## SOUTH CAROLINA OFFICE OF REGULATORY STAFF'S REVIEW OF THE

## SOUTH CAROLINA ELECTRIC & GAS COMPANY 4<sup>th</sup> QUARTERLY REPORT FOR THE PERIOD ENDING DECEMBER 31, 2009

ON THE

**BUDGET AND SCHEDULE** 

**OF** 

**V.C. SUMMER UNITS 2 & 3 CONSTRUCTION** 



March 17, 2010

South Carolina Electric & Gas Company ("SCE&G" or "the Company") submitted its 4<sup>th</sup> Quarterly Report ("Quarterly Report") on construction activities at its V.C. Summer Nuclear Station Units 2 & 3 ("Units 2 & 3") on February 16, 2009. The Quarterly Report covers the fourth quarter ending December 31, 2009, and is submitted pursuant to S.C. Code Ann. § 58-33-277 (Supp. 2009) of the Base Load Review Act ("BLRA"). The BLRA requires SCE&G to document the construction schedule, budget expenditures, completed activities, forecasts of activities to be completed, and any revisions to the original schedule and budget of Units 2 & 3.

On July 21, 2009, SCE&G filed with the Public Service Commission of South Carolina ("Commission") an "Update of Construction Progress and Request for Updates and Revisions to Schedules." This filing was entered as Docket No. 2009-293-E by the Commission and contained a request by the Company to update its Milestone Schedule. The updated Milestone Schedule set forth in Docket No. 2009-293-E revised the original BLRA Milestone Schedule by expanding the original 123 milestones to 146 milestones. The expansion to 146 milestones does not omit any original milestones but unbundles several of the 123 milestones into additional milestones to allow for closer tracking of specific activities and aligns the Milestone Schedule more closely with the Performance Measurement Baseline Schedule ("PMBS") as discussed below. On January 21, 2010, the Commission approved the "Update of Construction Progress and Request for Updates and Revisions to Schedules" (Docket No. 2009-293-E) in Order Number 2010-12. Accordingly, the Milestone Schedule approved in Order Number 2010-12 replaces the BLRA Milestone Schedule.

In addition to the Milestone Schedule, the South Carolina Office of Regulatory Staff ("ORS") also monitors the more detailed engineering, procurement and construction schedule, also known as PMBS. While the Milestone Schedule provides an overall assessment of the construction progress, the PMBS allows specific day-to-day construction monitoring. The PMBS is a contractual schedule used by Westinghouse Electric Company ("WEC") and Shaw (together as "the Consortium") and SCE&G to establish scheduling goals, forecasts of cashflow and accountabilities required in the Engineering, Procurement and Construction ("EPC") contract. The PMBS contains completion dates, payment dates, and critical dates for completion of certain activities prior to the start of other activities. The PMBS will change over time due to numerous internal and external influences such as weather, delivery schedules, efficiency of construction, and manufacturing. The schedule changes are normal to any construction project of this magnitude and complexity; however, the substantial completion dates for Units 2 & 3, April 2016 and January 2019, with associated contingency, may not change without Commission approval.

Pre-construction activities based on the PMBS are on schedule. At the completion of the  $4^{th}$  quarter, all work activities scheduled to be completed by December 31, 2009 were completed. ORS's review of the PMBS does not identify any pre-construction issue that may impact the substantial completion dates.

ORS continues to be concerned with the review and approval process on Design Control Document ("DCD") Revision 17 ("DCD-17") related to the Shield Building reanalysis and other activities. ORS's requests to attend closed meetings between Westinghouse and the NRC have been denied. Although denied access to NRC and WEC closed meetings, ORS met with

Westinghouse on December 17, 2009 in an effort to obtain information on the NRC review process. To further monitor the progress of the DCD issues ORS requested, and was granted, quarterly meetings with WEC for more detailed status updates.

ORS understands that WEC is preparing final design summarization documentation related to DCD-17 for submittal to the NRC in Spring 2010. This submittal is one month later than expected when ORS completed its 3rd Quarter Review. The NRC cannot move forward to the Final Safety Evaluation Report and issuance of the COL until DCD-17 issues are closed. Timely resolution of NRC issues with WEC is required to support not only SCE&G's construction schedule, but the issuance of all applications before the NRC requesting a Combined License ("COL") to operate an AP1000 unit. Accordingly, the NRC questions to Westinghouse through the DCD are affecting all owners of AP1000 units, not just SCE&G. The owners of AP1000 units are working together to assist Westinghouse in resolving matters before the NRC. In addition, ORS is communicating with agency counterparts in other states for comparison of information.

SCE&G stated in its Quarterly Report ending December 31, 2009 that it does not expect the COL to be issued by the NRC prior to late 2011 or early 2012. The current PMBS shows an expected COL issuance date of July 2011. SCE&G is following two tracks to address the schedule timing: (1) SCE&G is working with the Consortium to formulate a strategy to accommodate the schedule difference by investigating changes to the schedule that will allow multiple activities to proceed simultaneously, and (2) SCE&G, with other AP1000 owners, is working closely with WEC and the NRC to address issues with DCD-17. In addition, SCE&G created a Contingency Team tasked with reviewing all construction activities to determine if there are areas where the schedule can be shortened through, for example, the use of multiple work-shifts and weekend work schedules to absorb any potential delays. SCE&G is working with the Consortium to identify potential strategies that will accelerate non-nuclear construction prior to receiving the COL. Implementing these strategies is expected to free construction resources to focus on nuclear related activities and accelerate nuclear construction once the COL is issued.

The overall construction schedule is aggressive and swift resolution to DCD-17 should not affect the substantial completion dates for Units 2 & 3. However, if slippage for resolution of DCD-17 continues and the COL issuance is delayed into 2012, there may be impacts to the overall schedule.

With respect to the timing of the 146 activities on the Milestone Schedule, the 4<sup>th</sup> Quarter Report indicates, and ORS has verified, that as of December 31, 2009, 21 activities have been accelerated; 6 activities have been pushed into the future; and 119 activities are unchanged. (It should be noted that these numbers are overall numbers and not individually reflected in the tables below. It should also be noted that Milestone Schedule activity may be accelerated up to 24 months or delayed up to 18 months without further Commission approval.)

As to the completion status of the 146 milestones, 44 activities have been completed and 102 activities remain to be completed. The Milestone Schedule continues to meet the schedule within the parameters of the 18-month window as approved in BLRA Order 2010-12. All milestones scheduled for completion in the 4<sup>th</sup> Quarter have been completed.

Table 1 below summarizes the completion status of the Milestone Schedule as of December 31, 2009, and as compared to the Milestone Scheduled approved in BLRA Order 2010-12. Table 1 lists milestones completed on-time, early, within the 18-month deviation and milestones that are not complete.

Table 1: Summary of the SCE&G Milestone Schedule compared to the "Approved BLRA" Order Number 2010-12, Docket No. 2009-293-E

Period of 2009-4Q and prior (44 Milestones Total)			
Milestones Completed on Schedule:	36, 81%		
Milestones Completed Early:	5, 12%		
Milestones Completed Within 18 Mos. Deviation:	3, 7%		
Milestones Not Complete:	0		
Milestones Outside 18 Mos. Deviation:	0		
Period of 2010-1Q and after (102 Milestones Total)			
Milestones Projected Completion on Schedule:	73, 71%		
Milestones Projected Completion Early:	20, 20%		
Milestones Projected Completed Within 18 Mos. Deviation:	9, 9%		
Note: SCE&G lists a total of 146 milestones in its 4 <sup>th</sup> Quarterly Report.			

ORS completed a year-end budget analysis which includes a comparison of actual costs through the 4th Quarter of 2009, forecasted cashflow, escalation and Allowance for Funds Used During Construction ("AFUDC"). The forecasted costs continue to track below the approved budget in Order 2010-12. While AFUDC has increased above the amount reported in the 3<sup>rd</sup> Quarter Report to \$55.2 Million, corresponding reductions in escalation reduced forecasted cash flow by \$37.6 Million resulting in a net increase in AFUDC of \$17.6 Million. The overall effect of the escalation and AFUDC on the Five-Year Gross Construction Cost continues to support the approved budget. The projected capital cost (2007 Dollars) of \$4.5 Billion continues to be supported by contractual obligations of the EPC contract.

Analysis of AFUDC is important because the BLRA allows any Construction Work in Progress ("CWIP") not included in revised rates to continue to earn AFUDC. The Federal Energy Regulatory Commission ("FERC") sets and defines the AFUDC rate formula and the variables composing the formula. As such, the AFUDC rate changes based on various factors. The AFUDC rate is multiplied by CWIP to arrive at actual AFUDC. The current AFUDC rate as of the end of the 4<sup>th</sup> Quarter is 7.1%. The forecasted rate applied in Docket No. 2009-293-E was 5.87%. Actual AFUDC will likely increase as a result of variables in the AFUDC formula and the outstanding balance of CWIP.

The BLRA requires escalation rates to be shown using a five-year average. Based on the five-year average, escalation rates continue to decline and reduce the projected project cashflow. Specifically, the 2009 4<sup>th</sup> Quarter escalation using the five-year average shows a cashflow reduction of \$593.3 Million below the forecasted cashflow in Order 2010-12. A 10-year average, which is more in-line with the project construction schedule, produces a reduction of \$778.3 Million from the forecasted cashflow.

While AFUDC has increased over previous Quarters, as one would expect due to the carrying of CWIP, the decrease in escalation rates results in the project being under budget when compared to the approved forecast cashflow and 2007 capital dollars.

As of the 4<sup>th</sup> Quarter Report, SCE&G shows \$1.1 Million dollars have been spent from the contingency pool of \$438 Million. Currently, SCE&G is under budget for the actual contingency used versus the 2009 forecast of \$37.8 Million. SCE&G used \$1.1 million or 2.9% of the contingency forecasted for 2009. The contingency dollars that have been spent are largely associated with a change order as well as additional costs in the Owners Cost category. SCE&G forecasts the use of \$71 million contingency dollars in 2010.

There were several shifts in dollars across the eight (8) plant cost categories. The Firm with Fixed Adjustment B category increased due to Change Order #2 regarding the Limited Scope Simulator. Change Order #4 (pending finalization between the Consortium and SCE&G) caused an increase in the Firm with Indexed Adjustment category, an increase in Non-Labor Cost category, and a decrease in Actual Craft wages category. The last cost category, Owners Cost, increased due to updated projections. Examples of updated projections include cost sharing with Santee Cooper, increases in staffing projections, tax credits and increases in licensing, permitting, and regulatory costs. Movements of dollars between cost categories carry potential ramifications for the total cost of the project. Beginning with the 1<sup>st</sup> quarter report of 2010, SCE&G will begin providing ORS with a complete breakdown of all movement of costs between cost categories, why the movement is necessary, and how it affects the construction 2007 dollars and the total approved BLRA finance cost.

Current world-wide economic conditions continue to reduce cost escalation of the project. However, econometric forecasts are showing inflation beginning to increase as the economy improves. The Gross Domestic Product ("GDP"), as forecast by the U.S. Department of Commerce Bureau of Economic Analysis, indicates an increasing GDP rate over the next three years. While the GDP is not a specific indicator of increasing inflation, it is by its nature,

an indicator of increased spending which can lead to higher inflation. Therefore, ORS is monitoring the GDP for signs of growth. SCE&G also uses a GDP chained-price index as a planning tool for forecasting growth in Owner's Cost; thereby, creating a direct correlation between inflation as a component of GDP and cost forecasts.

During the current reporting period, there have been a number of significant activities initiated and completed. These activities are discussed below:

- ➤ During the last two Quarters the site received large "spool" reinforced concrete recirculating water pipe that will connect the operating units with the cooling towers. As of the end of the 4<sup>th</sup> Quarter, approximately 300+ pieces of the 700+ pieces were received and stored on site. Excavation of the recirculating pipe trench to Unit 2 began and bedding is scheduled to start in the early part of the 1<sup>st</sup> Quarter of 2010.
- The excavation of the Unit 2 "Table Top" (The area where Unit 2 will be located) is complete. Shaw and its subcontractor began installation of the soldier pile wall that will protect the excavation as it progresses to bedrock.
- ➤ Unit 3 Table Top is nearing completion to grade.
- ➤ Warehousing, storage and office complex buildings are underway in "construction city." These structures will support engineering, inspection, craft supervision, and indoor storage of delivered materials.
- ➤ The main plant access road intersection is complete and approved by SC Department of Transportation. The final surfacing for the main access road is ready for installation pending suitable weather conditions for installation. The bridge over Mayo's Creek is nearing completion and, depending on weather conditions, should be ready for paving along with the access road early in 2010.
- ➤ The area where the two large concrete batch plants will be located has been graded to final elevation and delivery of the components for construction of the batch plants is forthcoming.
- Installation of a site potable water system and electrical system is continuing on schedule to support the warehousing and office complexes as they come on-line.

The overall site pre-construction schedule continues to progress well. Weather conditions and the holiday season at the end of 2009 produced some minor delays in work activities. However, the Consortium has been able to make up lost time and all pre-construction schedules are being met.

In conclusion, the 4th Quarterly Report filed by SCE&G complies with the requirements of the BLRA and the Commission's Order. With the exception of DCD-17 issues, the construction is proceeding according to schedule and budget.

## SUBSTANTIAL ACTIVITIES OCCURRING SUBSEQUENT TO THE ISSUANCE OF THE 4th QUARTER REPORT

SCE&G's BLRA-required quarterly report covers the period through December 31, 2009 and is required to be made available 45 days after the end of the quarter. As a result there is a lag between the end of the quarter and the report. Previously in this report, ORS noted several items that occurred since December 31, 2009 and reiterates them below.

On January 21, 2010, the Commission approved the updated Milestone Schedule in Docket No. 2009-293-E which revises the BLRA Milestone Schedule by expanding the original 123 milestones to 146 milestones.

Based upon information received from the Company during 2010, ORS has heightened concern about the timely resolution of DCD-17. While the concern will remain until the issuance of the COL, ORS understands that WEC and the NRC are working jointly towards a resolution. ORS initiated meetings directly with Westinghouse for discussion of DCD issues. The next scheduled meeting with Westinghouse is March 17, 2010, at the construction site. In addition, SCE&G and ORS senior management met on Friday, February 26, 2010, and established a weekly conference call to enhance communications.

The NRC continues to hold industry meetings to address all activities associated with the deployment of the AP1000 technology and other technologies such as the Economic Simplified Boiling-Water Reactor ("ESBWR") and the US Advanced Pressurized-Water Reactor ("USAPWR"). In most cases, the NRC has determined that certain aspects of its meetings should be non-public to maintain confidentiality of commercial terms associated with different technologies. ORS has made requests of the NRC to allow ORS representation in the closed meetings due to ORS's regulatory responsibilities. ORS's requests have been denied and ORS continues to explore opportunities for it to be included in the NRC closed meetings.

As reported above, ORS has and will continue to be directly engaged in available avenues for information on the licensing and construction of the V. C. Summer Units 2 & 3.

March 4, 2010	Friends of the Earth appeal of BLRA Order before the South
	Carolina Supreme Court
March 5, 2010	WEC testing of shield building components at Purdue University
March 17, 2010	ORS meeting with WEC and SCE&G
March 17 & 18, 2010	NRC and WEC meeting on DCD-18
April 2010	NRC issues draft EIS
Spring 2010	WEC Submittal of Final Design Documentation for DCD-17
Summer 2010	NRC Advanced Safety Evaluation Report ("SER")

SCE&G's First Quarter 2010 Report is due 45 days after March 31, 2010. The 45 days falls on Saturday, May 15, 2010 resulting in the report being made available Monday, May 17, 2010.