

BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA

DOCKET NO. 2008-196-E

IN RE: Combined Application of South Carolina) Electric and 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)) _____)	SOUTH CAROLINA OFFICE OF REGULATORY STAFF'S FOURTH CONTINUING "CHG" AUDIT INFORMATION REQUEST
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**TO: BELTON T. ZEIGLER, K. CHAD BURGESS, AND MITCHELL WILLOUGHBY,
ATTORNEYS FOR SOUTH CAROLINA ELECTRIC & GAS COMPANY:**

The South Carolina Office of Regulatory Staff ("ORS") hereby requests, pursuant to S.C. Code Ann. § 58-27-1570 (Supp. 2007) and as directed by the South Carolina Office of Regulatory Staff under S.C. Code Ann. § 58-27-40 (Supp. 2007), that South Carolina Electric & Gas Company (hereafter referred to as "SCE&G" or "the Company") provide responses in writing and under oath and serve the undersigned within ten (10) days after service of this request to ORS and CHG as set forth below in item VIII. If you are unable to respond to any of the audit requests, or part or parts thereof, please specify the reason for your inability to respond and state what other knowledge or information you have concerning the unanswered portion.

As used in these audit requests, "identify" means, when asked to identify a person, to provide the full name, business title, address and telephone number. As used in these audit requests, "address" means mailing address and business address. When asked to identify or provide a document, "identify" and "provide" mean to provide a full and detailed description of the document and the name and address of the person who has custody of the document. In lieu

of providing a full and detailed description of a document, you may attach to your responses a copy of the document and identify the person responsible for it. When the word "document" is used herein, it means any written, printed, typed, graphic, photographic, or electronic matter of any kind or nature and includes, but is not limited to, statements, contracts, agreements, reports, opinions, graphs, books, records, letters, correspondence, notes, notebooks, minutes, diaries, memoranda, transcripts, photographs, pictures, photomicrographs, prints, negatives, motion pictures, sketches, drawings, publications, and tape recordings.

IT IS THEREFORE REQUESTED:

- I. That all information requested below, unless otherwise specified, shall be limited to Company's South Carolina Electric Retail Operations in this docket or other period identified in the question.
- II. That all information shall be provided to ORS in the format requested.
- III. That all responses to the audit requests below be labeled using the same numbers as used herein.
- IV. That the requested information be punched for 3-ring binders with numbered tabs between each question.
- V. That if information requested is found in other places or other exhibits, reference shall not be made to those; instead, that the information be reproduced and placed in the audit request in the appropriate numerical sequence.
- VI. That any inquiries or communications relating to questions concerning clarification of the information requested below should be directed to John W. Flitter or Jay R. Jashinsky, of ORS.
- VII. That this entire list of questions be reproduced and included in front of each set of responses.
- VIII. That each question be reproduced and placed in front of each response provided. That unless otherwise specified, the Company provide six (6) paper copies of responses to ORS at 1441 Main Street, Suite 300, Columbia, SC 29201 and four (4) paper copies of responses to CHG with attention to Mark Crisp, Senior Consultant at C.H. Guernsey & Company at 1100 Circle 75 Parkway, Suite 950, Atlanta, GA 30339. In addition and if technically feasible, it is requested that the Company provide one (1) electronic version of the responses.

- IX. That all exhibits be reduced or expanded to 8 ½" x 11" format, where practical.
- X. If the response to any request is that the information requested is not currently available, please state when the information requested will be available and provided to the ORS.
- XI. That in addition to the signature and verification at the close of the Company's responses, the Company witness(es) or employee(s) or agent(s) responsible for the information contained in each response be indicated.
- XII. This audit request shall be deemed to be continuing so as to require the Company to supplement or amend its responses as any additional information becomes available.
- XIII. For information requested herein where the information is kept, maintained, or stored using spreadsheets, please provide electronic versions of the spreadsheets, including the formulas used and embedded in the spreadsheet.
- XIV. Each answer should incorporate the requested information for South Carolina Generating Company, Inc. ("GENCO"), where applicable.

REQUESTS:

- CHG-4-1 The following questions concern the report to the board of directors dated August 1, 2007 which was provided in response to CHG Request No. 1-23:
 - a) Please provide the basis for the overnight (all-inclusive) construction cost of two Westinghouse nuclear plants at \$2,248 per KW, given on page 1.
 - b) Please give the current status of the contracts with wholesale customers that are shown in the table on page 6.
 - c) Please state whether the wholesale contracts shown on page 6 are assumed to continue after the given termination dates in the May update to SCE&G's IRP.
 - d) Please provide in electronic format (via CD) all spreadsheets used to support the results provided in this report.
 - e) Please provide the natural gas price forecast used in the analyses that were developed for this report.
- CHG-4-2 Is the nuclear construction cost given in response to CHG Request No. 1-26 (\$5,141 per KW) in 2007 dollars? If not, please provide the nuclear construction cost in 2007 dollars.
- CHG-4-3 Please provide all reasons for the large increase in nuclear construction cost from the August 1, 2007 report to the board of directors (\$2,248 per KW) to the cost given in the response to CHG Request No. 1-26 (\$5,141, per KW).

- CHG-4-4 Energy sales are forecast to grow by 1.3% for the next 15 years (see May 2008 IRP Update page 1). However, the average weather normalized sales growth from 2000 to 2007 is 1.73% and 1.92% for the period of 2001 to 2007. Explain the reasons behind the decline in the forecasted energy sales growth in the updated IRP.
- CHG-4-5 Summer peak demand is forecasted to grow by 1.7% for the next 15 years (see May 2008 IRP Update page 1). However, the average summer peak growth from 2000 to 2007 is 2.3% and, from 2001 to 2007 it is 2.77%. Explain the reasons behind the decline in the forecasted summer peak demand growth.
- CHG-4-6 Please provide the winter peak demands for the period of 2000 to 2007.
- CHG-4-7 How did the economic slowdown in early 2000 affect territorial energy sales as well as summer and winter demands? Please provide detailed economic assumptions and data behind the current load forecast including but not limited to population growth, economic growth projections, employment projections for the next 15 years.
- CHG-4-8 Early IRP load forecasts appear to consistently over-project the energy sales (for example, 2001 IRP overestimated energy sales by 6 to 10.5% for years up to 2007). Please explain the reasons behind the over-forecasts. To what degree is this related to model structure? To what degree is this related to underlying assumptions in the projected economic variables? Has SCE&G conducted quantitative analyses to determine the causes of the over-projection?
- CHG-4-9 What adjustments to the models has SCE&G made to correct for the possible biases in the forecasts from different versions of the models?
- CHG-4-10 Please provide a hard copy system map of the SCE&G generation, transmission and substation facilities, preferably one that is in color and is large enough to be able to easily distinguish the location, size and type transmission lines above 46 kV.
- CHG-4-11 Please provide electronic copies of (or access for detailed review of) all input data, assumptions, transmission planning criteria and guidelines, analyses, findings, conclusions, formal or informal reports and recommendations that result from all load flow studies that were performed in conjunction with the two new Summer nuclear units.
- CHG-4-12 Please provide electronic copies of (or access for detailed review of) all input data, assumptions, transmission planning criteria and guidelines, analyses, findings, conclusions, formal or informal reports and recommendations that result from all short circuit studies that were performed in conjunction with the two new Summer nuclear units.

- CHG-4-13 Please provide electronic copies of (or access for detailed review of) all input data, assumptions, transmission planning criteria and guidelines, analyses, findings, conclusions, formal or informal reports and recommendations that result from all system stability studies that were performed in conjunction with the two new Summer nuclear units.
- CHG-4-14 Please provide electronic copies of all other formal or informal reports prepared by SCE&G (or others) that summarize the recommendations for new and/or upgraded transmission facilities that is needed to integrate the two new Summer nuclear units into the transmission network.
- CHG-4-15 Please provide an electronic database (preferably in Excel format) that identifies all transmission lines within a 100 mile radius of the proposed new Summer nuclear units and provide the following information for those lines:
- a) Originating and terminating points (i.e., substation names)
 - b) Operating voltage
 - c) Length of line segment in miles
 - d) Size and type conductor
 - e) Ampacity of conductor (in amperes)
 - f) Thermal operating limit (in MVA)
- CHG-4-16 Please provide an electronic database (preferably in Excel format) that identifies all transmission substations within a 100-mile radius of the proposed new Summer nuclear units and provide the following information for those substations:
- a) Type substation (e.g., switching, transformation, distribution, etc.)
 - b) Capacity rating (summer and winter in kVa) of all transformers in the stations
 - c) Capacity rating of other equipment in amperes (e.g., switches or bus work in amperes, OCBs in kilo-amperes, etc.). The intent here is to determine what equipment might have to be uprated to accommodate the increase in both steady state load current or short circuit current as a result of the new Summer nuclear units
- CHG-4-17 Please provide a one-line diagram (or diagrams), if available, for the lines and substations referred to in the preceding questions.
- CHG-4-18 Please provide electronic copies of all studies that SCE&G has performed, or has been a party to, that analyzes the SCE&G transmission system in future years, near-term and long-term.

- CHG-4-19 Please provide an electronic data base (in PSS/E) used to prepare the load flow studies discussed in the preceding questions for the following years:
- a) Summer 2008
 - b) Summer 2013
 - c) Summer 2016
 - d) Summer 2019

Note: Guernsey utilizes the PSS/E model for transmission studies. Should the data be available in an alternate format, please advise us so that we can determine if a conversion to PSS format can be made.

- CHG-4-20 Provide the supporting calculation of the total estimated cost of the Project in nominal dollars shown in Exhibit F, Chart A. Provide this in EXCEL spreadsheet format with working equations.

- CHG-4-21 Provide the total Project Cost estimate for the Summer 2 and 3 units categorized as follows:

- a) COLA, Technology and Site Selection and Land Expenses
- b) EPC contract
- c) Construction of Site Infrastructure (Facilities, Rail, Cooling Towers, ect)
- d) Staffing and Training
- e) Project Management
- f) Initial Core / Fuel Load
- g) Permits, Insurance, Fees and Taxes
- h) Escalation and contingencies
- i) AFUDC

- CHG-4-22 Provide the estimated Total Project cash flow per year for each of the cost categories in above.

- CHG-4-23 Provide an estimate of the Total Project cost assuming that commercial operations date (“COD”) for Unit 1 is delayed one year beyond the current plan resulting in greater escalation of the firm parts of the contract and that costs that are not fixed or firm are 10% greater than the current estimate. Include any benefit from liquidated damages or other contractual provisions that could benefit SCE&G in this situation. Provide the work papers showing the development of this estimate.

- CHG-4-24 Referring to Response No. 2-60, explain why the performance of current Westinghouse plants is a reasonable basis for projecting the capacity factor for Summer 2 & 3.

- CHG-4-25 Describe the significant equipment differences between the AP1000 and current Westinghouse plants, such as Canned Rotor Reactor Coolant Pumps and explain how these differences were considered in Response No 2-60.

- CHG-4-26 Referring to Response No. 2-71, assuming that the 30 month construction delay occurs at the beginning, in the middle, and at the end of the construction period, provide an estimate of the impact on the capital cost of the project.
- CHG-4-27 Referring to Response No. 2-70, assuming that the project is delayed by 30 months, how would SCE&G replace the capacity and energy of the project during the delay and what is the estimated cost of the replacement capacity and energy?
- CHG-4-28 What contingencies has SCE&G applied in development of the Total Project cost?
- CHG-4-29 Referring to Response No. 2-87, provide a list of the technical weighting factors and the basis for these weighting factors.
- CHG-4-30 Referring to Response No. 2-89, provide copies of all document provided by Westinghouse related to the design life of the steam generators for Summer 2 & 3.
- CHG-4-31 Referring to Response No. 2-91, provide the work papers and supporting documents used in development of the projected non-fuel O&M for Summer 2 & 3.
- CHG-4-32 Referring to Response No. 2-103, what steps has SCE&G taken independently to confirm that the anticipated construction schedule is reasonable?
- CHG-4-33 Referring to Response No. 2-110, by "off ramps" is SCE&G referring to termination provisions in the EPC contract? Has SCE&G identified any specific points at which the project may be delayed or cancelled if conditions warrant?
- CHG-4-34 Referring to Response No. 2-122, please describe any specific measures that SCE&G has taken or will take to mitigate the risks identified in Exhibit J of the application.
- CHG-4-35 Please provide copies of all presentations or reports presented to the SCE&G Board of Directors related to the decision to construct new nuclear power plants to meet the projected demand and the decision to select the AP 1000 as the technology for these new plants.
- CHG-4-36 Referring to Response No. 2-124, is it correct that SCE&G has no procedures that control the process of contracting for large projects? If this is not correct, please provide a list and copy of all such procedures.
- CHG-4-37 Referring to Response No. 2-127, is it correct that SCE&G has no procedures that control the RFP process for large projects? If this is not correct, please provide a list and copy of all such procedures.

- CHG-4-38 Referring to Response No. 2-129, provide the bid evaluation documents which were used in evaluating the reactor technologies leading to the selection of the AP 1000.
- CHG-4-39 Referring to Response No. 2-130, provide the evaluation criteria and the weighting factors that were used in evaluation of the Summer 2&3 bids. Also provide a description of how the weighting factors were determined.
- CHG-4-40 Referring to Response No. 2-139, provide a copy of the Execution Plan for the Summer 2&3 project.
- CHG-4-41 Referring to Response No. 2-140, when will the formal business procedures for oversight and management of the project be available? Provide a copy of these documents when they are available.
- CHG-4-42 Referring to Response No. 2-145, provide the critical path for the project as it exists today.
- CHG-4-43 What is the current status of the COLA? Provide a schedule of the actions needed for completion of the COLA process.
- CHG-4-44 Does SCE&G plan to utilize an owner engineer for this project? If yes, who. If no, why not?
- CHG-4-45 Provide a list and schedule of Owner Scope items that SCE&G is responsible for providing.
- CHG-4-46 How has SCE&G considered interest rate risk in its evaluation of the project risks? Explain.
- CHG-4-47 Has SCE&G considered the use of hedges for key commodities? Explain.
- CHG-4-48 Explain the current plan for disposing of spent fuel from the project. How could failure of the Department of Energy to develop and license a spent fuel repository affect the viability and costs of the project?
- CHG-4-49 Describe the viability of the project in the absence of investment tax credits and/or carbon tax legislation.

SIGNATURE ON FOLOWING PAGE

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