Nuclear Regulatory Commission
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Exhibit SCE000001

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	Docket Nos. 52-027-COL 52-028-COL
SOUTH CAROLINA ELECTRIC & GAS COMPANY AND SOUTH CAROLINA PUBLIC SERVICE AUTHORITY (ALSO REFERRED TO AS SANTEE COOPER)	)	
(Virgil C. Summer Nuclear Station Units 2 and 3)	)	September 27, 2011

SOUTH CAROLINA ELECTRIC & GAS COMPANY'S ANSWERS TO THE COMMISSION QUESTIONS FOR THE V.C. SUMMER UNITS 2 AND 3 MANDATORY HEARING

South Carolina Electric & Gas Company (SCE&G) provides the following answers to the questions in the Commission's September 15, 2011 Order (Transmitting Pre-Hearing Questions) regarding the mandatory hearing for V.C. Summer Units 2 and 3. SCE&G's answers are limited to those questions directed to it.

ANSWERS TO COMMISSION QUESTIONS

Question No.	Category	Reference	Question
5	Safety	General	Does the VCSNS site fall within the portion of the country that is being addressed under Generic Safety Issue 199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants?" If so, how did the applicant address the concerns stated in Generic Safety Issue 199?

Response: (Robert B. Whorton)

Yes. The V.C. Summer Units 2 and 3 site falls within the portion of the country that is being addressed under Generic Issue 199, "Implications of Updated Probabilistic Seismic Hazard Estimates in Central and Eastern United States on Existing Plants" (GI-199).

A draft Generic Letter (GL) was issued for public comment on September 1, 2011 (ADAMS Accession No. ML111710783), for all 104 operating plants, including the existing V.C. Summer Unit 1, which will be requested to address the issues raised under GI-199. Finalization of the GL is anticipated in late 2011. GI-199 arose during the review of the first Early Site Permits, when the NRC staff determined that certain seismic hazard estimates were higher than previously assumed.

While the draft GL is only addressed to current license holders, the concerns raised in the draft GL (*i.e.*, requiring use of the updated seismic source characterization model) have been indirectly addressed in the V.C. Summer Units 2 and 3 COL Application (COLA) because the ground motion response spectra (GMRS) for V.C. Summer Units 2 and 3 were developed using updated probabilistic seismic hazard estimates. Site seismic characteristics were established in the Summer COLA, wherein a probabilistic seismic hazard analysis (PSHA), using updated EPRI ground motion prediction equations as well as a revised EPRI seismic source model, considered more up-to-date scientific information.

As part of this review, the Charleston, New Madrid, and Eastern Tennessee Seismic Zones were reevaluated and updated. These results show that the ground motion hazard at the V.C. Summer Units 2 and 3 site is dominated by the Charleston seismic source, with no revision to the hazard contribution of the Eastern Tennessee Seismic Zone. Because of the greater distance (approximately 500 miles) between the New Madrid Seismic Zone (NMSZ) and the V.C. Summer site, updated details of the geometrical representation of each NMSZ fault are not critical to the Summer seismic hazard calculations. Furthermore, the V.C. Summer COLA developed the site GMRS in accordance with Regulatory Guide 1.208, "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion" (March 2007). For these reasons, the V.C. Summer Units 2 and 3 COLA has accounted for issues raised by GI-199.

Question No.	**Category**	**Reference**	**Question**
10	Safety	SECY-11-115 p. 4	The COL for Unit 3 includes a license condition for geologic mapping of excavation. This license condition is not included in the COL for Unit 2 because this activity has already been performed. Why was this activity previously performed for Unit 2 but not for Unit 3?

Response: (Amy M. Monroe, Robert B. Whorton)

The draft COL for V.C. Summer Unit 3 (ADAMS Accession No. ML111920134) includes the following license condition (page 12):

> SCE&G shall perform geologic mapping of excavations for safety related structures; examine and evaluate geologic features discovered in these excavations; and shall inform the Director of NRO, or the Director's designee, in

> writing, once excavations for these safety related structures are open for examination.

As explained in Section 2.5.1.4.2 of the Final Safety Evaluation Report for V.C. Summer Units 2 and 3 (ADAMS Accession No. ML110310051), SCE&G had completed geologic mapping for Unit 2 to support August 2010 and April 2011 site visits by the staff to review the mapping and excavation activities. Based on its conclusions from the review (page 2-193), "which resulted from direct observations made during the two site visits to examine geologic features in the walls and floor of the Unit 2 excavation and the geologic maps of the excavation produced by the applicant, the staff does not propose a license condition for geologic mapping of the VCSNS Unit 2 excavation." The staff further noted (page 2-193): "Because geologic mapping of the Unit 3 excavation has not progressed to the same point as that for the VCSNS Unit 2 excavation, the geologic mapping license condition for the Unit 3 excavation will remain as proposed in the July 6, 2010, Safety Evaluation Report for VCSNS Units 2 and 3." This is the reason the geologic mapping license condition is included for the draft COL for Unit 3, but not Unit 2.

Construction of Unit 2 is scheduled to be completed well before the completion of construction of Unit 3, resulting in construction-related activities for Unit 2, such as geologic mapping, being further along than the corresponding activities for Unit 3. State-of-the-art techniques are being used for the geologic mapping program and a serial approach to the excavations for Units 2 and 3 is being employed to help provide a more consistent technical evaluation for each excavation, rather than conducting the geologic mapping in parallel for the two units, which likely would require the use of two separate technical staffs working in parallel. Geological mapping for Unit 3 is underway, and SCE&G plans to complete this geologic mapping by mid-2012.

Question No.	**Category**	**Reference**	**Question**
12(a)	Safety	VCS DEP 2.0-2 FSER Sec. 2.0.4 SECY-11-115 p. 12	Please explain the need for the departure regarding the maximum safety wet bulb air temperature.

Response: (Amy M. Monroe)

COLA Part 7 sets out the departures and exemptions for V.C. Summer Units 2 and 3. Section A of Part 7 identifies site-specific departure VCS DEP 2.0-2, described as "Maximum Safety Wet Bulb (noncoincident) Air Temperature."

As explained in COLA Part 7 (page 6):

> The site parameter value provided in DCD Tier 1, Table 5.0-1 for the air temperature maximum wet bulb (noncoincident) is 86.1°F. This site parameter value is listed as the maximum safety wet bulb (noncoincident) air temperature in

> DCD Tier 2, Table 2-1. The corresponding site characteristic value is 87.3°F as reported in FSAR Subsection 2.3.1.5. This site characteristic exceeds the DCD site parameter by 1.2°F.

Therefore, the departure is necessary to account for the difference between the DCD site parameter value for maximum safety wet bulb (noncoincident) air temperature and the corresponding site characteristic.

COLA Part 7 (page 6) also provides the following justification for the departure:

> The maximum safety wet bulb (noncoincident) air temperature is 87.3°F. This is the 100-year return estimate of 2-hour duration as reported in FSAR Subsection 2.3.1.5. This temperature exceeds the DCD site parameter of 86.1°F by 1.2°F. Analysis of the maximum safety wet bulb (noncoincident) air temperature at a bounding value of 87.4°F has been performed. The results of this analysis show that the higher maximum safety wet bulb (noncoincident) air temperature will not adversely affect any safety-related SSCs, their functional capabilities or analysis methods as presented in the DCD.
>
> Specifically, the following evaluations were performed with the following results:
>
> - Containment Pressure Design Limit Evaluation
>
> There is no change in maximum containment pressure value reported in the DCD as a result of increasing the maximum safety noncoincident wet bulb temperature to 87.4°F.
>
> - IRWST Temperature Control with Normal Residual Heat Removal System (RNS)
>
> The IRWST does not steam with RNS cooling initiated two hours after loss of high pressure heat removal and PRHR actuation, with the safety noncoincident wet bulb at or below 87.4°F.
>
> - Component Cooling Water System (CCS) Maximum Temperature <100°F During Power Operation
>
> At the maximum safety noncoincident wet-bulb temperature, the Service Water System (SWS) and CCS must maintain a CCS supply temperature of less than 100°F for all cooled loads at full power operating conditions. The CCS temperature remains below 100°F with the safety noncoincident wet bulb temperature at or below 87.4°F.
>
> - Nuclear Island Nonradioactive Ventilation System (VBS) Capability

The evaluation shows that the increase in the safety noncoincident wet bulb temperature will not impact the standard plant design of the Low Capacity Chilled Water System (LCVWS). With the increased heat loads resulting from the higher maximum safety wet bulb temperature, the LCVWS maintains the VBS's capability to maintain the main control room, and 1E electrical rooms below 75°F with a single train of VBS and the Chilled Water System (VWS) in service. No change to LCVWS chiller capacity or the VBS capacity is required with the safety noncoincident wet bulb at or below 87.4°F.

Question No.	Category	Reference	Question
13	Safety	VCS DEP 18.8-1 SECY-11-115 p. 13 FSER Attach. 13.3A	Please provide a map of the EPZ for Units 2 & 3 (or a reference to an RAI response containing a map).

Response: (Robert E. Williamson)

The Emergency Plan for V.C. Summer Units 2 and 3 is provided in COLA Part 5 (ADAMS Accession No. ML110410260). Figure 1-3 of the Radiation Emergency Plan provides a map of the 10-mile Emergency Planning Zone for Units 2 and 3. A copy of this figure is provided as Attachment 1 to this document.

Question No.	Category	Reference	Question
30	Environ-mental	SECY-11-115 p. 26	Is there a projected timeline for a decision by the South Carolina Department of Health and Environmental Control regarding the Section 401 Clean Water Act certification?

Response: (April R. Rice; Stephen E. Summer)

SCE&G has responded to agency comments on the 401 certification and the South Carolina Department of Health and Environmental Control (SCDHEC) has provided the responses back to the commenting agencies for review. SCDHEC is aware of the need for issuance of the 401 certification in support of issuance of the COLs for V.C. Summer Units 2 and 3 and has projected that its decision will be made in November 2011.

CERTIFICATIONS

I am responsible for the responses to Questions 5 and 10. I certify that these answers were prepared by me or under my direction, and I adopt the answers as part of my sworn testimony in this proceeding.
I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief.

Executed on September 27, 2011.

Executed in Accord with 10 C.F.R. § 2.304(d)

/s/ Robert B. Whorton
Robert B. Whorton
Consulting Engineer
South Carolina Electric & Gas Company
P.O. Box 88
Jenkinsville, SC 29065
Phone: (803) 345-4725
E-mail: rwhorton@scana.com

I am responsible for the responses to Questions 10 and 12(a). I certify that these answers were prepared by me or under my direction, and I adopt the answers as part of my sworn testimony in this proceeding.
I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief.

Executed on September 27, 2011.

Executed in Accord with 10 C.F.R. § 2.304(d)

/s/ Amy M. Monroe
Amy M. Monroe
Licensing Engineer
South Carolina Electric & Gas Company
P.O. Box 88
Jenkinsville, SC 29065
Phone: (803) 345-4106
E-mail: amonroe@scana.com

I am responsible for the response to Question 13. I certify that this answer was prepared by me or under my direction, and I adopt the answer as part of my sworn testimony in this proceeding. I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief.

Executed on September 27, 2011.

Executed in Accord with 10 C.F.R. § 2.304(d)

/s/ Robert E. Williamson
Robert E. Williamson
Manager, Emergency Planning
South Carolina Electric & Gas Company
P.O. Box 88
Jenkinsville, SC 29065
Phone: (803) 345-4464
E-mail: rewilliamson@scana.com

I am responsible for the response to Question 30. I certify that this answer was prepared by me or under my direction, and I adopt the answer as part of my sworn testimony in this proceeding. I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief.

Executed on September 27, 2011.

Executed in Accord with 10 C.F.R. § 2.304(d)

/s/ April R. Rice
April R. Rice
Licensing Supervisor
South Carolina Electric & Gas Company
P.O. Box 88
Jenkinsville, SC 29065
Phone: (803) 345-4232
E-mail: arice@scana.com

I am responsible for the response to Question 30. I certify that this answer was prepared by me or under my direction, and I adopt the answer as part of my sworn testimony in this proceeding. I declare under penalty of perjury that the foregoing is true and correct to the best of my information, knowledge, and belief.

Executed on September 27, 2011.

Executed in Accord with 10 C.F.R. § 2.304(d)

/s/ Stephen E. Summer
Stephen E. Summer
Supervisor, Environmental Services
SCANA Services, Inc.
220 Operation Way
Cayce, SC 29033
Phone: (803) 217-7357
E-mail: ssummer@scana.com

Attachment 1 – 10-mile Emergency Planning Zone for V.C. Summer Units 2 and 3

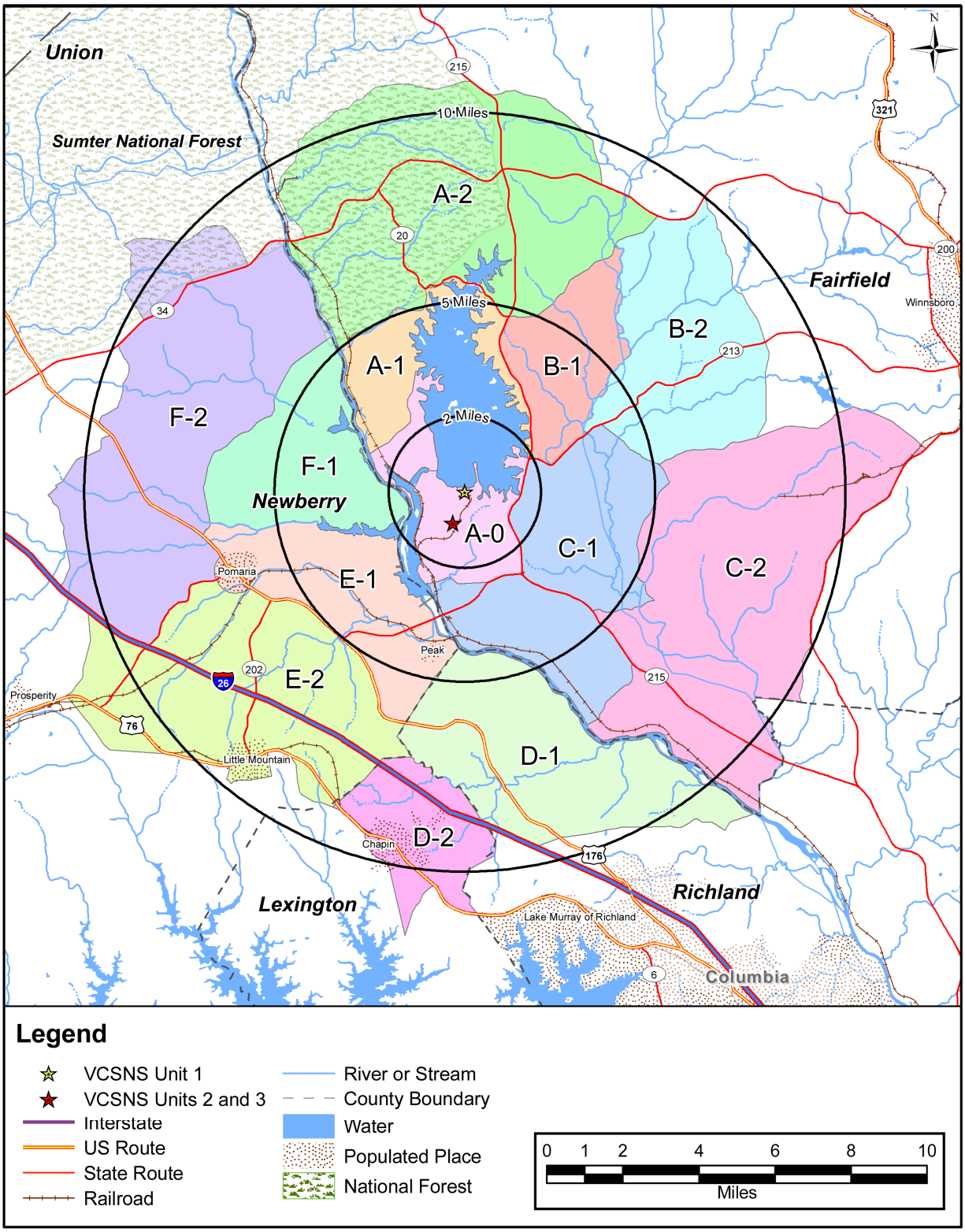

Figure 1-3 10-Mile Emergency Planning Zone