DIRECT TESTIMONY OF  
stephen E. kuczynski and Aaron P. Abramovitz

IN SUPPORT OF GEORGIA POWER COMPANY’S Twentieth/Twenty-First SEMI-ANNUAL VOGTLE CONSTRUCTION MONITORING REPORT

DOCKET NO. 29849

1. 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 35 years of experience in the nuclear industry, joining Southern Nuclear from Exelon Nuclear, where I was most recently the Senior Vice President of Engineering and Technical Services, responsible for fleet engineering, capital projects, outage services, and nuclear fuel. Prior to that role, I was the Senior Vice President of Exelon Nuclear’s Midwest Operations. In that role, I was responsible for oversight of Exelon Nuclear’s six Illinois operating facilities and 11 reactors.

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

I currently serve as a member of the DOE’s Office of Nuclear Energy, Nuclear Energy Advisory Committee.

Q. Mr. Kuczynski, have you previously testified before the GEORGIA PUBLIC SERVICE commission (“COMMISSION”)?

**A.** Yes. I testified in this docket regarding the Eighteenth and Nineteenth semi-annual Reports.

Q. Mr. Abramovitz, please summarize your education and professional experience.

**A.** I graduated from the University of Georgia with a Bachelor of Business Administration in Finance and Management Information Systems. I joined Southern Company as a contractor in the Financial Strategy and Decision Support organization. This was followed by a series of Financial Analyst roles in various disciplines that included Financial Planning, Financial Analysis, Regulatory Support, and Competitive Intelligence. From there I transitioned to Georgia Power Company (“Georgia Power”) to serve as the Coordinator for Forestry and Right of Way services. In 2008, I was assigned to the Kemper Project in Mississippi, where I served in financial leadership roles of increasing responsibility, eventually serving as the Project’s Finance Director, where I was responsible for governance, reporting, regulatory support, and executive and Board of Directors communications. In 2015, I returned to Atlanta to serve as the Director of Investor Relations for Southern Company, where I was responsible for Southern Company’s communications and relationships with the investment community. In 2018, I was named the Southern Nuclear Vogtle 3 and 4 Vice President of Business Operations. In this role, I have responsibility for Southern Nuclear’s Project Controls, Risk Management, Budgeting and Reporting, and Commercial Analysis & Controls.

Q. Mr. Abramovitz, have you previously testified before the commission?

**A.** Yes. I testified in this docket regarding the Nineteenth semi-annual Report.

Q. What is the purpose of your testimony?

**A.** The purpose of our testimony is to support the Twentieth/Twenty-First semi-annual Vogtle Construction Monitoring (“VCM”) Report and to update the Commission on efforts by Southern Nuclear regarding the construction and future operation of this long-term asset for Georgia customers. Additionally, our testimony, along with the testimony of Georgia Power’s witnesses Mr. McKinney and Mr. Haswell, provides justification for the verification and approval of Georgia Power’s actual expenditures invested in the Project between July 1, 2018, and June 30, 2019 (the “Reporting Period”), as made pursuant to the Certificate of Public Convenience and Necessity.

1. PROJECT STATUS

Q. what is the current status of the Project?

**A.** As discussed in the VCM 20/21 Report, Southern Nuclear and Georgia Power continue to fulfill their commitment to safety, quality, and compliance. During the Reporting Period, approximately 19.8 million work hours were performed with the first lost-time incident occurring after more than 60 million hours had been safely worked when a crew member suffered a broken leg while performing a routine field inspection. Southern Nuclear and Bechtel continue to enhance their people-based safety program to cultivate an owner-mindset among personnel at the Project, placing accountability and ownership of safety performance on everyone supporting the Project.

Mr. McKinney and Mr. Haswell have described the significant recent milestones the Project has achieved under SNC leadership. The Project continues to plan for completing construction on an aggressive schedule, 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 set out the Total Project Percent Complete as of the end of the Reporting Period on page 12 of the VCM 20/21 report. As of September 2019 (the last available date for which information is available as of the filing of this testimony) those figures are:

|  |  |
| --- | --- |
| Project Phase | September 2019 % Complete |
| Engineering | 98.6% |
| Procurement | 97.1% |
| Construction | 73.0% |
| I&C/Cyber Security | 98.7% |
| ITP/Start-Up Testing | 17.4% |
| **Total Project** | **81.3%** |

1. COST FORECAST

Q. Please DISCUSS any updates to THE total capital forecast FOR THE PROJECT.

**A.** Southern Nuclear continues to monitor and evaluate the costs associated with completion of the Project. The total Project cost forecast remains unchanged from VCM 19.

Q. Please provide an update on Project cost contingency.

**A.** As discussed in the VCM 19 Report, Georgia Power’s share of the projected cost to complete the Project includes $366 million in cost contingency. To date, this amount remains unallocated. However, as discussed in the VCM 20/21 Report and Mr. McKinney’s and Mr. Haswell’s testimony, it is expected that an allocation of some portion of the cost contingency will occur in the near term. At the time of this filing, analysis is ongoing to determine the amount to be allocated. Through its monthly budget review process, SNC has continued to engage with Georgia Power and the other Owners to inform them of any cost pressures and likely risks that would require allocation of contingency. These cost pressures and risks are reported to and discussed with Commission Staff and the Construction Monitor on a monthly basis, if not more often.

1. CONSTRUCTION PROGRESS

Q. How is construction progressing at the Site?

**A.** As of the end of September 2019, total construction on the Project is approximately 73.0% complete when including site-specific balance of plant (“BOP”) structures. Unit 3 direct construction, consisting of Bechtel’s current scope of work (plus direct scope completed prior to Bechtel in the Unit 3 power block) is approximately 76.9% complete, Unit 4 direct construction is approximately 56.8% complete and BOP is approximately 76.1% complete. Significant progress continues in all phases of construction, with the setting of modules and equipment for both units, including the Integrated Head Package in Unit 4 and the setting of the tension ring on the Unit 3 Shield Building, bulk and system commodity installation, continued system and component testing, and flushing of the “Big 5” systems connected to the Unit 3 Reactor Vessel.

**Q. Please give an update on project transition from construction to testing and start-up.**

**A.** As discussed in the VCM 20/21 Report, Unit 3 is transitioning from construction activities to testing, which has supported Initial Energization and the start of Integrated Flushing, both major 2019 Project milestones.

As of October 18, 2019, the Project had completed approximately 50% of the flushing activities needed to support Open Vessel Testing (“OVT”), the next major testing milestone. OVT is scheduled to start toward the end of 2019 and will continue through the first quarter of 2020. This test will verify the functionality of each of the “Big 5” systems that tie to the Reactor Vessel by moving water through them individually to obtain the flowrate, pump performance data, line resistance, and to ensure all the systems and components meet the design requirements. Additionally, the Main Control Room is approaching readiness to support testing and start-up operations. The Main Control Room is necessary to support Cold Hydro testing, which verifies that the primary system can hold the designed operating pressure. Cold Hydro testing is scheduled to begin in the second quarter of 2020. Each of these milestones is important to the successful start-up and operation of the plant and will lay the foundation for commercial operations.

The site continues to plan construction activities based on an aggressive schedule in order to turn over more systems for testing to meet upcoming milestones. To facilitate a successful transition to testing, the site has established a Testing Control Center (“TCC”) to coordinate all test activities, including the lock-out tag-out program, and provide resolution to any testing challenges. The TCC is manned 24 hours per day and coordinates with Construction to remove barriers that might affect testing preparation and execution.

Q. Please provide an update on Direct Construction cost performance.

**A.** The Direct Construction Cost Performance Index (“CPI”) measures the ratio of direct construction hours spent on an activity relative to hours earned. The cumulative CPI for the Project as of the week of October 6, 2019 is 1.20. The CPI has declined in performance over the past six months largely due to Unit 3’s transition from civil commodities to mechanical and electrical commodities, and ultimately the transition to increased system turnover activity. Southern Nuclear and Bechtel are implementing plans to improve CPI with a focus on minimizing non-productive work time and reinforcing standards and expectations for Project performance.

To address the performance decline, Southern Nuclear and Bechtel implemented an electrical productivity improvement plan. Additionally, the Project team began developing specialized teams to focus on mechanical piping, electrical, and instrumentation and controls commodities installation, staffing up night shift crews and performing walkdowns of systems to be turned over to identify and address issues in advance. Initial success of several of these initiatives has been seen, but further improvement is expected. Project leadership will continue monitoring the results and adjust mitigation plans as necessary.

Q. Please provide an update on Overall Project schedule performance.

**A.** The Project continues to plan for completing the Project on an aggressive schedule in an attempt to improve production and provide margin to the regulatory-approved in-service dates of November 2021 for Unit 3 and November 2022 for Unit 4. The Schedule Performance Index (“SPI”) is a measure of how efficiently the Project is progressing compared to the aggressive site working schedule. As of the week of October 6, 2019, the Project has a cumulative SPI of 1.02 as measured against the aggressive site working plan. Southern Nuclear and Bechtel continue to look for opportunities to complete activities early by utilizing engineering and licensing solutions and to simplify and increase efficiencies that aid timely and compliant Project completion.

In recent weeks, SPI has risen to a four-week rolling average of 1.19 as of the week of October 6, 2019. Electrical productivity in Unit 3 is a specific area of focus, especially as system turnover activities continue to increase. Despite challenges to the aggressive site working schedule, Southern Nuclear believes that flexibility remains in the schedule and current and planned performance supports completion by the regulatory-approved in-service dates. Despite the recent challenges to the aggressive site working schedule for Unit 3, Southern Nuclear believes that utilizing an aggressive site working schedule is the appropriate management strategy to meet or exceed the regulatory-approved in-service dates, with flexibility and mitigation actions identified to reach these targets.

Q. PLEASE PROVIDE AN UPDATE ON PROGRESS RELATIVE TO THE AGGRESSIVE SITE WORKING SCHEDULE.

**A.** The Project continues to plan for completing the overall Project on the aggressive site working schedule developed through the April 2019 schedule re-baseline. As discussed in Mr. McKinney’s and Mr. Haswell’s testimony, Unit 4 and BOP performance has consistently met the planned earnings in the site working schedule, while Unit 3 has experienced a negative trend in earnings against its aggressive production requirements. This has led to a growing backlog of construction hours relative to the aggressive site working schedule that must be addressed prior to completion of the Project. Currently, Unit 3 is in the most complicated phase of electrical and mechanical commodity installation, which are the areas from which the majority of production challenges have stemmed. Southern Nuclear acknowledges that the site working schedule is aggressive but believes working toward a challenging schedule is necessary to maintain the focus and drive of the Project.

Project leadership continuously evaluates the site working schedule for opportunities to progress the Project through testing and turnover and believes that while aggressive, the site working schedule is still the best plan to complete the Project as quickly, safely and efficiently as possible.

Q. What is the Project doing to address electrical performance on Unit 3?

**A.** As discussed previously in our testimony, the strategy in the Unit 3 site working schedule is and will continue to be aggressive. While Unit 3 electrical performance is behind the site working schedule, the Project believes that there is flexibility that can be utilized to adjust the timing of electrical commodities to be installed. This should enable near-term system turnovers and bulk construction performance that support the regulatory-approved in-service dates.

To develop the previously mentioned electrical improvement plan, Southern Nuclear and Bechtel management engaged a team of leaders in the electrical discipline and from Unit 3 to address the need to improve electrical productivity and to identify obstacles and develop actionable measures to execute.

Q. Please provide Southern nuclear’s assessment of Bechtel and westinghouse’s performance.

**A.** Bechtel has continued to plan the Project’s construction schedule ahead of the regulatory-approved in-service dates of November 2021 and November 2022 and is working to improve productivity. Southern Nuclear expects improved performance to provide margin to the regulatory-approved schedule. Bechtel and Southern Nuclear continue to work closely to see that performance goals of the Project are met.

Westinghouse continues to provide services necessary to complete design work, optimize existing designs and processes, respond to engineering needs from the Project, and procure specialized materials. Southern Nuclear directs Westinghouse in the execution of its responsibilities.

Q. What is Southern Nuclear’s standing with the NRC?

**A.** During the Reporting Period, Southern Nuclear received no Notices of Violation and remained in favorable standing with the NRC as indicated by its green status under the NRC’s Construction Reactor Oversight Process (the “cROP”). The cROP was designed and implemented to ensure reactors under construction are built according to the NRC-approved design. This program allows the NRC to arrive at objective conclusions about a licensee’s effectiveness in guaranteeing construction quality, providing for predictable responses to performance issues, and clearly communicating performance assessment results to the public.

1. PROJECT CHALLENGES

Q. Please give an update on Project challenges.

**A.** The Project’s ability to meet the regulatory-approved schedule is dependent on numerous factors, including the increased production targets in the site working schedule for electrical and mechanical commodities, effective management of subcontractor production for their scopes of work, continued focus on testing and system turnover, and preparedness for pre-operational and startup activities. Project leadership continues to evaluate processes for improvements, implementing proactive planning, and scheduling enhancements designed to maintain and improve Project performance.

In addition to planning and scheduling enhancements, and as discussed earlier in this testimony, Project leadership has taken actions to increase the efficiency and effectiveness of the craft labor that is currently on site. To address the trend in negative performance in Unit 3 electrical earnings and the resulting backlog of construction hours relative to the aggressive site working schedule, Project leadership has worked to increase the number of craft workers on night shift. Allocating more workers to night shift increases the number of open work fronts and allows for concentrated areas of focus. In addition to night shift staffing, crews are being built to focus on specific electrical commodity tasks (i.e. bending conduit, bulk cable pulls, and terminations). Creating these task-specific crews allows craft to focus their efforts on specific tasks and creates familiarity with the work. Utilizing task-specific crews additionally allows field leadership to effectively address areas of concern with known work crews.

While Project leadership has put in place actions to address performance, the effectiveness of these actions needs to be closely monitored and adjusted as necessary for them to be successful.

1. STATUS OF PROJECT SCHEDULES

Q. Has any analysis been done at SNC to support the regulAtory-approved in-service dates?

**A.** Yes. Southern Nuclear continues to evaluate the Project schedule, and based on its evaluation of the Project schedule, expects to reach Project completion by the regulatory-approved in-service dates.

1. CONCLUSION

Q. Does this conclude your testimony?

**A.** Yes.