Combined Application for Certificate of Environmental Compatibility, Public Convenience and Necessity and for a Base Load Review Order for the Construction and Operation on a Nuclear Facility at Jenkinsville, South Carolina

BEFORE THE
PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA

COVER SHEET

DOCKET NUMBER: 2008 - 196 - E

(Please type or print)

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DOCKETING INFORMATION (Check all that apply)

☐ Emergency Relief demanded in petition  ☐ Request for item to be placed on Commission's Agenda expeditiously

☐ Other:

INDUSTRY (Check one)  NATURE OF ACTION (Check all that apply)

☒ Electric  ☐ Request
☒ Electric/Gas  ☐ Request for Certificate
☒ Electric/Telecommunications  ☐ Request for Investigative
☒ Electric/Water  ☐ Resale Agreement
☒ Electric/Water/Telecom.  ☐ Resale Amendment
☒ Electric/Water/Sewer  ☐ Reservation Letter
☐ Gas  ☐ Request
☐ Railroad  ☐ Response
☒ Sewer  ☐ Response to Discovery
☐ Telecommunications  ☐ Return to Petition
☐ Transportation  ☐ Stipulation
☐ Water  ☐ Subpoena
☐ Water/Sewer  ☐ Tariff
☐ Administrative Matter  ☐ Other:
☒ Other:
August 20, 2008

VIA ELECTRONIC MAIL

The Honorable Charles Terreni
Chief Clerk/Administrator
South Carolina Public Service Commission
101 Executive Center Drive (29210)
Post Office Drawer 11649
Columbia, South Carolina 29211


Dear Mr. Terreni:

Enclosed for filing, on behalf of South Carolina Electric & Gas Company, is the direct testimony of Kevin B. Marsh, Dr. Joseph Lynch and Alan D. Torres in the above-docketed matter.

By copy of this letter, we are serving counsel for the South Carolina Office of Regulatory Staff as well as the other parties of record with a copy of the enclosed direct testimony and attach a certificate of service to that effect.

If you have any questions regarding this matter, please advise.

Very truly yours,

K. Chad Burgess

KCB/kms

Enclosures

cc: Shannon Bowyer Hudson, Esquire
    Nanette S. Edwards, Esquire
    Scott Elliott, Esquire
    E. Wade Mullins III, Esquire
    Robert Guild, Esquire
    Joseph Wojcicki
    Meira Warshauer
    Pamela Greenlaw
    (via hand delivery and electronic mail)

Damon E. Xenopoulos, Esquire
(Via hand delivery and overnight delivery)

Lawrence P. Newton
Milred A. McKinley
(Via hand delivery only)
BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA
DOCKET NO. 2008-196-E

IN RE:

Combined Application of South Carolina Electric & Gas Company for a Certificate Of Environmental Compatibility and Public Convenience and Necessity and for a Base Load Review Order for the Construction and Operation of a Nuclear Facility in Jenkinsville, South Carolina

CERTIFICATE OF SERVICE

This is to certify that I have caused to be served this day one (1) copy of the Direct Testimony of Kevin B. Marsh, Alan D. Torres and Dr. Joseph Lynch, filed on behalf of South Carolina Electric & Gas Company, to the persons named below and in the manner described:

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Columbia, South Carolina
This 20th day of August 2008
DIRECT TESTIMONY OF

KEVIN B. MARSH

ON BEHALF OF

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NO. 2008-196-E

(HEARING ON SCE&G’S PETITION FOR AN ORDER PERMITTING
COMMENCEMENT OF CONSTRUCTION ACTIVITIES)

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND
POSITION.

A. My name is Kevin B. Marsh and my business address is 1426 Main
Street, Columbia, South Carolina. I am President and Chief Operating
Officer of South Carolina Electric & Gas Company (“SCE&G” or the
“Company”).

Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
BUSINESS EXPERIENCE.

A. I am a graduate, magna cum laude, of the University of Georgia,
with a Bachelor of Business Administration Degree. Prior to joining
SCE&G, I was employed by the public accounting firm of Deloitte &
Touche. I joined SCE&G in 1984 and have served as Controller, Vice
President of Corporate Planning and, from 1996 to 2006, I served as Senior
Vice President and Chief Financial Officer of SCE&G and SCANA. As
Vice President of Corporate Planning for SCE&G, I oversaw the planning
effort that resulted in construction of SCE&G's Cope Station coal-fired generating plant in 1991-1996. From 2001-2003, while serving as CFO of SCE&G and SCANA, I also served as President and Chief Operating Officer of PSNC Energy. In May of 2006, I was named President and Chief Operating Officer of SCE&G.

Q. **HAVE YOU EVER TESTIFIED BEFORE THIS COMMISSION IN THE PAST?**

A. Yes. I have testified in a number of proceedings, including:

a) The 1986 proceedings to place in rates the last increment of investment subject to the electric capacity phase-in plan that was adopted when V. C. Summer Nuclear Station Unit 1 was placed in service in 1984;

b) The 1991 and 1992 proceedings to site the Cope Generating Station and to place the initial investment in it into electric rates; and

c) The proceedings to place into electric rates the Company's investment in the Urquhart Repowering Project (2002) and the Jasper Generating Station (2004).

Q. **TO WHAT PARTICULAR ASPECT OF THIS DOCKET DOES YOUR PRESENT PREFILED DIRECT TESTIMONY CONCERN?**

A. This testimony concerns the Petition for an Order Permitting Commencement of Construction Activities (the "Construction Order"). This petition was filed on May 30, 2008, in conjunction with the Combined
Application related to two new nuclear units that SCE&G filed on that date under the Base Load Review Act.

Q. PLEASE EXPLAIN.


At the same time that it filed the Combined Application, SCE&G also filed a petition for an order under Paragraph 7 of Section 58-33-110 of the South Carolina Code of Laws to authorize clearing, excavation and construction work to begin on the New Units pending a decision on the merits of the Combined Application. Timber and brush has already been
removed from much of the approximately 186-acre construction site as
authorized by the Commission in Order 2007-784. Under the terms of
Paragraph 7 of Section 58-33-110, the Commission may issue an order
allowing construction work to commence on the site if it finds that
permitting this work is “justified by public convenience and necessity.”
SCE&G seeks such an order (the “Construction Order”) so that it can begin
to install the roads and other infrastructure on the site, relocate a rail line
and undertake other work to support construction of the New Units. This
testimony is filed in support of the Company’s May 30, 2008 petition for a
Construction Order.

Q. WHAT OTHER WITNESSES WILL BE TESTIFYING FOR SCE&G
IN THIS PHASE OF THE PROCEEDINGS?

A. SCE&G will present direct testimony from two other witnesses in
support of the requested Construction Order:

Mr. Alan Torres is Manager, Construction for V.C. Summer
Nuclear Station Units 2 & 3. Mr. Torres will testify concerning the
construction schedule for the New Units and the importance of beginning
work on the site before February 2009. Specifically, he will testify
concerning the importance of beginning work on the roads and a bridge
serving the construction site in the fall of 2008 and of relocating the
existing rail line serving the site.
Dr. Joseph M. Lynch is Manager of Resource Planning, SCANA Services, Inc. Dr. Lynch will testify to SCE&G's need for additional generation resources in 2016 and 2019 to allow the Company to continue to provide reliable and efficient electric service to the customers in its service area. Dr. Lynch will also testify concerning the importance of Unit 1 to the efficient and reliable functioning of our electric system.

Q. WHAT ISSUE DOES THE COMPANY UNDERSTAND TO BE BEFORE THE COMMISSION IN THIS PHASE OF THE PROCEEDING?

A. SCE&G understands the issue before the Commission in this phase of the proceedings to be whether public convenience and necessity would be furthered by commencing construction activities on the site of the New Units now, rather than waiting to do so until February of 2009, or such other date as the order on the merits of the Combined Application is issued. As SCE&G understands it, the merits of the decision to construct the New Units are not at issue in this proceeding.

Q. PLEASE EXPLAIN.

A. The merits of the decision to build the New Units will be taken up at the hearing on the merits of the Combined Application. SCE&G is eager for that hearing to take place as soon as possible and is prepared to present detailed and comprehensive testimony demonstrating the benefits to customers from SCE&G's decision to construct the New Units. However,
as to the present proceeding, SCE&G believes the only issue before the
Commission is whether the public convenience and necessity is furthered
by the Company beginning work at the site now rather than waiting until
February of 2009 to do so. Accordingly, my testimony will address this
narrower issue.

Q. WHAT EFFECT WOULD A CONSTRUCTION ORDER HAVE ON
THE DECISION ON THE MERITS OF THE COMBINED
APPLICATION?

A. My understanding is that the decision to grant a Construction Order
would not have any effect on the decision on the merits of the Combined
Application. The Company understands that under Paragraph 7 of Section
58-33-110, a decision granting the Construction Order “shall not in any
way indicate approval by the Commission of the proposed site or facility.”
The Company also understands that if it receives the Construction Order,
and is subsequently denied a Certificate of Environmental Compatibility
and Public Convenience and Necessity on the merits, it will be at risk for
the construction costs incurred between the time the order is granted and
the time that the Certificate of Environmental Compatibility and Public
Convenience and Necessity is denied. SCE&G is confident that it can
clearly demonstrate to the Commission that its customers’ best interests are
served by its decision to add the New Units to its system.
Q. WHY DOES THE COMPANY BELIEVE THAT COMMENCING INITIAL SITE WORK NOW RATHER THAN WAITING UNTIL FEBRUARY OF 2009 IS JUSTIFIED BY PUBLIC CONVENIENCE AND NECESSITY?

A. As a general matter, in managing a project as complex and costly as building new base load generation capacity, anything that can reasonably be done to advance the construction schedule and clear the way for future construction activities is a benefit to the project and ultimately to the public that will be served by the project. Every milestone that is accomplished in such a project reduces uncertainty and adds to the flexibility of the schedule going forward. Given the amount of capital involved in a base load generation construction project, given the time value of money, and given the importance and usefulness of base load generation to SCE&G’s system, actions that reduce uncertainty and accelerate the construction schedule for base load units significantly benefit the system and its customers. In this case, the benefits of moving forward with construction activities and increasing the flexibility and certainty of the project schedule is important enough that the Company is willing to proceed with the initial site work on the terms discussed above.
Q. ARE THERE REASONS SPECIFIC TO THIS PARTICULAR PROJECT WHY THE PUBLIC WILL BENEFIT FROM INITIAL SITE WORK BEGINNING BEFORE FEBRUARY OF 2009?

A. Yes. As Dr. Lynch's testimony shows, SCE&G has a very real and definite need for the power that the New Units will represent in the 2016 and 2019 time periods. Beginning site work now increases the assurance of these important generation resources being available as needed.

Q. PLEASE EXPLAIN.

A. SCE&G's electric service territory includes several rapidly growing coastal and metropolitan areas in South Carolina, including the areas around the cities of Charleston, Summerville, Beaufort, Bluffton, Lexington and Columbia. There is nothing theoretical about the growth in population in these areas or about the commercial and industrial development that is occurring on our system. Cope Station was the last true base load plant SCE&G has added. Since 1996 when Cope Station went on line, the number of electric customers we serve has grown by approximately 31%. As a utility with a Commission-certificated electric service territory, we have an obligation to meet the needs of current and future customers efficiently and reliably.
Q. FROM A QUANTITATIVE STANDPOINT, HOW IS THIS GROWTH AND DEVELOPMENT AFFECTING SCE&G’S NEED FOR GENERATION RESOURCES?

A. As Dr. Lynch’s testimony shows, as of 2008, SCE&G’s generation system has reached the point where the Company is purchasing capacity off-system to meet customer demands. During the period 2008-2015, the required capacity purchases will trend upward with some variation in the increase year to year due to the expiration of off-system sales contracts. By 2015, Dr. Lynch’s projections show the Company purchasing up to 450 MW of capacity off-system, with the on-system reserve margin dropping to 2% in 2016 without New Unit 2. It is clearly in the public interest for SCE&G to add base load generation resources to meet customers’ needs no later than 2016. Beginning the initial site development activities now reduces uncertainty around the construction of these needed resources and increases the likelihood that these resources will be available by 2016. As a result, the requested Construction Order will strongly benefit public convenience and necessity.

Q. WHY IS IT IMPORTANT TO START SITE WORK ON THE NEW UNITS BEFORE FEBRUARY 2009?

A. As Mr. Torres will testify, the construction schedule for completion of New Unit 2 by 2016 assumes that work on key site infrastructure projects will be completed to support the later ramp-up of construction
work. If we are unable to complete this site infrastructure work as anticipated, the schedule on which we are currently relying could slip and the New Unit 2 may not be available when required in 2016. As mentioned above, Mr. Torres will discuss in detail the need to begin the six month process of relocating the rail line serving Unit 1 and the New Units during the fall of 2008. That line relocation must be completed in time to support delivery of the replacement main station transformer for Unit 1 in May of 2009.

Q. WHY IS RELOCATION OF THE RAIL LINE IMPORTANT?

A. Due to age, the current transformer serving Unit 1 is reaching the end of its useful life as the main station transformer for a nuclear unit. The continued reliability of Unit 1 requires the replacement of that transformer during the Fall 2009 outage. For the new transformer to be delivered, set up and given initial testing before the outage, it must be delivered to the site in May of 2009. If the rail line cannot be relocated onto the new site contours by May, then it will have to be refurbished in place and allowed to remain in place until the new transformer is installed and tested under load and the transformer currently in use is prepared for shipping and removed from the site. This will not occur until December of 2009. Leaving the rail line in place during this period will interfere with grading and contouring of the construction site which will delay the construction schedule and increase expense.
Q. APART FROM THE RAIL LINE RELOCATION, WHAT SPECIFIC WORK WOULD SCE&G ENVISION TAKING PLACE IF THE CONSTRUCTION ORDER IS GRANTED?

A. At present, apart from the rail line relocation, the work the Company envisions undertaking will be the construction or improving of roads and bridge needed to deliver construction equipment and materials to the site and to give work crews access to it. Mr. Torres will describe this work in more detail, but it principally involves constructing or improving access roads to the site, and building a bridge across Mayo Creek as part of the construction of one of the roads. General clearing and grubbing of the site, and grading the site down to its final contours is currently anticipated to take place later in 2009. The roads and bridge are needed to deliver heavy equipment to the site to support this next phase of work, as well as materials for the erosion control structures. Lay-down yards and other facilities may be put in place while this work is being done.

Q. WHAT DOES THE COMPANY EXPECT TO SPEND ON THIS WORK?

A. As presently envisioned, the amount of work involved is small compared to the overall scope of the project. If the requested order is granted, SCE&G estimates that it will spend approximately $10.5 million on this work between the time work commences and the end of February 2009, of which only approximately $5.8 million will be SCE&G's share of
the cost. That $10.5 million amount is slightly less than one-tenth of one percent of the total project cost. But that 0.1% can make a critical impact on the construction schedule and can greatly increase the certainty that the project to be built on time and on budget. By contrast, as Dr. Lynch will testify, delaying the construction of New Unit 2 for one year could cost the public over $260 million in additional fuel, capacity and environmental costs.

Q. IN CONCLUSION, WHAT IS SCE&G ASKING THIS COMMISSION TO DO?

A. SCE&G respectfully requests that the Commission issue an order under Paragraph 7 of S.C. Code Ann. § 58-33-110 authorizing the Company to begin construction work immediately at the site of the New Units under the terms set forth above, with the specific understanding that the order in no way affects consideration of the merits of the Combined Application and that SCE&G will be at risk for the construction costs incurred between the time the order is granted and the time that the Certificate of Environmental Compatibility and Public Convenience and Necessity is granted or denied.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.
DIRECT TESTIMONY OF

JOSEPH M. LYNCH

ON BEHALF OF

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NO. 2008-196-E

(HEARING ON SCE&G’S PETITION FOR AN ORDER PERMITTING COMMENCEMENT OF CONSTRUCTION ACTIVITIES)

1 Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND CURRENT POSITION WITH SOUTH CAROLINA ELECTRIC & GAS COMPANY (“SCE&G” OR “COMPANY”).

A. My name is Joseph M. Lynch and my business address is 1426 Main Street, Columbia, South Carolina. My current position with the Company is Manager of Resource Planning.

8 Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I graduated from St. Francis College in Brooklyn, New York with a Bachelor of Science degree in mathematics. From the University of South Carolina I received a Master of Arts degree in mathematics, an MBA and a Ph.D. in management science and finance. I was employed by SCE&G as a Senior Budget Analyst in 1977 to develop econometric models to forecast
electric sales and revenue. In 1980, I was promoted to Supervisor of the Load Research Department. In 1985, I became Supervisor of Regulatory Research where I was responsible for load research and electric rate design. In 1989, I became Supervisor of Forecasting and Regulatory Research, and, in 1991, I was promoted to my current position of Manager of Resource Planning.

Q. WHAT ARE YOUR CURRENT DUTIES AS MANAGER OF RESOURCE PLANNING?
A. As Manager of Resource Planning I am responsible for producing SCE&G’s forecast of energy, peak demand and revenue; for developing the Company’s generation expansion plans; and for overseeing the Company’s load research program.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?
A. The purpose of my testimony is to explain that SCE&G’s application to conduct initial clearing, excavation and construction work at the site specified in the Combined Application in this Docket is justified by public convenience and necessity. My testimony demonstrates the Company’s need for additional capacity on its system to reliably supply energy to its customers and identifies the potential cost should construction be delayed.
and the new base load generation not be available for the summer cooling season of 2016. My testimony also explains the importance of ensuring that the reliability of V.C. Summer Nuclear Station ("VCSNS") Unit 1 is not hampered as the unit's main step-up transformer is replaced during a scheduled refueling in the fall of 2009.

Q. HAVE YOU REVIEWED MR. ALAN TORRES' PRE-FILED TESTIMONY?
A. Yes I have.

Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF THE IMPORTANCE OF REBUILDING THE RAIL LINE THAT NOW SERVES UNIT 1 AND THAT WILL ALSO BE USED TO DELIVER CONSTRUCTION EQUIPMENT AND MATERIALS TO THE PROPOSED SITE FOR NEW UNITS 2 AND 3.
A. I understand that an additional reason that SCE&G seeks authorization to commence work on the site is the fact that SCE&G is scheduled to replace the main step-up transformer at VCSNS Unit 1 in the fall of 2009. I understand too that a rail line located on the site where new Units 2 and 3 will be constructed must be rebuilt by May 2009 and available for delivery of the replacement transformer to Unit 1. Replacing this transformer is important for the continued reliability of Unit 1.
Q. **IS THE RELIABILITY OF UNIT 1 IMPORTANT TO SCE&G'S SYSTEM AND ITS CUSTOMERS?**

A. Yes. Unit 1 is of great importance to SCE&G and its customers. The power that Unit 1 generates enhances the economy and reliability of SCE&G's electric system. Therefore, anything that could hamper or jeopardize the reliability of this unit should be avoided. Thus, along with the other projects set forth in Mr. Torres' testimony, the rebuilding of the rail line is justified by public convenience and necessity because it helps SCE&G meet two important needs—maintain the reliability of Unit 1 and provide necessary infrastructure to support construction of Units 2 and 3.

Q. **WHAT IS THE PROJECTED LOAD THAT SCE&G WILL BE REQUIRED TO SERVE IN 2016?**

A. The Company projects that its firm summer peak demand in 2016 will be 5,582 MW.

Q. **WHAT IS THE CURRENT SUPPLY CAPACITY OF SCE&G?**

A. Currently, SCE&G's total supply resource capacity is 5,745 MW.
Q. WILL THIS AMOUNT OF GENERATING CAPACITY MEET THE NEEDS OF SCE&G'S CUSTOMERS AND SYSTEM THROUGH 2016?

A. No, it will not. Without additional capacity either through purchase or self-built generation facilities, SCE&G’s reserve margin will decline below the Company’s minimum target range of twelve percent (12%) and slide to an unacceptable two percent (2%) by 2016. As shown more fully in Table 1 below, SCE&G does not anticipate purchasing additional capacity in 2016 as it is projected to meet its system capacity needs and reserve margin target in 2016 with the planned addition of 614 MWs of generating capacity supplied by Unit 2.

Q. WHAT IS SCE&G'S PLANNING RESERVE MARGIN TARGET AND HOW DOES IT AFFECT THE NEED FOR CAPACITY?

A. The Company provides for the reliability of its electric service by maintaining an adequate reserve margin of supply capacity. SCE&G has historically maintained a planning reserve margin target of 12-18% of firm peak demand. This range of reserves allows SCE&G to have adequate daily operating reserves and to have reserves to cover two primary sources of risk: supply risk and demand risk. Supply side risk refers to the risk of some generating capacity being down-rated or forced offline. Demand side risk refers to the risk of experiencing higher loads than expected because of
abnormal weather or forecast error. As a member of the Virginia-Carolina ("VACAR") subregion of the Southeast Reliability Council, SCE&G’s level of daily operating reserves is dictated by operating agreements with other VACAR member companies. VACAR has set the region's reserve needs at 150% of the largest unit in the region. SCE&G’s pro rata share of this capacity for 2008 is approximately 200 MW. Taking these risks and needs into account, SCE&G must maintain a minimum reserve of 12% of its firm peak demand to reliably serve its customers.

Q. WITH THE EXPECTED GROWTH IN DEMAND, HOW WILL SCE&G MEET ITS FIRM DEMAND NEEDS WHILE MAINTAINING ADEQUATE RESERVES BEFORE THE PROPOSED BASE LOAD UNITS ARE IN SERVICE?

A. As shown in Table 1 below, SCE&G projects that it will need to purchase as much as 450 MW of power by 2015 to maintain adequate capacity until the first proposed base load facility goes into service by the summer of 2016.
TABLE 1

PROJECTED RESERVE MARGIN

<table>
<thead>
<tr>
<th>Year</th>
<th>Firm Load (MW)</th>
<th>Reserve Margin Without Additions (%)</th>
<th>One year Purchase Capacity (MW)</th>
<th>Reserve Margin With Additions (%)</th>
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<tr>
<td>2008</td>
<td>5,181</td>
<td>10.9</td>
<td>100</td>
<td>12.8</td>
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<tr>
<td>2009</td>
<td>5,123</td>
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<td>2010</td>
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<td>125</td>
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<td>2012</td>
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<td>2017</td>
<td>5,697</td>
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<td>2022</td>
<td>5,256</td>
<td>-9.0</td>
<td></td>
<td>12.1</td>
</tr>
</tbody>
</table>

SCE&G plans to issue in the near future Requests for Proposals to purchase this additional capacity in the power markets. However, if capacity is not available for purchase at reasonable prices and on reliable terms, SCE&G may be forced to construct peaking facilities in order to meet the growing demand for electricity. As the above table reflects, if both proposed base load units are in service on the projected dates, SCE&G believes it will have sufficient capacity to serve its customers and maintain the necessary reserve margin without purchasing additional capacity beyond that reflected in Table 1 or constructing additional generation until 2022.
Q. IF UNITS 2 AND 3 PROPOSED BY SCE&G IN THIS PROCEEDING ARE NOT IN SERVICE BY THE SUMMER COOLING SEASON OF 2016 AND BY JANUARY 1, 2019, RESPECTIVELY, WHAT IMPACT WILL THAT HAVE ON SCE&G’S CUSTOMERS?

A. SCE&G’s calculations of load growth and needed generating capacity which are included in the Combined Application project that additional capacity will be available to the Company for the summer cooling season of 2016 (New Unit 2) and by January 1, 2019 (New Unit 3).

Until these facilities are in service, SCE&G will need additional capacity to safely and reliably serve its customers and maintain an adequate reserve margin. Assuming that the facilities are not in service by the currently projected dates, SCE&G will have to continue to purchase additional capacity on the market or will have to build new peaking facilities to serve its firm customers and meet the capacity requirements of its system. Both of these options would subject the Company and, therefore, its customers to otherwise avoidable costs which are substantial.

Q. ARE YOU ABLE TO QUANTIFY THE AMOUNT OF THIS ADDITIONAL COST?

A. As shown in Table 2 below, SCE&G estimates that if construction on Unit 2 is delayed by twelve (12) months beyond the current schedule, the delay will increase SCE&G’s production costs by approximately $266.1
million because of the need to substitute low cost nuclear generation with higher cost fossil powered generation to serve system load. Approximately $45.8 million of this cost estimate would result from the emission of approximately 2.3 million additional tons of CO2 which will be produced through the increase in fossil powered generation. Furthermore, the cost of replacement capacity alone would be approximately $55.6 million in addition to the production costs. Consequently, the total cost impact to our customers could be estimated to be approximately $321.7 million. If Unit 3 is also delayed by 12 months, then there would be an additional impact of similar magnitude in 2019.

**TABLE 2**

**PROJECTED INCREASE IN PRODUCTION COSTS**

Assuming a Twelve (12) Month Delay

(in millions)

| Increased Cost of Production to Serve System Load | $220.3 |
| Cost Relative to the Emission of Additional CO2   | $45.8 |
| Cost of Additional Capacity to Meet Reserve Margin | $55.6 |
| Total Increased Cost                               | $321.7 |

Further, SCE&G and, therefore, its customers would also lose the benefit of the nuclear production tax credits during any delay. A delay of just seven (7) months would result in an immediate deferment of all tax
credits projected for 2016 and potential loss of production tax credits over

time. In sum, delaying the in service date of the proposed facilities would
result in substantial increased cost to the Company and its customers, costs
which the Company seeks to avoid for its customers.

Q. IN YOUR OPINION, DOES SCE&G’S PRESENT NEED TO
CONDUCT INITIAL CLEARING, EXCAVATION AND
CONSTRUCTION WORK AT THE SITE SPECIFIED IN THE
COMBINED APPLICATION IN THIS DOCKET MEET THE
NEEDS OF PUBLIC CONVENIENCE AND NECESSITY?
A. In my opinion, it clearly does. As explained in the Company’s
Petition in this matter, the order in the Combined Application proceeding is
not due to be issued until the end of February 2009. I generally understand
from SCE&G’s Construction Manager, Mr. Alan Torres, that in order for
these facilities to be in service by the proposed dates, this initial work must
be commenced mid-fourth quarter of 2008. If the Commission approves
SCE&G’s request to commence clearing, excavation and construction, such
authorization does not prejudice the other issues in this docket. As S.C.
Code Ann. Section 58-33-110(7) clearly states, a favorable ruling on
SCE&G’s petition for initial clearing, excavation and construction, does not
“in any way indicate approval by the Commission of the proposed site or
facility.” Rather, this initial work will be undertaken by SCE&G entirely at
its own risk in order to accomplish the construction schedule in a timely and orderly manner. I therefore hold the strong opinion that public convenience and necessity justifies permitting SCE&G to move forward with the initial clearing, excavation and construction; otherwise there will be substantial additional cost as well as deferred and lost tax credits which the Company seeks to avoid for the benefit of its system and customers.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.
DIRECT TESTIMONY

OF

ALAN D. TORRES

ON BEHALF OF

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NO. 2008-196-E

(HEARING ON SCE&G’S PETITION FOR AN ORDER PERMITTING
COMMENCEMENT OF CONSTRUCTION ACTIVITIES)

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Alan D. Torres and my business address is the Virgil C.
Summer Nuclear Station, Post Office Box 88, Jenkinsville, South Carolina
29065.

Q. WHERE ARE YOU EMPLOYED AND WHAT IS YOUR POSITION
THERE?

A. I am employed by South Carolina Electric & Gas Company, a
wholly-owned subsidiary of SCANA Corporation, at the Virgil C. Summer
Nuclear Station (“VCSNS”) in Jenkinsville, South Carolina and I am the
Manager of Construction for VCSNS Units 2 and 3.
Q. WHAT ARE YOUR DUTIES AS THE CONSTRUCTION MANAGER FOR UNITS 2 AND 3?

A. I am responsible for coordinating the construction portion of the Engineering, Procurement, and Construction Agreement (the “EPC Contract”), overseeing construction of Units 2 and 3 (collectively referred to as the “New Units”), and ensuring that oversight activities are properly conducted and are sufficiently comprehensive.

Q. HOW LONG HAVE YOU BEEN EMPLOYED WITH SCE&G?

A. I have worked for SCE&G at VCSNS for 32 years. Prior to becoming the Construction Manager for Units 2 and 3, I served in the following capacities:

1976-1980: Construction Oversight for Unit 1—inspecting, testing, and reviewing various aspects of installation and construction to ensure compliance with appropriate professional standards.

1980-1989: Non-Destructive Examination and In-Service Inspection Supervisor—supervising mechanical, welding, and non-destructive testing of safety-related equipment, supervising welding qualification and testing, and developing hot functional testing of pipe supports, all in compliance with professional standards.
1989-1992: Associate Manager of SCE&G Nuclear Operations Quality Control Department—managing a $5,000,000 budget and 30 employees to oversee quality control at the Unit 1 facility.


1997-2007: Manager of Planning and Outage Management—planning and implementing online and outage work activities and managing all outage modifications.

Q. **DO YOU HOLD ANY PROFESSIONAL CREDENTIALS?**

A. Yes. Since 1976, I have been certified as an Architectural Technician. I also hold the following certifications:

- American Welding Society 1980
- Electric Power Research Institute
- Level III Visual Inspector 1982
- All Non-Destructive Examination Disciplines
- In Accordance with the Standards of the American Society for Non-Destructive Testing 1982
- Certified Lead Auditor 1992
Q. HAVE YOU SERVED IN ANY CAPACITY WITH ANY PROFESSIONAL ORGANIZATIONS OR OTHER COMMITTEES?
A. Yes. From 1997 until 2001, I served on the Nuclear Oversight Committee for the Seabrook Nuclear Power Plant located in Seabrook, New Hampshire. I also have served on several benchmark teams for the Institute of Nuclear Power Operators ("INPO"), in addition to the Evaluation and Assist Team. I recently served on the INPO Construction Benchmark Team, as part of which we traveled overseas in March 2008 to review the construction procedures of Korea Hydro & Nuclear Power Co., Ltd. in South Korea and Hokkaido Electric Power Company and the Chugoku Electric Power Company, Inc. in Japan. Since 2007, I have served on the construction inspection task force for the Nuclear Energy Institute.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?
A. The purpose of my testimony is to support SCE&G's Petition for an Order Permitting Commencement of Construction Activities filed with the Commission and to expand on my affidavit that was submitted along with the Petition. I will explain why it is convenient and necessary to begin initial clearing, excavation, and construction work at the site selected for construction of two new nuclear power reactors at VCSNS before
Westinghouse and Stone & Webster (the “Contractors”) can begin construction of those units so that Unit 2 can be placed into service on April 1, 2016 and, thus, be available for the summer peak period in 2016, and so that Unit 3 can be placed into service on January 1, 2019.

Q. WHAT IS THE WORK THAT MUST BE PERFORMED BY THE CONTRACTORS IN THE NEAR FUTURE IN ORDER TO REASONABLY ENSURE THAT WORK UNDER THE EPC CONTRACT WILL PROCEED IN A TIMELY MANNER?

A. The work involves the construction, upgrading or relocation of road or rail infrastructure to support construction. This work consists of the following:

- Dismantling and replacing an existing railroad line located at VCSNS;
- Upgrading the existing Old Parr Road into VCSNS;
- Constructing a new site access road, including constructing a bridge across Mayo Creek;
- Constructing a heavy-haul route to the site;
- Constructing a road to the discharge structure to be constructed on the Broad River; and
- Constructing a road to the new switch yard construction site.
These are infrastructure items which will be used to bring workers, materials and equipment onto the site, and this infrastructure needs to be in place before other phases of construction can begin.

Q. ARE YOU USING ANY EXHIBITS AS PART OF YOUR TESTIMONY?

A. Yes. As part of my testimony, I will be referring to and discussing the following exhibits:

- Layout of Construction Site for VCSNS Units 2 and 3, attached as Exhibit No. _____ (ADT-1);
- Aerial Photograph of the VCSNS Units 2 and 3 Project Boundary Lines, attached as Exhibit No. _____ (ADT-2);
- Railroad Elevation Drawing, attached as Exhibit No. ____ (ADT-3).

Q. PLEASE EXPLAIN THE RAILROAD LINE RELOCATION THAT YOU MENTIONED ABOVE.

A. As shown in Exhibit Nos. _____ and _____ (ADT-1 and ADT-2), there is a railroad line running through the construction site for Units 2 and 3. This railroad line originally was used to deliver construction materials to Unit 1 when it was built. Since that time it has been used to deliver other large items to Unit 1, such as steam generators; high and low pressure
turbine rotors; and moisture separators. Once refurbished, the rail line also
will be used for delivering construction materials to the site for Units 2 and
3. But, in addition to supporting the construction needs of Units 2 and 3, the
line also will be used to deliver a new main power step-up transformer to
Unit 1 in May 2009 in support of the refueling outage scheduled for
October 2009.

Q. WHAT WORK MUST BE DONE WITH RESPECT TO THE
RAILROAD LINE?

A. First, the part of the rail line that runs through the construction site
for Units 2 and 3 must be dismantled. The Contractors then will begin
clearing, excavation, and grading of the new rail corridor, which will be
approximately 30 yards wide and will follow the contours to which the
overall site will be graded in 2010, roughly 20 feet below current grade.
Once the corridor is cut to the appropriate level, the railroad line will be
rebuilt in the corridor and can remain in service while the remainder of the
site is graded beginning in 2010. Assuming favorable conditions throughout
the railroad reconstruction project, the process of rebuilding the rail line
will take six months.
Q. WHY CAN'T THE CONTRACTORS DEFER THE RAILROAD PROJECT UNTIL AFTER THE COMBINED APPLICATION IS APPROVED?

A. VCSNS Unit 1 has a critical need for working rail service between the time a new main station transformer is scheduled to be delivered to the site, which is May of 2009, and the time the existing transformer is scheduled to be transported off site, which is December of 2009.

Q. PLEASE EXPLAIN WHY THESE DATES ARE IMPORTANT.

A. Unit 1 is scheduled for a refueling outage in October 2009, during which time the main step-up power transformer for Unit 1 is scheduled for replacement. The existing transformer has been in service for over 14 years and must be replaced to ensure the continued reliability of Unit 1, which is a very important generation plant for our system. To support this schedule, the relocation of the railroad line must begin no later than December 2008 so that it can be completed in time for the scheduled delivery of the new transformer in May 2009. If not the line will have to be left in place until at least December of 2009 when the current transformer will be taken off-site.
Q. PLEASE EXPLAIN WHAT IS INVOLVED IN REPLACING THE UNIT 1 MAIN TRANSFORMER.

A. The new transformer weighs approximately 550 tons and will be delivered to the site on a rail car which weighs 300 tons. Once the new transformer is delivered, it must be filled with dielectric fluid and subjected to a host of pre-operational tests to ensure to the extent possible that it will perform as intended. Once the new transformer is installed, and Unit 1 comes back on line, the transformer will be tested under full load and in full operational conditions before plant personnel determine that it may be relied upon as the main station transformer. Only then will SCE&G release the old transformer for draining and transporting off site.

Q. WHY IS RAIL SERVICE NEEDED THROUGHOUT THIS TIME?

Rail service is needed throughout this time since, if the new transformer is damaged in transit or fails any of its pre-operational or in-service tests, SCE&G would have the supplier repair or replace the transformer, which could require its removal from the site, the delivery of a replacement unit, or both. In such a scenario, it may be necessary to reinstall the old transformer pending repair or replacement of the new transformer.
Q. WHY CAN'T THE CONTRACTORS SIMPLY REFURBISH THE RAILROAD LINE NOW AND DEFER DISMANTLING AND REBUILDING THE LINE UNTIL DECEMBER OF 2009?

A. If the railroad line were only refurbished and left in place, the Contractors could not proceed with clearing, grading, and grubbing of the construction site for Units 2 and 3 except on a piecemeal basis until December 2009. This delay would increase the cost of the clearing, grading, and grubbing work and SCE&G could not count on that work being completed on time to support the remaining construction schedule. Such a delay could, and probably would, delay the entire construction schedule for the New Units since most other construction work depends on the site grading being completed.

Q. COULD ADVERSE WEATHER DELAY COMPLETION OF THE GRADING?

A. Absolutely, as it would with almost any outdoor construction project. In fact, one of the advantages of staying on schedule and initiating the initial clearing, excavation, and construction work of the critical infrastructure I have described in my testimony is the ability to create the flexibility to respond to unexpected and unplanned delays.
Q. HAS SCE&G EXAMINED WHETHER THERE ARE ALTERNATIVES TO DELIVERING THE TRANSFORMER TO UNIT I BY RAIL?

A. Yes. We are in the process of examining whether the transformer could be delivered by rail to a different point, and then moved by road to Unit 1 via truck. However, even if this is determined to be feasible, it will require the additional steps of moving the transformer from rail to truck, and then from the truck to its location at Unit 1. Each movement among transport modes presents a potential opportunity for damaging the new transformer. This alternative therefore would not be the preferred method of transporting the transformer for reasons of both cost and safety.

Q. PLEASE EXPLAIN WHAT ROADS SCE&G IS REQUESTING TO BUILD OR IMPROVE ON THE SITE UNDER THE REQUESTED CONSTRUCTION ORDER?

A. The road and bridge construction planned involves creating a new site access road, improving the exiting Old Parr Road to support additional traffic, creating a heavy-haul road, building a road to the site of the discharge structure on the Broad River, and constructing a road to the new switch yard site. Each of these roads is shown on Exhibit No. ___ (ADT-1).
Q. PLEASE EXPLAIN WHAT MUST BE DONE WITH RESPECT TO THE SITE ACCESS ROAD AND THE BRIDGE ACROSS Mayo Creek.

A. SCE&G plans to construct a new site access road in the location reflected on Exhibit No. ___ (ADT-1). This road will provide access to the site for work crews and other light to medium weight construction traffic. The new road requires construction of a bridge spanning approximately 250 feet across Mayo Creek.

Q. WHY COULDN’T CONSTRUCTION OF THE BRIDGE BEGIN NEXT YEAR IF AND WHEN THE COMBINED APPLICATION IS APPROVED?

A. It is necessary to have the site access road and the bridge over Mayo Creek in place before the major construction traffic begins so that there is no need to delay traffic while the bridge is being constructed. It also is a safety and efficiency issue to complete construction of the access road and bridge so that personnel and routine construction traffic can be routed to that road, rather than sharing the heavy-haul road with over-sized construction equipment and delivery trucks.
Q. WHAT IS THE HEAVY-HAUL ROUTE?

A. The Contractors will improve an existing dirt and gravel road so that it will support the heaviest loads that will be required for delivery of equipment, material and supplies to the construction site. These improvements will consist of regrading and resurfacing the road with a soil and cement mixture to create a structurally sound and durable roadbed capable of handling extremely heavy items. The Contractors would like to have this road in place as soon as possible in order to accommodate the heavy construction traffic as soon as it begins.

Q. ARE ANY OF THESE CONSTRUCTION PROJECTS SUBJECT TO APPROVAL BY THE NUCLEAR REGULATORY COMMISSION (“NRC”)?

A. No. Construction of the needed and necessary infrastructure that I have described in my testimony is not subject to approval by the NRC.

Q. WHY IS IT NECESSARY TO BEGIN THE ROAD AND BRIDGE CONSTRUCTION PRIOR TO APPROVAL OF THE COMBINED APPLICATION?

A. The road and bridge construction must begin as soon as possible so that the necessary construction materials and equipment—including, for example, mesh materials, rip-rap, and heavy construction equipment—can
be delivered to the site immediately or as needed once construction is underway without causing additional delays in the construction schedule.

Q. **WOULD THE CONSTRUCTION OF UNITS 2 AND 3 BE IMPACTED BY A DELAY IN STARTING CONSTRUCTION OF THESE CRITICALLY IMPORTANT INFRASTRUCTURE ITEMS?**

A. Yes. If initial construction of this infrastructure does not begin until such time as the Combined Application is approved, the Contractors may be unable to meet the completion deadlines under the EPC Contract and Unit 2 will not be available to meet the peak demand period during the summer of 2016. The cost of constructing this infrastructure is estimated to be approximately $10.5 million, of which only approximately $5.8 million will be SCE&G's share of the cost. This represents a minor amount of the overall project cost, but is needed to be committed now to avoid delay in the much more significant and costly work of constructing and installing the nuclear reactor units and related facilities at a later date.

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

A. Yes.