testing
5 completed by the Project team during the Reporting Period and, in turn, increased the
6 amount of potential risk associated with the Project.

7 The Project continues to reduce risk through the completion of major testing evolutions
8 including Unit 3 SIT/ILRT, TOG, and CHT. CHT represented the first time the primary
9 and secondary systems for Unit 3 were operated together, demonstrating a level of
10 integrated system operation prior to the start of HFT.

11 **Q. WHEN WILL FUEL INITIALLY BE DELIVERED TO THE SITE?**

12 **A.** The site continues to prepare for its first receipt of fuel during November. Readiness for
13 fuel receipt is one of the key milestones laying the foundation for the site to achieve
14 approval for Fuel Load. The area required for fuel receipt will be the first area in the
15 Nuclear Island of the site to be turned over to Operations. Additionally, as evidenced by a
16 successful WANO Pre-Startup Safety Review that highlights the strong positioning we
17 have attained to instill the right safety culture to successfully startup and operate these
18 units, completion of the NRC-evaluated Emergency Preparedness exercise, and the receipt
19 of the first 62 Reactor and Senior Reactor Operator licenses, the Operations team continues
20 to successfully demonstrate our readiness for fuel receipt and plant operations to both the
21 NRC and the World Association of Nuclear Operators (“WANO”) as part of ongoing
22 reviews.

1 **Q. WHAT IS THE STATUS OF HOT FUNCTIONAL TESTING FOR UNIT 3?**

2 **A.** HFT places the Plant's systems into normal operating conditions and demonstrates the
3 integrated operation of the primary coolant system and steam supply system at design
4 temperature and pressure, but without fuel in the reactor. Heat generated by the RCPs will
5 be utilized to raise the temperature and pressure of plant systems to normal operating levels.
6 This test will be the first time that components and systems are operated together, allowing
7 operators to exercise and validate procedures as required before Fuel Load.

8 The Project team has remained focused on completing Construction scope to support
9 testing evolutions in preparation for the execution of HFT in the coming months. As stated
10 previously, several critical testing evolutions that are prerequisites to the execution of HFT
11 were successfully completed and provide additional support for the Project team's focus
12 on Unit 3's Startup Testing.

13 The Project team has started to successfully operate Unit 3's RCPs for the first time. RCPs
14 are a critical component for the operation of the AP1000 and will provide the heat to raise
15 the temperature and pressure of plant systems to normal operating levels, which is a key
16 element for HFT. The completion of TOG and completion of Condenser Vacuum later in
17 the year will prepare the Unit to utilize the secondary systems and main turbine. During
18 HFT, the main turbine will be increased to normal operating speed using plant steam. HFT
19 will be the first time the components and systems are operated together, allowing operators
20 to run and validate procedures as required in preparation for Fuel Load. Completion of
21 HFT will validate many testing ITAACs, which are required to receive approval to load
22 fuel.

23 Following the completion of HFT, the Project team will cool down the Plant and begin
24 preparing for initial fuel load into the Reactor Vessel. The Site Operations team will
25 perform surveillances to ensure conditions and testing requirements are met prior to
26 loading fuel as preparations for Startup Testing continues.

1 Through the remainder of this year and into the first quarter of 2021, the Project team will
2 continue to focus on completion of system turnovers, major testing evolutions, and
3 documentation in preparation for NRC approval to load fuel and transition into Plant
4 operations.

5 **Q. WHAT ARE ITAAC AND HOW MANY NEED TO BE SUBMITTED TO THE**
6 **NRC?**

7 **A.** The Inspections, Tests, Analyses, and Acceptance Criteria, also known as ITAAC, are the
8 standard identified in the Combined Operating License that must be met to verify that the
9 as-built Vogtle Units 3 and 4 conform to the approved plant design and applicable
10 regulations. All ITAAC must be completed and accepted by the NRC before Vogtle Units
11 3 and 4 can load fuel and start operations. There are several types of ITAAC, but the
12 majority are related to engineering, construction, and testing. The current number of
13 ITAAC required for Unit 3 is 399. Unit 4 currently requires only 394 because there are a
14 few ITAAC that are common to both Units and must be submitted with Unit 3 to support
15 Fuel Load. Southern Nuclear may load fuel following its final ITAAC submission, and
16 after the NRC makes a finding under 10 CFR 52.103(g) (also known as the 103(g) letter)
17 that all acceptance criteria have been met. The 103(g) finding will authorize Southern
18 Nuclear to load fuel into the Reactor Vessel and commence Startup Testing.

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

20 **A.** SNC and NRC staff have been working together for years on proactive measures to manage
21 the ITAAC process and to mitigate the impacts of the expected volume of ITAAC reviews
22 prior to Unit 3 Fuel Load. Early on, SNC and NRC worked together to reduce the volume
23 of ITAAC submissions by combining similar ITAAC into a single submission. These
24 efforts reduced the number of required ITAAC from 881 to 399 for Unit 3, and from 881
25 to 394 on Unit 4. Another key mitigation measure was the establishment of the
26 Uncompleted ITAAC Notification (“UIN”) process where UINs provided NRC staff with

1 advance notice of the closure methodology for each ITAAC. All Unit 3 and Unit 4 UINs
2 have been submitted to and accepted by the NRC. This process has assisted in “front
3 loading” the ITAAC review process by reducing the workload as the closure
4 documentation is submitted leading up to Fuel Load. ITAAC Closure Notifications
5 (“ICNs”) document the results that meet the acceptance criteria. ICNs have and will be
6 submitted following completion of construction and/or testing. Through October 15, 2020,
7 149 of 399 Unit 3 ICNs and 105 of 394 Unit 4 ICNs have been verified as complete per
8 NRC reporting.

9 SNC and NRC staff continue to engage in communication to identify, discuss, and resolve
10 ITAAC-related issues. Both organizations have worked together to mitigate the time
11 between SNC’s submittal of its ITAAC all-complete letter and NRC’s issuance of the
12 52.103(g) finding, which is currently planned to be a maximum of 17 days. The Project
13 team remains confident that all ITAAC ICNs will be submitted in a timely fashion
14 supportive of the November regulatory-approved in-service dates and that the NRC will
15 have adequate resources to support their review.

16 **Q. PLEASE PROVIDE AN UPDATE ON UNIT 4 AS IT PREPARES FOR**
17 **TRANSITION FROM CONSTRUCTION TO TESTING.**

18 **A.** As discussed in the VCM 23 Report, Unit 4 is approaching the transition from heavy
19 construction activities to testing as preparations begin to support the Initial Energization
20 and Integrated Flush testing milestones next year. The Project team continues to work
21 diligently to increase the level of craft personnel on Unit 4. Recall, in mid-April, as
22 COVID-19 positive cases, self-isolation rates, and absenteeism continued to grow, the
23 Project took action to reduce the site’s workforce by approximately 20%. This reduction
24 in workforce was intended to mitigate the impacts of the pandemic to the site. As a result
25 of that reduction in force, many of Unit 4’s remaining resources were shifted to Unit 3.

1 Currently, the Project team is in the process of building back resources for Unit 4 as Unit
2 3 construction nears completion.

3 Even as craft resources are increasing, Unit 4 continues to make progress through
4 construction and testing activities, as we expect Unit 4's Main Control Room to be ready
5 to support testing before the end of this year. The team continues to incorporate lessons
6 learned from Unit 3, such as Unit 4 planning to utilize the "Train" approach in the
7 upcoming Initial Energization milestone as it begins component testing. The AP1000 Units
8 have a secondary (redundant) energy pathway that supports energization of the Unit. The
9 "Train" approach allows testing to occur on one energy pathway, while the other is de-
10 energized, allowing for flexibility in construction and testing.

11 VI. COST FORECAST

12 **Q. PLEASE DISCUSS ANY UPDATES TO THE TOTAL CAPITAL FORECAST FOR**
13 **THE PROJECT.**

14 **A.** Southern Nuclear continues to utilize its processes and tools to monitor and evaluate costs
15 associated with completing the Project. As stated in the VCM 23 Report, Georgia Power's
16 estimated cost for the Project increased by approximately \$150 million. Following the cost
17 contingency allocation and contingency replenishment that occurred during the second
18 quarter of 2020, Georgia Power's projected share of the Project is now \$8.5 billion.

19 **Q. PLEASE PROVIDE AN UPDATE ON PROJECT COST CONTINGENCY.**

20 **A.** As discussed in the VCM 23 Report, the Company's share of the projected cost to complete
21 the Project had included \$366 million in cost contingency. In the second quarter of 2020,
22 this contingency was fully allocated and was exceeded by approximately \$34 million. The
23 drivers of the most recent contingency allocation were similar to past allocations and were
24 amplified by the impact of COVID-19 on the Project. These drivers include higher than
25 forecasted costs associated with construction productivity; craft labor incentives;

1 additional resources for supervision, field support, project management, initial test
2 program, startup, operations and engineering support; subcontracts; and procurement.

3 Following the contingency allocation, Southern Nuclear recommended additional
4 construction contingency be added to the Total Project Cost Forecast, of which the
5 Company's share is approximately \$114 million. The Company and Southern Nuclear
6 continue to anticipate that all the forecasted contingency, including the most recent
7 addition, will be allocated and spent by the completion of the Project.

8 Southern Nuclear continues to evaluate cost impacts to the Project and believes that there
9 likely will be a contingency allocation soon but has not yet completed its analysis.

10 **Q. HOW ARE POTENTIAL COST RISKS TO THE PROJECT EVALUATED?**

11 **A.** Southern Nuclear utilizes a monthly cost forecasting process to evaluate cost and cost risks
12 to the Project. This process includes regular monthly meetings with each functional area to
13 review actual spend to date, budgets, forecasted costs and areas of risk or concern. Southern
14 Nuclear utilizes a monthly Cost Control process to ensure timely updates to the Project's
15 estimate to complete, forecast assumptions, and cost risks associated with staffing,
16 procurement, Bechtel's remaining scope of work, subcontracts, and Westinghouse
17 services, as well as other engineering and supporting activities. Through combining its
18 monthly Cost Control process with the risk management program, change control process,
19 project metrics, and weekly updates to the Project's schedule, the Project team evaluates
20 and communicates the Project's cost risk and cost contingency profile on a monthly basis
21 to the Project owners and to the Public Interest Advocacy ("PIA") Staff.

22 At a summary level, the Project's forward-looking cost risk profile can be grouped into
23 categories which include Bechtel Direct Construction, Subcontracts, Procurement,
24 Engineering, and Other Staffing. Using its suite of tools and analysis, and taking into
25 account the Project's forward-looking risk profile, as well as progress to date, Southern
26 Nuclear develops a range of cost risk to the Project, which is highly dependent on Direct

1 Construction's "to-go" CPI, Direct Construction's "to-go" hours or effort to completion,
2 and the projected in-service dates for Units 3 and 4. Further, and equally important to
3 estimating the range of cost risk remaining on the Project, Southern Nuclear also considers
4 the existing contingencies embedded in the Project's current estimate to complete.
5 Together the estimated range of cost risks and available contingencies provide, Southern
6 Nuclear with estimates of potential cost overrun scenarios on the Project.

7 **Q. PIA STAFF AND VMG HAVE PROVIDED TESTIMONY STATING THE**
8 **PROJECT IS GOING TO OVERRUN THE CURRENT COST ESTIMATE. DO**
9 **YOU HAVE ANY COMMENTS ON THEIR COST ANALYSIS?**

10 **A.** PIA Staff and VMG's analyses provide data points to this Commission, the Project's
11 owners, and Southern Nuclear, just like the various analyses and data produced by
12 Georgia Power's Oversight team and Southern Nuclear itself. When assessing the risk
13 profile for this Project, Southern Nuclear considers and values the analyses and opinions
14 from each entity that has roles to play in completion of this Project. While the analysis
15 filed as part of PIA Staff and VMG's VCM 22 testimony is valuable, it is important to
16 bear in mind that it is just one data point.

17 As Southern Nuclear reviewed PIA Staff and VMG's analysis, it was apparent that the
18 analysis was a very high-level view, or what is often referred to as an "order of
19 magnitude" analysis. The analysis used adjusted initial contract values for Bechtel's craft
20 hours and field non-manual services as its primary basis, then multiplied those dollar
21 values by various CPI factors to reach a conclusion on projected Project costs at
22 completion of the Project. The analysis performed by VMG assumes the remaining to-go
23 Construction hours as of July 2018 will be earned at CPI rates of 1.4 and 1.45.

24 In reviewing the PIA Staff and VMG calculation, it appears several key data points were
25 not considered in the analysis. First, PIA Staff and VMG's analysis appears to be based
26 off "to-go" costs established in July 2018, rather than Southern Nuclear's preferred

1 approach of assessing cost risk based on a routinely updated estimate to complete that
2 considers cost spent to date, updated risk assessments, updated cost forecast assumptions,
3 contingency allocations to-date and, ultimately, Project progress to date. Since PIA Staff
4 and VMG's analysis was first presented in VCM 22, Southern Nuclear would have
5 expected PIA Staff and VMG's calculation to start from August or September of 2019,
6 taking into account the information known at that time, as opposed to starting that
7 analysis from July 2018 and ignoring over a year's worth of Construction hours earned
8 and worked to date. Thus, it appears PIA Staff and VMG applied CPI rates of 1.4 and
9 1.45 to all hours, including hours which had been actualized prior to the filing of PIA
10 Staff and VMG's testimony.

11 As a point of reference, with Unit 3 approximately 94% complete, BOP approximately
12 85% complete, and Unit 4 approximately 70% complete, the Project has experienced a
13 CPI rate of approximately 1.35 to date vs. the 1.4 and 1.45 assumed in PIA Staff and
14 VMG's analysis. Also, while not out of the realm of possibilities, for the Project to finish
15 Direct Construction at an ending point of 1.4 and 1.45 CPI (as assumed in PIA Staff and
16 VMG's analysis), Southern Nuclear estimates that each hour earned from this point
17 forward on Unit 3, BOP3, and Unit 4 would need to be earned at a CPI of approximately
18 1.7.

19 Further, in July 2018, there was \$410 million of embedded cost contingency in Southern
20 Nuclear's estimated cost to complete for Bechtel Direct Construction. As a key variable
21 in its June 2018 cost estimate, Southern Nuclear assumed that this embedded cost
22 contingency would be utilized to offset the potential of higher than expected CPI. It does
23 not appear that PIA Staff and VMG included this embedded cost contingency in its
24 calculation based on CPI performance.

1 **Q. DO YOU THINK THE PIA STAFF AND VMG'S ANALYSIS IS INACCURATE?**

2 **A.** As stated earlier, the analysis is valuable as a data point; however, there are multiple
3 approaches and methods to assess the cost risk for this Project. In July 2018, Direct
4 Construction of Unit 3 and Unit 4 represented over one third of remaining costs for the
5 Project, and that ratio still holds today. Direct Construction also represents the largest
6 cost risk to the Project, accounting for over half of the remaining cost risk to the Project.
7 While it is possible that the Total Project Cost could increase in the future, based on its
8 current analysis of risks and the recent cost increase to the Project, Southern Nuclear
9 believes that the amount of that potential increase is less than that estimated by the PIA
10 Staff and VMG.

11 **VII. CONCLUSION**

12 **Q. HOW WOULD YOU DESCRIBE THE PROGRESS DURING THE REPORTING**
13 **PERIOD?**

14 **A.** Even in the challenging environment of a pandemic, the Project team made significant
15 progress towards the goal of achieving the regulatory-approved in-service dates. The
16 Project's ability to meet those dates is dependent on numerous factors, as discussed
17 throughout this testimony.

18 While the pandemic directly impacted productivity and progress on both Units, Project
19 leadership rose to the challenge of creating a safe environment in which the Project could
20 operate, and continues to identify and incorporate opportunities for efficiencies as part of
21 a comprehensive plan to improve performance and achieve the regulatory-approved in-
22 service dates.

23 The Project team remains committed first to the safety of the personnel at the site and the
24 surrounding community, while also focused on executing to the site work plan to maintain
25 margin to the regulatory-approved in-service dates. Production in electrical and

1 subcontract performance remain areas of focus for the Project, as Project leadership
2 continues to implement process improvements for planning, scheduling, and coordination
3 of work, including critical subcontractors. Project leadership continues to focus on
4 opportunities to complete major testing evolutions, implement actions to address
5 performance, evaluate effectiveness, and further erode risk as the Project transitions
6 through testing, startup, and into operations.

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


8 **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 AARON P. ABRAMOWITZ 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 22nd day of October 2020.



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