

DIRECT TESTIMONY OF

KYLE C. LEACH

AND

DAVID L. MCKINNEY

**IN SUPPORT OF GEORGIA POWER COMPANY'S EIGHTH SEMI-ANNUAL
VOGTLE CONSTRUCTION MONITORING REPORT**

DOCKET NO. 29849

I. INTRODUCTION

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

2 **A.** My name is Kyle C. Leach. I am the Director of Resource Policy and Planning for
3 Georgia Power Company ("Georgia Power" or the "Company"). My business address is
4 241 Ralph McGill Boulevard, N.E., Atlanta, Georgia 30308.

5 My name is David L. McKinney. I am the Vice President of Nuclear Construction
6 Support, Vogtle Units 3 & 4 at Southern Nuclear Operating Company ("SNC"). My
7 business address is 241 Ralph McGill Boulevard, N.E., Atlanta, Georgia 30308.

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

10 **A.** I graduated from Auburn University in 1983 with a Bachelor of Science degree in Civil
11 Engineering. I joined Georgia Power in 1980 as a co-op in the Civil Engineering
12 department and moved from there into a Power Marketing Engineer role in various
13 regions around Atlanta. I then worked as a Key Account Manager responsible for
14 servicing major Georgia Power industrial accounts, and following that role, I served as
15 Sales Manager at Southern Company's former operating subsidiary in Bristol, England.

1 From 2000 to 2006, I held various positions throughout the marketing organization at
2 Georgia Power including assistant to the Senior Vice President of Marketing, manager of
3 the Business Development Organization and manager of the Key Account program.
4 Most recently, I served as the Director of Federal Regulatory Affairs in Southern
5 Company's Washington D.C. office where I was the liaison between Southern Company
6 and the Federal Energy Regulatory Commission.

7 In August 2011, I was appointed the Director of Resource Policy and Planning for
8 Georgia Power. In this position, my responsibilities include integrated resource planning,
9 generation development and procurement and contract administration.

10 **Q. MR. LEACH HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE GEORGIA**
11 **PUBLIC SERVICE COMMISSION?**

12 **A.** Yes, I have testified regarding the Company's Application for Decertification of Plant
13 Branch Units 1 & 2 and Plant Mitchell Unit 4C, Application for Certification of the
14 Power Purchase Agreements with BE Alabama LLC from the Tenaska Lindsay Hill
15 Generating Station and with Southern Power Company from the Harris, West Georgia
16 and Dahlberg Electric Generating Plants and Updated Integrated Resource Plan in Docket
17 No. 34218. I have also testified in the Company's Application for the Certification of
18 Capacity from Block 1 and Capacity from Blocks 2-4 in Docket No. 26550, the Review
19 of Proposed Revisions and Verification of Expenditures Through the Quarter Ending
20 June 30, 2011 Pursuant to Georgia Power Company's Certificate of Public Convenience
21 and Necessity for Plant McDonough Units 4, 5 and 6 in Docket No. 24506, and most
22 recently I have testified in the 2013 Integrated Resource Plan in Docket No. 36498 and
23 also in this docket regarding the Fifth, Sixth and Seventh Semi-Annual Reports.

1 **Q. MR. MCKINNEY, PLEASE SUMMARIZE YOUR EDUCATION AND**
2 **PROFESSIONAL EXPERIENCE.**

3 **A.** I graduated from Auburn University in 1981 with a Bachelor of Science degree in Civil
4 Engineering. I joined Southern Company Services as a co-op in the Hydro Engineering
5 department and moved from there into a Project Engineer role in Southern Company
6 Generation. I then served as a Civil Engineering manager in the Technical Services
7 department before taking an assignment as Project Manager of Combined Cycle
8 Construction. After that I served as General Manager of New Generation Construction
9 before taking my current position of Vice President, Nuclear Construction Support in
10 April 2009. In this role, I have responsibility for Commercial and Cost Management for
11 the construction of Vogtle Units 3 and 4.

12 **Q. MR. MCKINNEY HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE**
13 **GEORGIA PUBLIC SERVICE COMMISSION?**

14 **A.** Yes, in this docket regarding the Sixth and Seventh Semi-Annual Reports.

15 **Q. WHAT ARE THE ISSUES THAT ARE TO BE DECIDED IN THIS CASE?**

16 The Georgia Public Service Commission's (the "Commission") procedural and
17 scheduling order issued for the Company's February 2013 Eighth Semi-Annual Vogtle
18 Construction Monitoring Report ("Eighth VCM Report") identifies three issues to be
19 decided in this case. First, whether the Commission should verify and approve or
20 disapprove the expenditures as made pursuant to the certificate of public convenience and
21 necessity (the "Certificate") issued by the Commission. Second, whether the Commission
22 should exclude certain construction cost amounts from the Company's rate base on the
23 basis of fraud, concealment, failure to disclose a material fact, imprudence or criminal
24 misconduct. And, third, whether the Commission should amend the existing certificate to
25 reflect a revised construction schedule and associated extension costs, and a revised total
26 project cost.

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

2 **A.** The purpose of our testimony is to support the Eighth VCM Report and to provide the
3 Company's justification of why the Commission should verify and approve the actual
4 expenditures invested in the construction of Plant Vogtle Units 3 and 4 nuclear energy
5 facility (the "Facility") through December 31, 2012 as made pursuant to the Certificate.
6 In addition, our testimony supports the Company's request to amend the Certificate to
7 reflect a revised construction schedule and the associated extension costs, and to reflect a
8 total projected capital cost of \$4.8 billion.

9 **Q. WHAT PERIOD DOES THE EIGHTH VCM REPORT COVER?**

10 **A.** The Eighth VCM Report covers the period between July 1, 2012 and December 31, 2012.

11 **Q. WHAT IS THE PURPOSE OF THE SEMI-ANNUAL REPORT FILING?**

12 **A.** As required by the underlying Certificate, on February 28, 2013, Georgia Power filed
13 with the Commission its Eighth VCM Report, which is incorporated into this testimony
14 by reference. The purpose of the Eighth VCM Report is to provide the basis upon which
15 the Commission may verify and approve expenditures made pursuant to the Certificate in
16 accordance with O.C.G.A. § 46-3A-7(b). In addition, the Semi-Annual Report filing is
17 intended to allow the Commission to approve, disapprove or modify any proposed
18 revisions in the project schedule and budget. In the Eighth VCM Report, the Company
19 requested that the Commission verify and approve the actual expenditures invested in the
20 construction of the project by the Company during the Reporting Period. In addition, in
21 the Eighth VCM Report, the Company is proposing a revision in the project schedule and
22 budget to reflect a revised construction schedule and the associated extension costs, and
23 to reflect a total projected capital cost of \$4.8 billion.

24

25

II. GENERAL OVERVIEW

1

2 **Q. BRIEFLY, WHAT IS THE CURRENT STATUS OF THE PROJECT?**

3 **A.** As discussed more fully herein, the Facility continues to be well managed, and, with
4 engineering, procurement and construction of the Facility approximately fifty percent
5 complete based on contractual milestones, is progressing toward our goal of providing a
6 safe, reliable, clean and cost-effective source of electricity. The cumulative capital costs
7 for the Facility through this reporting period total \$2.21 billion. These investments were
8 prudently incurred in compliance with the original and previously amended Certificate.
9 These costs reflect significant progress in the nearly four year period since the Facility's
10 original certification.

11 The Company's revised capital forecast, at \$4.8 billion, is \$381 million more than the
12 forecast in the current Certificate. Costs for actual engineering, procurement, and
13 construction of the main power block and support structures (i.e. bricks and mortar)
14 remain stable and represent a less than 1 percent increase in the certified capital costs.
15 Changes in the capital cost forecast also include known and expected costs to implement
16 Nuclear Regulatory Commission ("NRC") regulatory changes, increased taxes, costs
17 necessary for operational readiness, quality and compliance during construction,
18 transmission costs, and legal and environmental permitting costs. Many of these costs are
19 driven by the construction schedule extension to fourth quarter 2017 and fourth quarter
20 2018 for Units 3 and 4, respectively.

21 **Q. DO THE BENEFITS TO CUSTOMERS OF COMPLETING THE VOGTLE**
22 **UNITS 3 AND 4 NUCLEAR FACILITIES REMAIN POSITIVE?**

23 **A.** Yes. As discussed more fully in Section V below, the benefits to customers of completing
24 the Facility remain positive. Economic analyses by Georgia Power continue to
25 demonstrate that completing this Facility represents the best cost option for our customers
26 by an overwhelming margin. Similar analyses by the Staff of the Commission through the

1 Seventh VCM Report have also demonstrated that completing the Facility represents the
2 best cost option for our customers.

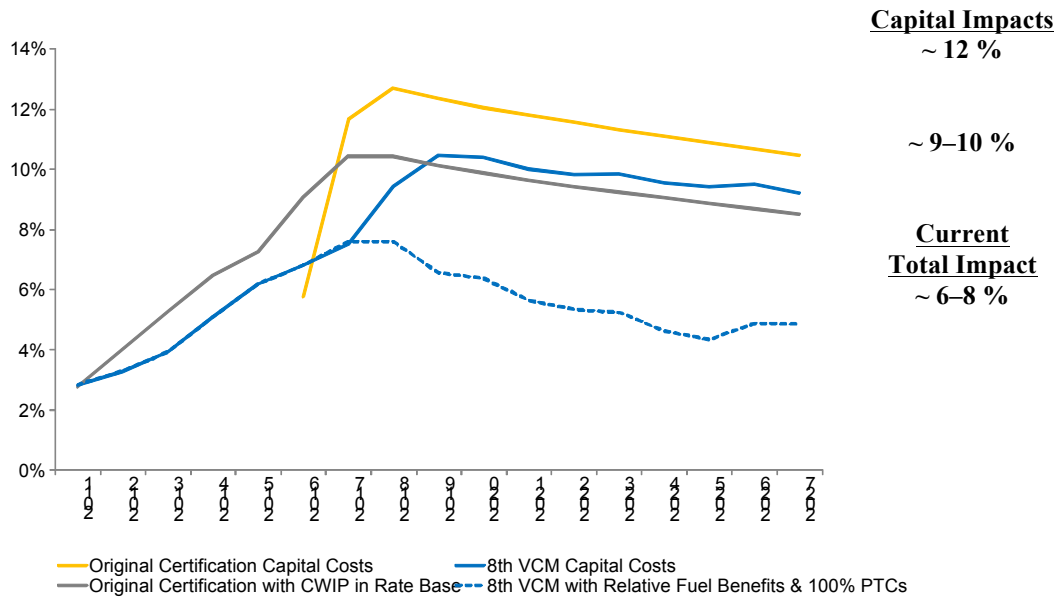
3 **Q. IS THE NEW CAPITAL CONSTRUCTION COST FORECAST REASONABLE**
4 **AND PRUDENT, AND SHOULD THE CERTIFICATE BE AMENDED TO**
5 **REFLECT THAT NEW FORECAST?**

6 **A.** Yes. In 2009, this Commission selected and certified this Facility as the most cost-
7 effective resource to provide long term savings and value for our customers. As of the
8 Eighth VCM Report, the Facility remains the most cost-effective resource and will result
9 in significant long-term customer savings and value. Including the additional requested
10 capital costs, the Facility remains the most cost-effective option by a wide margin. Under
11 our current schedule assumptions, the Facility will bring approximately \$4 billion more
12 value to customers when it is completed as compared to alternative generation available
13 today, as further described in Section V of our testimony below.

14 **Q. WHAT IS THE EXPECTED RATE IMPACT ON CUSTOMERS AS A RESULT**
15 **OF THE NEW UNITS BECOMING COMMERCIAL?**

16 **A.** When the Facility was originally certified as the most cost-effective resource for our
17 customers, the Facility's capital cost was expected to raise customers' bills by
18 approximately 12 percent without construction work in progress ("CWIP") in rate base,
19 and 9-10 percent with CWIP in rate base. Our current projection is that the total
20 customer rate impact of the Facility in the first several years of its operations will be
21 approximately 6-8 percent. The projected cumulative rate impacts are shown in Figure A
22 below.

1 **Figure A - Projected Cumulative Rate Impacts**



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3 This estimate takes into consideration CWIP in rate base treatment, the full impact of the
 4 revisions to the forecasted construction schedule and capital cost described in this Eighth
 5 VCM report, the effects of the lower cost of nuclear fuel compared to other forms of
 6 generation, and the positive benefits of the production tax credits to be provided by the
 7 Federal government for the first eight years of the Facility’s operation.

8 The current expected total rate impact on customers is less than 8 percent in the first full
 9 year of operation for both units, declines to under 6 percent after ten years, and continues
 10 to decline throughout the life of the Facility. Extending the construction schedule to the
 11 fourth quarter of 2017 and 2018 does not meaningfully change the expected customer
 12 rate impact.

13 **Q. IS IT TRUE THAT THE “REAL CONSTRUCTION COSTS” REMAIN STABLE**
 14 **AND REPRESENT A LESS THAN ONE PERCENT INCREASE IN THE**
 15 **CERTIFIED CAPITAL COSTS?**

1 A. Yes, that is true. Real construction costs remain essentially unchanged. The vast majority
2 of ‘bricks and mortar’ costs for equipment, commodities, contractor labor, and
3 installation are controlled by the fixed and firm contract for the project. This is notable
4 given that design engineering is approximately 96 percent complete, procurement of
5 critical components is essentially complete, and overall construction on the Facility is
6 approximately fifty percent complete based on contractual milestones. In parallel with
7 construction, the Company is coordinating an extensive effort to prepare for start-up and
8 commercial operation. Requested changes to the certified cost are outlined in the table on
9 page 2 of the Eighth VCM Report.

10 Q. IS IT TRUE THAT THE COSTS RELATED TO THE EXTENDED
11 CONSTRUCTION SCHEDULE ARE OFFSET BY LOWER SPENDING LEVELS
12 AND LOWER INTEREST RATES?

13 A. Yes, that is also true. Lower spending levels in the early construction years and a slower
14 rate of spending increase, as well as lower interest rates than originally projected offset
15 the related extension of the Nuclear Construction Cost Recovery (“NCCR”) tariff
16 collection period.

17 Q. ARE THESE COST INCREASES NECESSARY, AND WHAT IS DRIVING
18 THEM?

19 A. Yes, these costs are necessary. The increased construction costs include schedule changes
20 associated with the time required to obtain NRC approval of the plant design, the
21 translation of the certified design into approved construction drawings, and the rate of
22 production of certain structures comprising the nuclear island. All of the additional costs
23 are based on the Owners’ reasonable and prudent budgets, which reflect our best
24 projections based on progress over the past 48 months of engineering, procurement and
25 construction for the Facility. Commercial responsibility for the extended schedule
26 remains in dispute, and the Engineering, Procurement and Construction (“EPC”)

1 Agreement contemplates a construction duration that is shorter than that reflected in the
2 extension to fourth quarter 2017 and 2018. The Company continues to engage with
3 Westinghouse Electric Company and Chicago Bridge & Iron (collectively, the
4 “Contractor”) to determine whether a shorter construction duration is possible while
5 continuing to allow for the time required to satisfy the rigorous nuclear safety standards
6 applicable to this “first of a kind” endeavor. If a shorter construction schedule is
7 implemented, it will be accomplished in a manner that will ensure our commitment to
8 safety, quality and compliance.

9 **Q. WHAT INCREASED COSTS WILL THE COMPANY AGREE TO PAY?**

10 **A.** The Company will only pay costs that are reasonable and prudent Owners’ costs,
11 payments required under the terms and conditions of the EPC Agreement, including
12 change orders as provided to be paid under that EPC Agreement, and costs that represent
13 a reasonable compromise of disputes if such are in the best interests of the Facility and
14 our customers.

15 All of our actual expenditures, whether forecasted or not, are subject to verification and
16 approval by the Commission. Only prudently incurred costs will be put into rates when
17 the Facility goes into service. In that way, the Commission itself and its regulatory
18 process, including these VCM proceedings, act to limit the cost of the Facility to only
19 prudently incurred costs, and to ensure that it maximizes the life cycle value to our
20 customers.

21 In seeking to amend the certified construction budget, we ask only that the Commission
22 find that the revisions support a reasonable and prudent forecast. We recognize that all
23 amounts actually spent pursuant to the certified cost remain subject to approval and
24 verification during the VCM semi-annual process, just as the Company is seeking to have
25 verified and approved the \$209 million spent during the Eighth VCM period.

1 **Q. SHOULD THE COMMISSION AMEND THE CERTIFIED CAPITAL**
2 **CONSTRUCTION COST AND APPROVE AND VERIFY ACTUAL**
3 **EXPENDITURES MADE DURING THE REPORTING PERIOD?**

4 **A.** Yes. Through the close of the Eighth VCM reporting period, the Company has invested
5 \$2.21 billion in the Facility. From July 1, 2012 through December 31, 2012, we have
6 made \$209 million in investments, and reached several significant milestones. Evidence
7 of this progress is depicted in the pictures included in the Progress Photographs section of
8 the Eighth VCM Report and then discussed in more detail in the Status of the Facility
9 section. The total investment to date includes payments made to Contractor pursuant to
10 the EPC Agreement for the design engineers who have worked both at the site and at
11 remote locations, and the craft labor at the site for commodities such as piping, concrete,
12 cable and steel. It includes payments to vendors worldwide that are constructing and
13 assembling the many components that will be sent to the site for installation as well as
14 payments made to Southern Company affiliates for work performed in support of the
15 Facility, including quality assurance and compliance. These investments were all prudent
16 and made in accordance with the EPC Agreement and principles of sound project
17 management. The Company requests that these costs be verified and approved.

18 **Q. IS THE FACILITY AN IMPORTANT INVESTMENT IN GEORGIA'S**
19 **CRITICAL ENERGY INFRASTRUCTURE?**

20 **A.** Yes. The design and construction of the Facility is a massive undertaking by any
21 measure. It is one of the largest and most capital-intensive infrastructure projects
22 currently underway in the United States. Over 5,000 jobs are being created, with more
23 than 2,200 workers on the Vogtle site. The Facility has increased the tax base of Burke
24 County as well as the state of Georgia and will continue to do so by creating over 800
25 full-time, highly skilled and highly paid careers, which will have a compounding effect
26 on the local economy. Georgia's electric generation will continue to have a diverse fuel
27 supply, helping to ensure that prices remain stable and competitive for many decades to

1 come, thus providing the foundation for a strong and vibrant economy. As capital
2 intensive as this project is, completing it still represents net savings of approximately \$4
3 billion for our customers compared to the next best alternative over the life of the
4 Facility.

5 **III. FACILITY INVESTMENT OVERVIEW**

6 **Q. DOES THE FACILITY REMAIN THE MOST ECONOMIC CHOICE FOR**
7 **CUSTOMERS?**

8 **A.** Yes. For purposes of this reporting period, the Company reports against a certified
9 construction and capital cost of \$4.418 billion. With a current construction and capital
10 cost forecast of \$4.799 billion, the Facility remains the most economic choice for
11 customers with approximately \$4 billion of revenue requirements margin before the next
12 best fuel alternative becomes more economic (as discussed in the Economic Assessment
13 portion of our testimony below). The current cost and forecast reports are provided in
14 Tables 1.1 and 1.1a of the Eighth VCM Report.

15 **Q. PLEASE DISCUSS THE PROJECTED CAPITAL CONSTRUCTION COST AS**
16 **IT RELATES TO THE CERTIFIED COST.**

17 **A.** Because we are committed to building the safest, most technologically advanced, and
18 most cost-effective nuclear energy facility, cost projections will vary up and down
19 throughout the construction period. In the Second through Seventh VCM proceedings,
20 while the projected capital construction amount changed from report to report, the
21 certified capital construction amount did not. The projected capital construction amount
22 is the most current projection of capital construction costs based upon the most current
23 assumptions such as schedule, scope, and escalation rates. The certified cost is the
24 amount that the Commission has determined will be allowed to be included in rate base,
25 assuming it is invested prudently. The regulatory framework under which this Facility is
26 being built clearly provides that the certified amount may change from time to time. The

1 certified amount is intended to reflect the presumed prudent investment at a particular
2 point in time, not to act as a permanently fixed or capped amount regardless of how the
3 assumptions upon which it was based change over time or regardless of the actual
4 prudent investment.

5 **Q. WHAT IS THE COMPANY'S PRIMARY CONSIDERATION REGARDING**
6 **SCHEDULE AND COST CHANGES?**

7 **A.** The original projected capital construction cost and related value to customers was based
8 on a projected schedule to complete the "first-of-a-kind" licensing. Our foremost focus
9 during construction is on safety and quality. The NRC licensing of this technology was a
10 great success for this project and this state. The limited additional time required to
11 achieve this "first-of-a-kind" license, and the additional time it may take to construct this
12 Facility with the commitment to safety and quality our customers deserve, does not
13 diminish the value to our customers. We will make decisions regarding schedule and cost
14 that support and maintain our commitment to safety and quality in design and
15 construction as our highest and uncompromising priority.

16 **Q. PLEASE DISCUSS HOW THE STRUCTURE OF THE EPC AGREEMENT**
17 **OPERATES TO PROTECT CUSTOMERS FROM INCREASED**
18 **CONSTRUCTION COSTS.**

19 **A.** As previously stated, the vast majority of the "bricks and mortar" costs for equipment,
20 commodities, contractor labor, and installation are controlled by the fixed and firm EPC
21 Agreement for the project. There are some support buildings outside of the scope of the
22 EPC Agreement that are also the responsibility of the Owners and represent a small
23 portion of these costs.

24 The EPC Agreement is a contract under which the Contractor is responsible for the
25 design of the Facility, the procurement and purchase of all the required materials and
26 equipment, and furnishing the labor workforce and management required to construct the

1 Facility. As a result of Amendment No. 3 to the EPC Agreement, essentially 100 percent
2 of the EPC costs are either fixed or firm. By shifting more of the EPC costs from market-
3 based indices to fixed escalators, the Company was able to reduce uncertainty and risk
4 for our customers.

5 This structure of the EPC Agreement effectively insulates our customers from many cost
6 increases that might otherwise have arisen on a project of this size. Customers are
7 isolated from typical project risks, such as commodity price changes, commodity quantity
8 estimates, craft availability and productivity of the labor force. The Contractor has taken
9 the risk for procurement and timely delivery of materials, assembly of modules and
10 design to construction interfaces, which are the risks that are most likely to affect the cost
11 of a major project.

12 The original scope of the EPC Agreement covers the primary obligations of the
13 Contractor (i.e., the Contractor's obligation to design, procure, engineer, permit,
14 construct, assemble, install, test and complete the Facility). These costs represent the
15 construction cost (base cost plus agreed to escalation), exclusive of financing costs. The
16 cost for that original scope was set at approximately \$3.8 billion (Georgia Power's share),
17 and includes the price of fixed semi-annual escalation, indexed escalation and other fixed
18 escalations.

19 **Q. PLEASE DISCUSS THE RISK THAT THE OWNERS TAKE FOR INCREASED**
20 **CONSTRUCTION COSTS.**

21 **A.** The structure of the EPC Agreement provides that the Contractor takes the price risk on
22 the original scope of work, and Owners take the risk of changes to the scope driven by
23 specified events. The specified compensable change orders are those resulting from (a)
24 certain specified changes in law or additional requirements imposed on the design of the
25 Facility in the combined construction and operating licenses ("COLs"), (b) agreement by
26 the Owners and Contractor, or (c) Owner-directed changes, or (d) licensing delays not

1 caused by delays in the certification of the plant design by the NRC. In those specified
2 situations, Owners are required to compensate the Contractor for costs incurred if the
3 Contractor is required to perform more work and the work cost more or took longer to do.
4 However, in all other situations in which particular work under the EPC Agreement costs
5 more or takes longer than was contemplated, the Contractor assumed all risk of cost
6 increases and the Owners have no obligation to compensate the Contractor for those
7 additional costs.

8 **Q. WHAT CHANGES HAVE RESULTED IN NEW OWNERS' COSTS?**

9 **A.** There are several issues discussed in the Eighth VCM Report that reflect additional costs
10 for the Owners. These are costs that are the responsibility of the Owner and not covered
11 under the EPC Agreement. For example, changes in NRC regulations have resulted in
12 additional work that is the responsibility of the Owners. Changes to requirements for both
13 physical and cyber security, the Fitness for Duty program, and to address lessons learned
14 from Fukushima drive a portion of the capital cost increase. Also, the Transportation
15 Special Local Option Sales Tax implemented by the Central Savannah Region in Georgia
16 results in a small increase in the sales tax forecast for the Facility. The forecast of ad
17 valorem taxes has also increased as a result of the extension of the assumed construction
18 schedule to fourth quarter 2017 and 2018 for Units 3 and 4, respectively.

19 As the Owners prepare for startup and commercial operations, additional costs have been
20 identified that are necessary for an efficient transition from construction. Cost changes
21 include additional equipment, hardware and software required for plant operations as well
22 as an observation program at the China AP1000 sites.

23 In addition to payments to the Contractor, there are also Quality Assurance and
24 Compliance costs to complete the Owners' scope of work, and to oversee the Contractor.
25 A large portion of the change in forecasted Owners' costs is the cost (primarily labor)

1 associated with extending the commercial operation dates to the fourth quarter 2017 and
2 2018 for Units 3 and 4, respectively.

3 **Q. IF THE CONTRACTOR IS OBLIGATED UNDER THE EPC AGREEMENT TO**
4 **COMPLY WITH THE NRC'S SAFETY AND QUALITY REQUIREMENTS,**
5 **WHY ARE THERE OWNERS' COSTS ASSOCIATED WITH INCREASED**
6 **OVERSIGHT?**

7 **A.** Notwithstanding the Contractor's contractual obligation under the EPC Agreement to
8 comply with regulatory requirements that assure safety and quality of construction, the
9 ultimate responsibility for ensuring compliance with NRC requirements and the safety of
10 the Facility is on SNC as the NRC licensee. The Owners take this obligation very
11 seriously and the NRC enforces it under its regulations. While the NRC has supported the
12 Facility construction schedule needs, the degree of licensee oversight necessary to assure
13 EPC Contractor, subcontractor and vendor compliance with regulatory requirements is
14 greater than expected at the time of project certification. Accordingly, certain costs are
15 being driven by oversight efforts required of SNC, as the licensee, to ensure compliance
16 by the Contractor with regulatory requirements. Ensuring quality on the front-end will
17 also benefit our customers economically over the life of the Facility. Moreover, as with
18 any major construction project, particularly a nuclear project, design changes and license
19 amendments become necessary from time to time. This is particularly true for the first
20 time a new process and design, such as 10 CFP Part 52 and AP1000, respectively, are put
21 into practice. The anticipation of increased costs related to this new process, has been
22 consistently acknowledged by the Company.

23 **Q. ARE THERE OTHER OWNERS' COSTS REFLECTED IN THE EIGHTH VCM**
24 **REPORT?**

25 **A.** Additional cost changes are pending and expected as development of other new
26 regulatory processes including Inspections, Tests, Analyses, and Acceptance Criteria
27 (ITAAC) and the Construction Reactor Oversight Process is finalized. The Company's

1 diligence in overseeing the Contractor through implementation of these processes is
2 critical. Cost increases associated with the Company's compliance efforts, while not
3 unexpected, are becoming a reality.

4 Furthermore, the capital cost also reflects an increase in the Company transmission
5 forecast to make additional modifications to the existing switchyards, add breakers
6 between the existing and new switchyards and install station service power to the new
7 500kV switchyard. Also, the cost forecasts for legal fees and environmental permitting
8 have increased slightly, partially as a result of the extended construction schedule.

9 **Q. WHAT ABOUT ADDITIONAL OWNERS' COSTS RELATED TO THE**
10 **CURRENT DISPUTE BETWEEN THE CONTRACTORS AND THE OWNERS?**

11 **A.** In July 2012, the Owners and the Contractor began negotiations regarding the costs
12 associated with design changes to the design control document ("DCD") and the delays
13 in the timing of approval of the DCD and issuance of the COLs, including the assertion
14 by the Contractor that the Owners are responsible for these costs under the terms of the
15 EPC Agreement. The Contractor has claimed that its estimated adjustment attributable to
16 the Company (based on the Company's ownership interest) is approximately \$425
17 million (in 2008 dollars) with respect to these issues. The Contractor also has asserted it
18 is entitled to further schedule extensions. The Company has not agreed with either the
19 proposed cost or schedule adjustments, nor that the Owners have any responsibility for
20 costs related to these issues. On November 1, 2012, the Company and the other Owners
21 filed suit against the Contractor in the U.S. District Court for the Southern District of
22 Georgia seeking a declaratory judgment that the Owners are not responsible for these
23 costs. Also on November 1, 2012, the Contractor filed suit against the Company and the
24 other Owners in the U.S. District Court for the District of Columbia alleging the Owners
25 are responsible for these costs. While litigation has commenced and the Company intends
26 to vigorously defend its positions, the Company expects negotiations with the Contractor

1 to continue with respect to cost and schedule during which negotiations the parties may
2 reach a mutually acceptable agreement for resolution of their differences.

3 **Q. ARE THESE DISPUTE-RELATED COSTS INCLUDED IN THE COST**
4 **PROJECTIONS REPORTED IN THE COMPANY'S EIGHTH VCM REPORT?**

5 **A.** No. We have made no provision in the cost projections included in the Eighth VCM
6 Report for any assumed settlement of the Contractor's claims that are currently subject to
7 litigation in the federal courts. As we have stated in prior VCM proceedings, if and when
8 any settlement of those claims takes place, we will separately present that proposed
9 settlement to the Commission for approval.

10 **Q. PLEASE DESCRIBE THE PREVIOUS AMENDMENT TO THE CERTIFICATE,**
11 **WHICH LOWERED THE CERTIFIED COST AS A RESULT OF CWIP IN**
12 **RATEBASE.**

13 **A.** In the First VCM Proceeding, the Commission actually reduced the certified amount
14 from the original \$6.446 billion to \$4.418 billion. This reduction was possible because
15 the Georgia Nuclear Energy Financing Act and the Commission's Certification Order
16 approved the inclusion of CWIP in rate base during the Facility's construction period,
17 rather than capitalizing an allowance for funds used during construction and including
18 \$6.446 billion in rate base at the time the Facility went into commercial service. This
19 treatment also reduced the amount of financing costs projected to be incurred during the
20 Facility's construction period by about \$330 million.

21 **Q. WHY ARE FINANCING COSTS EXCLUDED FROM THE CERTIFIED COST**
22 **AFTER THE PASSAGE OF THE NUCLEAR ENERGY FINANCING ACT?**

23 **A.** We are not lawyers, but we have been advised by our counsel that the Georgia
24 Certification Statute provides that the Commission's certification deals with those costs
25 that "the utility seeks to add to its rate base upon completion of the plant construction."

1 In this docket, the certified costs are those that the Company will add to ratebase when
2 construction is completed, or the currently certified \$4.418 billion – now requested to
3 increase to \$4.799 billion – of construction costs. With the adoption of the Nuclear
4 Energy Financing Act, the certified costs no longer include financing costs during
5 construction. Those costs are dealt with in the NCCR tariff process where the
6 Commission reviews the related financing costs and ensures they are calculated
7 appropriately based on the capital construction costs verified and approved in VCM
8 proceedings.

9 **Q. IS IT YOUR TESTIMONY THAT THE AMOUNTS COLLECTED UNDER THE**
10 **NCCR TARIFF ARE NOT FACILITY INVESTMENT COSTS?**

11 **A.** Yes. The amounts collected under the NCCR tariff are not Facility investment costs.
12 They are the carrying costs (financing costs) on the investment during the construction
13 period.

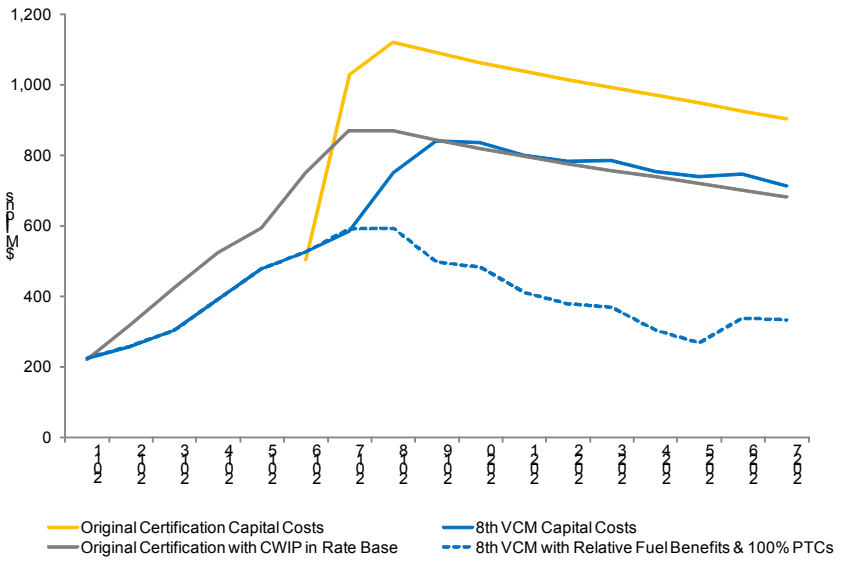
14 **Q. DOES THE INCREASE IN THE FORECASTED CAPITAL COST AND**
15 **EXTENDED CONSTRUCTION SCHEDULE NECESSARILY INCREASE**
16 **COSTS TO CUSTOMERS?**

17 **A.** No. We know that the increase in the forecasted capital cost and the extended
18 construction schedule has not increased the 2016 present value cost to customers
19 projected at Certification. While it is true that our capital costs will increase by as much
20 as \$381 million and the NCCR tariff will be collecting the related construction financing
21 costs for a longer period, spending in the early years of construction and interest rates
22 have been less than originally projected. As a result, the NCCR tariff collections during
23 these years also have been less than originally anticipated, and a slower rate of increase is
24 projected. Indeed, one indirect benefit of including CWIP in rate base and collecting
25 financing costs on a “pay as you go” basis is that an extended implementation schedule
26 does not necessarily increase costs to customers on a present value basis.

1 **Q. WITH THE NCCR TARIFF IN PLACE, WHAT IMPACT WILL THE DELAY**
 2 **HAVE ON CUSTOMER’S RATES ONCE THE NEW UNITS GO INTO**
 3 **SERVICE?**

4 **A.** First of all, to provide a comparison to the \$6.113 billion, which represents the
 5 investment (capital construction cost) and the aggregate amounts collected under the
 6 NCCR tariff to finance the investment during construction, we now project \$6.850 billion
 7 as the comparable number to the \$6.113 billion. Once the units go into commercial
 8 service, the carrying costs of the Facility investment will be included in the Company’s
 9 revenue requirements and collected through base rates (see Figure B below). Stated
 10 another way, financing costs do not stop when the plant goes into service, so were it not
 11 for the NCCR tariff, the typical residential customer’s bill would have risen
 12 approximately 6 percent when Unit 3 went into service and approximately 6 percent the
 13 following year when Unit 4 went into service (as shown on Figure A above. With the
 14 NCCR tariff in place, customers’ rates will remain largely unchanged when the units are
 15 placed into service, even though that occurs later than originally planned.

16 **Figure B – Projected Revenue Requirements**



17

1 **IV. STATUS OF THE FACILITY**

2 **Q. WHAT IS THE STATUS OF CONSTRUCTION OF FACILITY?**

3 **A.** Significant progress has occurred in construction, engineering and procurement for the
4 Facility during the reporting period. Construction has gone vertical and work in all major
5 areas continues for both Units 3 and 4, including the nuclear island foundation work,
6 assembly of the containment vessel, turbine island activities, cooling tower erection, raw
7 water intake structure preparation, and switchyard modifications. In October 2012, the
8 Facility reached a major milestone of 10 million work hours on the construction site
9 without a life-altering injury.

10 **Q. PLEASE DESCRIBE THE CURRENT CONSTRUCTION ACTIVITIES.**

11 **A.** Major construction activities continue to progress well at the site. In the Unit 3 nuclear
12 island, First Nuclear Concrete placement was completed on March 14, 2013 and will
13 serve as the foundation for the nuclear island structures, including the containment vessel
14 and the shield building. On April 11, 2013, the CR10 module became the first major
15 module to be placed into the Unit 3 nuclear island and serves as the cradle upon which
16 the containment vessel bottom head has been set. Subsequently on June 1, 2013,
17 Containment Vessel Bottom Head was lifted and placed into the nuclear island. These
18 significant milestones were executed successfully and mark substantial progress in
19 safety-related construction activities. The mud mat and waterproofing for the Unit 4
20 nuclear island basemat has been successfully completed, which allows for the
21 commencement of rebar installation. Outside of the nuclear islands, construction
22 activities continue to advance on schedule such as foundation work for the turbine
23 buildings, erection of the cooling towers for Units 3 and 4, preparation for the raw water
24 intake structure, as well as modifications to existing switchyards and new transmission
25 installation.

1 **Q. PLEASE DESCRIBE THE CURRENT ENGINEERING ACTIVITIES.**

2 **A.** Contractor engineering activities supporting “Design Finalization,” which is the scope of
3 work that concludes with initial issuance of documents to support procurement and
4 construction activities, are estimated to be approximately 96 percent complete. While
5 some document deliveries have not fully met the established delivery schedule, the
6 Contractor reports that the schedule for issuance of remaining Certified for Construction
7 (CFC) documents supports downstream procurement and construction activities.

8 A number of efforts are under way by the Company and Contractor to identify and
9 correct any deficiencies in design documentation. Comparisons of design documents to
10 the Vogtle Units 3 and 4 licensing basis as well as to design codes have proven useful in
11 identifying engineering issues that needed additional clarity and reducing impacts to the
12 construction schedule. Detailed design reviews similar to those conducted to support First
13 Nuclear Concrete placemat in the nuclear island are also continuing for the nuclear island
14 wall sections and are producing valuable clarifications to ensure strict code and licensing
15 basis. Additionally, on-going focused design assessments are being conducted on selected
16 systems, components and processes to ensure compliance with design and licensing basis
17 requirements. The objective is to reduce the risk of undetected latent design issues that
18 could potentially impact plant safety, reliability, construction or the project schedule.

19 **Q. WHAT IS THE STATUS OF PROCUREMENT?**

20 **A.** The fabrication and delivery of major equipment continues with no adverse impact to
21 construction activities. The fabrication of both Unit 3 core make-up tanks and both Unit
22 3 accumulator tanks has been completed at Mangiarotti. Additionally, fabrication
23 activities for the passive residual heat removal heat exchanger and pressurizer continue
24 and these major components are expected to be delivered to the site later this year. At
25 Doosan, hydrostatic testing for Units 3A and 3B steam generators have concluded, and
26 the Unit 3 reactor vessel along with the reactor vessel head have arrived on site. Other
27 significant component deliveries to the Vogtle Units 3 and 4 site include the Unit 3

1 deaerator, new and spent fuel storage racks, reactor coolant loop piping, as well as Unit 3
2 turbine and main generator components.

3 Structural module fabrication and delivery continues to be a focus of Contractor and
4 Company management attention. The Contractor and Company have implemented a joint
5 inspection process under which the Company provides real-time oversight of source
6 inspections and documentation package reviews at the Lake Charles Facility prior to sub-
7 module shipment to the Vogtle site. Due to joint inspection results, the Contractor has
8 made measured progress in sub-module shipments. Upon delivery to the site, the sub-
9 modules are undergoing necessary repair work prior to being released for further
10 assembly in the Module Assembly Building. The Company continues to closely monitor
11 module fabrication, repair and assembly work, and the Company remains focused on
12 assessing associated potential impacts to the construction schedule.

13 **Q. PLEASE DESCRIBE THE COMPANY'S CURRENT EFFORT TO PREPARE**
14 **FOR PRE-OPERATIONAL AND START-UP TESTING FOR COMMERCIAL**
15 **OPERATION.**

16 **A.** The Company is building the operational organization with personnel from diverse
17 backgrounds. An accredited training program has been established for licensed plant
18 operator candidates and there are currently 101 candidates in different phases of that
19 program. These candidates are taking part in rigorous classroom and simulator training
20 and will be examined by the NRC to obtain their operator licenses. Operations and
21 engineering personnel have been hired per the staffing plan and are enrolled in
22 comprehensive training programs. Approximately 25 percent of the required programs
23 that govern testing and maintenance of major components have been developed in
24 accordance with the schedule. Thousands of operations and maintenance ("O&M")
25 procedures are currently being developed by both the Contractor and the Company for
26 testing and operations. When possible, existing procedures from the operating fleet are
27 being adopted. The operational readiness organization is preparing to support the initial

1 testing phase of the Facility. Testing procedures are being developed and divisions of
2 responsibilities are being defined for the Contractor and Company. Collaborative efforts
3 are underway to ensure a smooth transition from a construction site to an operational site
4 with no adverse impacts to the existing Units 1 and 2 and the new Units 3 and 4.
5 Preparations for integration into a shared site include, but are not limited to, coordination
6 of physical security changes and emergency planning procedures in order to remain
7 compliant with all NRC regulations and requirements.

8 **V. CUSTOMER BENEFITS**

9 **Q. HAVE THE PROJECTED CUSTOMER BENEFITS CHANGED SINCE THE** 10 **SEVENTH VCM REPORT?**

11 **A.** Consistent with prior VCM reports, the Company continues to report the projected 2016
12 value of approximately \$2.0 billion related to certain other customer benefits resulting
13 from activities associated with Vogtle Units 3 and 4. Approximately \$0.5 billion of these
14 customer benefits are associated with the inclusion of CWIP in rate base, as authorized
15 by the Georgia Nuclear Energy Financing Act and the Commission, and the effectiveness
16 of Amendment No. 3 to the EPC Agreement, as approved by the Commission. The
17 impact of these customer benefits is incorporated in the Company's construction capital
18 forecast as previously discussed.

19 In addition to these \$0.5 billion of benefits that directly impact the Facility's construction
20 capital, there are also other customer benefits totaling approximately \$1.5 billion related
21 to the Facility outside of the construction capital calculation. These customer benefits are
22 the product of the Company's effective utilization of federal government nuclear
23 incentives and its proactive financing strategy to take advantage of historically low
24 interest rates. These additional customer benefits are also passed along to customers,
25 thereby increasing the overall value of the Facility to customers.

26

1 **Q. PLEASE DISCUSS THE PRODUCTION TAX CREDITS.**

2 **A.** The Energy Policy Act of 2005 provides Production Tax Credits (“PTCs”) for companies
3 that begin construction on new nuclear reactors by 2014 and bring them into service by
4 2021. The benefit of the PTCs is provided to customers through a reduction in revenue
5 requirements over an eight year period following the in-service date for each unit. To
6 recognize the uncertainty in the underlying assumptions behind the PTC calculations,
7 only 50 percent of the expected tax credits are assumed in the Company’s economic
8 evaluation, discussed in Item 14 of the Company’s Eighth VCM Report.

9 **Q. PLEASE DISCUSS THE INTEREST SAVINGS.**

10 **A.** These are debt cost savings that result from lower interest rates contained in the
11 Company’s current and projected cost of capital versus the rates assumed during the
12 original certification proceedings. Interest savings lower financing costs on all Company
13 investments, including the Facility. The majority of these interest savings, approximately
14 \$600 million, have already been put into place through debt issuances made through this
15 Eighth VCM reporting period. Also included are potential annual interest cost savings
16 from the Department of Energy (“DOE”) loan guarantee. Current market rates are below
17 current forecasted rates, so the ultimate savings could be even greater than currently
18 expected. These savings are being passed on to customers through lower revenue
19 requirements during the Facility’s construction period (as reflected in the NCCR tariff
20 projections), as well as during its operating life.

21 **Q. WHAT IS THE STATUS OF THE COMPANY’S LOAN GUARANTEE**
22 **APPLICATION?**

23 **A.** The Company remains engaged with the DOE in negotiation of definitive agreements,
24 completion of due diligence by the DOE, and receipt of any necessary regulatory
25 approvals or conditions as defined in the definitive agreements. In the event that DOE
26 does not issue a loan guarantee, Congress takes action to rescind the DOE Loan Program,

1 or the Company determines that the final terms and conditions of the loan guarantees by
2 the DOE are not in the best interest of its customers, the Company expects to finance the
3 construction of the Facility through more traditional means such as security issuances and
4 term loans.

5 **VI. ECONOMIC ANALYSIS**

6 **Q. DURING THE REPORTING PERIOD, DID THE ECONOMIC ANALYSIS**
7 **SHOW THAT THE FACILITY REMAINS BENEFICIAL FOR CUSTOMERS?**

8 **A.** Yes. The Company's economic analysis continues to indicate that the Facility remains
9 economically beneficial for our customers as compared with another generation solution.
10 While the Company's methodologies and assumptions utilized in its economic analyses
11 differ from those of Staff Witness, Phil Hayet, Mr. Hayet's own analyses has consistently
12 shown that the project can incur significant capital cost increases before it would become
13 uneconomic for customers.

14 **Q. WHAT ARE THE UNDERLYING PLANNING ASSUMPTIONS IN THE**
15 **EIGHTH VCM REPORT?**

16 **A.** The economic evaluation presented in the Eighth VCM Report includes updates of all
17 major underlying planning assumptions including fuel forecasts, load forecasts, and new
18 generation technology costs. Consistent with the original certification filing and all
19 previous VCM reports, a range of planning scenarios was used to evaluate the possible
20 impacts of varying fuel prices and carbon costs. Three possible fuel price forecasts were
21 used along with three possible carbon cost scenarios. The fuel forecasts are based on the
22 Company's 2013 fuel forecasts. The carbon cost scenarios are: "Existing" (\$0),
23 "Moderate" (\$10, beginning in 2017 and escalated), and "Substantial" (\$20, beginning in
24 2020 and escalated).

1 **Q. HAS THE COMPANY UPDATED THE COST TO COMPLETE AND THE IN-**
2 **SERVICE DATES OF THE FACILITY?**

3 **A.** Yes. The estimate of the capital cost to complete and the in-service dates of the Facility
4 have been updated from the Seventh VCM Report along with pre-commercial operation
5 date (“COD”) Operations and Maintenance, post-COD O&M for the Facility, projected
6 post-COD ongoing capital additions, and nuclear fuel. The in-service dates of the gas-
7 fired combined cycle (“CC”) units have been updated from the Seventh VCM Report to
8 be consistent with the revised in-service dates of the Facility. Decommissioning costs,
9 spent fuel storage cost estimates, and the assumed operating characteristics of the Facility
10 have not changed. The long-term marginal financing rates for debt and preferred stock
11 have not been changed since the Seventh VCM Report. It should be noted that these
12 marginal financing costs are higher than the current estimate of embedded average
13 financing costs, which are used in all other references to financing costs in the Eighth
14 VCM Report. Consistent with the Seventh VCM Report, the current economic evaluation
15 assumes 50 percent of potentially available PTCs and the economic analysis continues to
16 exclude the expected benefits of the DOE loan guarantee even though the Company
17 expects net savings to customers resulting from the program.

18 **Q. DOES THE ECONOMIC ASSESSMENT CONTINUE TO SHOW POSITIVE**
19 **BENEFITS IN ALL SCENARIOS?**

20 **A.** Yes. The relative economics for the Facility, when compared to the gas-fired CC
21 alternative, vary depending on the assumptions for future fuel prices as well as with the
22 projected carbon costs associated with potential future carbon regulation. Table 14.1 of
23 the Eighth VCM Report shows the difference between the lifetime costs of building,
24 operating, and maintaining the gas-fired CC alternative and the Facility, with positive
25 savings meaning the Facility is less expensive to customers than the gas-fired CC
26 alternative.

1 The weighted average expected value of the relative savings for completion of the
2 Facility as compared to the gas-fired CC alternative is \$4.0 billion based on the results
3 provided in Table 14.1 of the Eighth VCM Report. Alternatively, the results of the
4 updated economic evaluation, which can be expressed in terms of the “breakeven capital
5 cost to complete” (see Table 14.2 of the Eighth VCM Report) shows the results of the
6 breakeven analysis that calculates the maximum capital expenditure that could be spent to
7 complete the Facility and maintain lifetime costs that are equal to the cost of the gas-fired
8 CC alternative. In all of the scenarios, the maximum capital cost to complete the Facility
9 exceeds the Company’s current estimate of the cost to complete the Facility (including
10 marginal construction financing costs) of \$3.4 billion. All nine scenarios show positive
11 benefits to customers for completing and operating the Facility.

12 **Q. PLEASE DESCRIBE THE ADDITIONAL TABLES SHOWN IN THE EIGHTH**
13 **VCM REPORT THAT REFLECT A DELAY OF THE IN-SERVICE DATES BY**
14 **24, 36 AND 48 MONTHS.**

15 **A.** In the Seventh VCM process, the Staff requested, and the Company agreed to provide,
16 scenario studies for comparison purposes to the results provided in Table 14.2 in which
17 the in-service dates are delayed by 24 months, 36 months and 48 months from April 2016
18 and April 2017 for Units 3 and 4, respectively. These scenarios include additional capital
19 costs and financing costs related to the delay scenarios, and the results are provided in
20 Table 14.3, 14.4 and 14.5 of the Eighth VCM Report.

21 **Q. WHAT CONCLUSION CAN BE DRAWN BY THE EVALUATION OF THESE**
22 **DELAY SCENARIOS?**

23 **A.** In summary, all scenario studies, with the one exception of the Low Fuel/Existing CO2
24 in the 48 month delay scenario, indicate that the Facility would remain economic despite
25 the additional costs associated with these different delays. In the delay scenarios, the
26 Facility remains less costly than the next best fuel alternative and will continue to benefit

1 customers. These scenarios do not represent the Company's projection for the ultimate
2 outcome of the project but instead provide context regarding the economic viability of the
3 Facility considering possible delay circumstances.

4 **Q. WHAT OTHER REQUESTS WERE MADE BY STAFF REGARDING**
5 **ADDITIONAL PROJECT INFORMATION AT THE CONCLUSION OF THE**
6 **SEVENTH VCM PROCEEDING?**

7 **A.** The Company has been asked (1) to explain how capital assumptions for delay scenarios
8 in the Seventh VCM proceedings were developed, (2) to provide additional information
9 and analysis regarding project contingency, and (3) to re-perform the comparison of the
10 economics of the project previously performed by the Company in the first six semi-
11 annual proceedings assuming the addition of a 22.5% contingency. That information is
12 being provided in conjunction with this testimony filing.

13 **VII. CONCLUSION**

14 **Q. WHAT IS THE COMPANY REQUESTING AT THIS TIME?**

15 **A.** The Company requests that this Commission verify and approve the construction
16 expenditures incurred during the Eighth VCM reporting period. The Company further
17 requests that the Commission amend the certificate to reflect a revised construction
18 schedule and to reflect Georgia Power's share of the Owners' revised capital construction
19 forecast.

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

21 **A.** Yes.