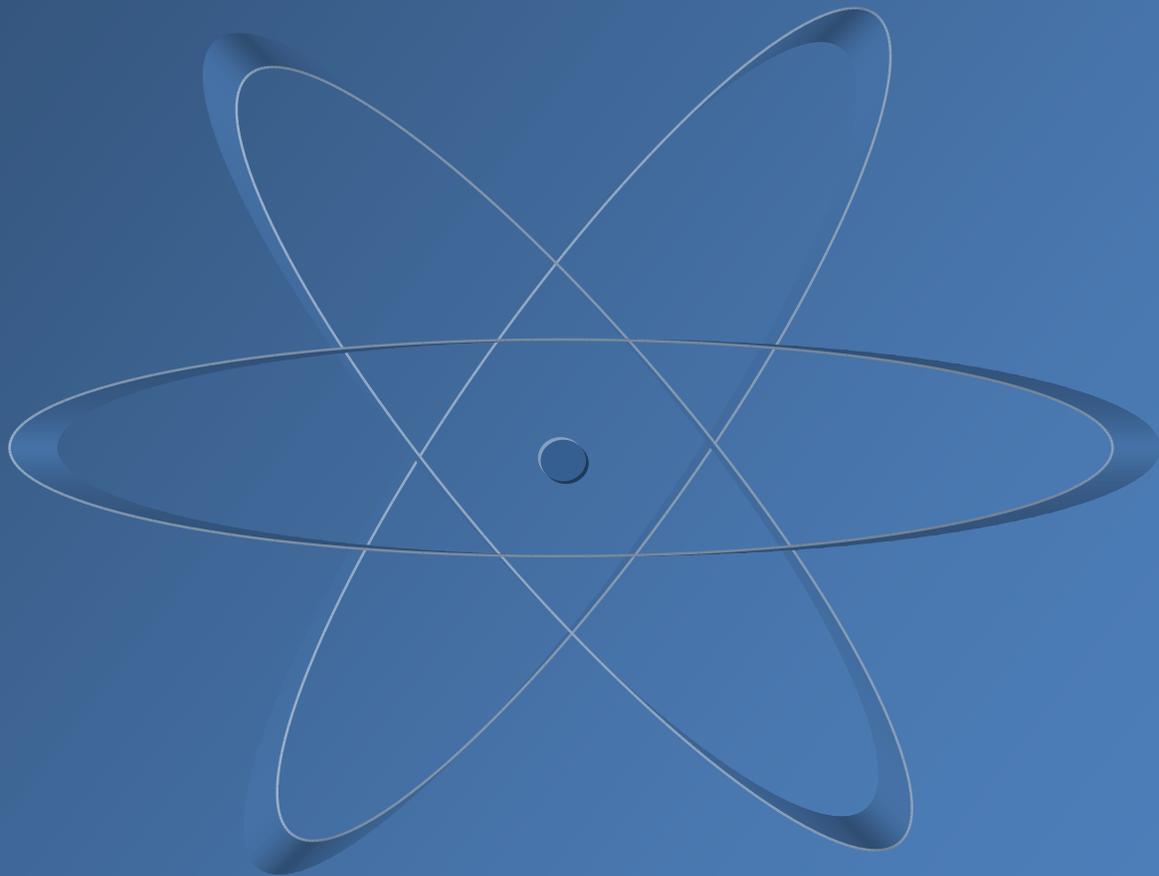


South Carolina Office of Regulatory Staff  
Review of South Carolina Electric & Gas Company's  
2011 3<sup>rd</sup> Quarter Report on  
V. C. Summer Units 2 and 3  
Status of Construction



*January 17, 2012*



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# Appendices

**Appendix A:** *Detailed Milestone Schedule as of September 30, 2011*

**Appendix B:** *Construction Site Pictures*

**Appendix C:** *V.C. Summer Units 2 & 3 Combined License FSER Press Release*

**Appendix D:** *Fitch Ratings Downgrades Santee Cooper Press Release*

**Appendix E:** *AP1000 Reactor Design Amendment Approval Press Release*

# Introduction

On March 2, 2009, the Public Service Commission of South Carolina (“Commission”) approved South Carolina Electric & Gas Company’s (“SCE&G” or the “Company”) request for the construction of V.C. Summer Nuclear Station Units 2 and 3 (the “Units”) and the Engineering, Procurement and Construction (“EPC”) Contract. This approval can be found in the Base Load Review Order No. 2009-104(A) filed in Docket 2008-196-E. On January 21, 2010, the Commission approved the Company’s request to update milestones and capital cost schedules in Order No. 2010-12, which is filed in Docket No. 2009-293-E. On May 16, 2011, the Commission approved SCE&G’s petition for revisions and updates to capital cost schedules in Order No. 2011-345, which is filed in Docket No. 2010-376-E.

The anticipated dependable capacity from the Units is approximately 2,234 MW, of which 55% (1,228 MW) will be available to serve SCE&G customers. South Carolina Public Service Authority (“Santee Cooper”) is expected to receive the remaining 45% (1,006 MW) of the electric output when the Units are in operation, and is paying 45% of the costs of the construction of the Units. The two companies continue to operate jointly to construct the Units under the terms established in their Bridge Agreement. Developments regarding the Bridge Agreement are discussed in further detail in the section “Notable Activities Occurring After September 30, 2011.”

SCE&G has disclosed that Santee Cooper is reviewing its level of ownership participation in the Units. During the 1<sup>st</sup> quarter of 2011, Santee Cooper issued a press release announcing it signed a Letter of Intent to negotiate a power purchase agreement with the Orlando Utilities Commission (“OUC”). This press release states that Santee Cooper is negotiating the sale of 10 to 20 percent of the capacity and output from Santee Cooper’s ownership interest in the Units. According to this press release, the Letter of Intent also includes as part of the potential transaction an option for OUC’s future acquisition of a portion of Santee Cooper’s ownership interest. Additionally, on July 20, 2011, Duke Energy Carolinas, LLC issued a press release stating that it signed a Letter of Intent with Santee Cooper for a potential minority interest (approximately 10 to 20 percent of Santee Cooper’s 45% ownership capacity of the Units). Lastly, on July 22, 2011, Santee Cooper issued a press release stating that it signed a Letter of Intent to negotiate a potential minority interest (roughly 5 to 20 percent of Santee Cooper’s 45% ownership of the capacity and output of the Units) with the Florida Municipal Power Agency (“FMPA”). Developments regarding Santee Cooper’s relationship with OUC and FMPA are discussed in further detail in the section “Notable Activities Occurring After September 30, 2011.”

On November 15, 2011, SCE&G submitted its 2011 3<sup>rd</sup> Quarter Report (“Report”) related to its construction of the Units. The Report is filed in Commission Docket No. 2008-196-E and covers the quarter ending September 30, 2011.

The Company’s Report is submitted pursuant to S.C. Code Ann. § 58-33-277 (Supp. 2010) of the Base Load Review Act (“BLRA”), which requires the Report to include the following information:

1. Progress of construction of the plant;
2. Updated construction schedules;
3. Schedules of the capital costs incurred including updates to the information required in Section 58-33-270(B)(5);
4. Updated schedules of the anticipated capital costs; and
5. Other information as the Office of Regulatory Staff may require.

With reference to Section 58-33-275(A) of the BLRA, ORS’s review of the Company’s Report focuses on SCE&G’s ability to adhere to (1) the approved construction schedule and (2) the approved capital cost schedules.

# Approved Schedule Review

## Milestone Schedule

As of September 30, 2011, ORS verified that of the Milestone Schedule's 146 activities:

- 63 milestone activities have been completed
- 83 milestone activities are yet to be completed (includes 9 delayed historical and 74 future milestones)

ORS also verified that during the 3<sup>rd</sup> Quarter of 2011:

- Two (2) milestone activities were scheduled to be completed
  - Zero (0) of these milestones have been completed
  - Two (2) of these milestones have not been completed

Per the Base Load Review Order, overall construction is considered to be on schedule if the substantial completion dates are not accelerated greater than 24 months or delayed greater than 18 months. As part of its review of the approved schedule, ORS identifies Caution Milestones. Caution Milestones are those that have been delayed ten (10) months or greater. If any Caution Milestone is delayed sixteen (16) months or greater, ORS may issue a formal notification to the Commission of the delay.

As of the end of the 3<sup>rd</sup> Quarter of 2011, ORS identified seven (7) Caution Milestones. Below is a status of these milestones:

- **Milestone Activity No. 60** – *Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion – Unit 2.*

**Status:** Delayed 13 months.

This activity was scheduled to be completed on December 31, 2010. Its revised target completion date is now January 31, 2012. The reactor coolant loop piping being manufactured by IBF, a subcontractor of Tioga located in Milan, Italy, is experiencing delays due to grain size deviations resulting from bending and heat treating activities. A specific grain size is required so that ultrasonic testing can determine the integrity of the piping when it is in use. A root cause analysis was performed. Piping segments will be remanufactured using new forgings, or in the case of Unit 2, potentially rededicating some Unit 3 forgings. A contingency

plan has been implemented to determine if ultrasonic testing can still be performed with satisfactory results on a grain size larger than currently specified. The Company is evaluating potential impacts to the site delivery date, but does not expect it to affect the substantial completion dates for the Units.

- **Milestone Activity No. 61** – *Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest – Unit 2.*

**Status:** Delayed 12 months.

This activity was scheduled to be completed on May 31, 2011. Its revised target completion date is now May 31, 2012. Mangiarotti, located in Italy, is the manufacturer for several major components of the AP1000 reactor, including the core makeup tank. It was previously reported that Westinghouse Electric Company (“WEC”) had identified quality assurance deficiencies during an audit of Mangiarotti related to its sub-suppliers. Past Stop Work Orders and failed sub-supplier qualifications are the major reasons for the delay.

SCE&G is monitoring the fabrication status of multiple major components at Mangiarotti to ensure related milestones remain within the specified contingency. SCE&G’s senior management travelled to the Mangiarotti facility in September 2011 to discuss the status of equipment for the project and the importance of meeting construction schedules. As a result, increased WEC oversight resources have been placed at the facility. SCE&G has identified a potential impact to component delivery dates, but does not expect these delays to affect the substantial completion dates for either of the Units. WEC is working with Mangiarotti to improve the schedule.

- **Milestone Activity No. 67** – *Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion – Unit 2.*

**Status:** Delayed 12 months.

This activity was scheduled to be completed on October 31, 2010. The revised target completion date is October 31, 2011. The delay in this milestone is also associated with Mangiarotti. See the above discussion related to Milestone Activity No. 61.

- **Milestone Activity No. 75** – *Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion – Unit 2.*

**Status:** Delayed 14 months.

This activity was scheduled to be completed on October 31, 2010. The revised target completion date is December 31, 2011. The delay in this milestone is also associated with Mangiarotti. See the above discussion related to Milestone Activity No. 61.

- **Milestone Activity No. 80** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing – Unit 2.*

**Status:** Delayed 14 months.

This activity was scheduled to be completed on January 31, 2011. The revised target completion date is March 31, 2012. The delay in this milestone is also associated with Mangiarotti. See the above discussion related to Milestone Activity No. 61.

- **Milestone Activity No. 83** – *Set Containment Vessel Ring #1 for Unit 2.*

**Status:** Delayed 10 months.

This activity was scheduled to be completed on April 3, 2012. The revised target completion date is February 25, 2013. The Containment Vessel Ring is being constructed on site by Chicago Bridge and Iron (“CB&I”). This is a construction milestone for placement of the Containment Vessel Ring in the nuclear island. This activity is impacted by the delay in the pouring of safety related nuclear concrete which is due to the delay in the issuance of the Combined Operating License (“COL”) by the Nuclear Regulatory Commission (“NRC”), as well as the sequence of other construction activities.

- **Milestone Activity No. 92** – *Start Containment Large Bore Pipe Supports for Unit 2.*

**Status:** Delayed 10 months.

This activity was scheduled to be completed on April 9, 2012. The revised target completion date is February 7, 2013. This milestone is a construction activity relating to the placement of the Containment Large Bore Pipe Supports for Unit 2. This activity is impacted by the delay in the pouring of safety related nuclear

concrete which is due to the delay in the issuance of the COL by the NRC, as well as the sequence of other construction activities.

SCE&G's Milestone Schedule attached to the Report indicates that overall construction is on schedule and does not identify any impact to Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively. However, the EPC Contract does not allow for any acceleration or delay in the substantial completion dates. The NRC's current schedule supports the issuance of the COL in early 2012. Notwithstanding the milestone schedule, the Company states in its Report that the issuance of the COL in this time frame would not allow Unit 2 to be completed by the EPC Contract substantial completion date of April 1, 2016 without changes to the current schedule.

ORS's review of the approved schedule and the EPC Contract confirms that the project remains on schedule given the schedule criteria established in the Base Load Review Order. ORS also confirms that a condition of the EPC Contract may not be met. That is, the substantial completion date of April 1, 2016 for Unit 2 – as set forth in the EPC Contract – will likely be delayed due to a delay in the issuance of the COL. Change Order No. 11, discussed in ORS's review of SCE&G's 2011 1<sup>st</sup> Quarter Report, called for a study consisting of three possible scenarios to assist in the Company's response to the COL delay. This study is under evaluation by SCE&G senior management. Appendix A shows details of the Milestone Schedule as of September 30, 2011.

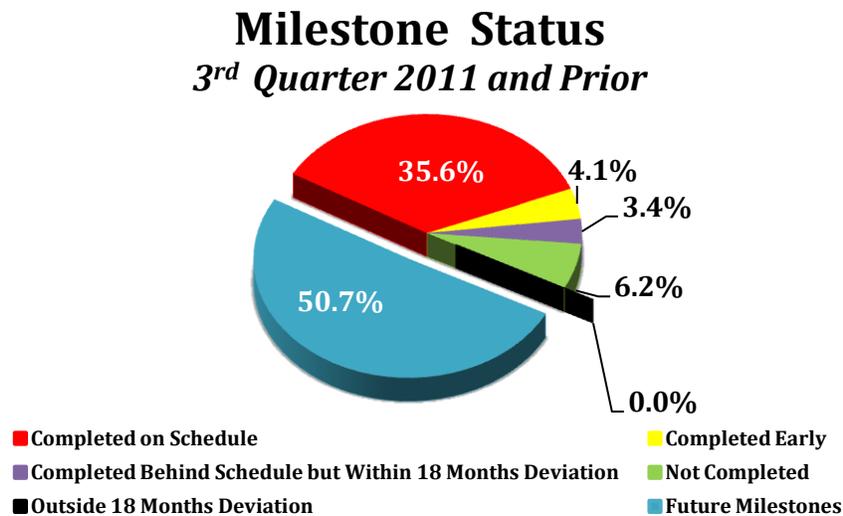
ORS reviews all invoices associated with the Milestone Schedule and during the 3<sup>rd</sup> quarter of 2011, there was one (1) invoice paid. ORS reviews invoices to ensure that the invoice amounts are consistent with the EPC payment schedule and determines that, where applicable as outlined in the EPC Contract, the escalation applied is consistent with the updated Handy Whitman inflation indices.

Table 1 shows the status of the 72 historical milestones and Chart 1 shows the status of all 146 milestones for the 3<sup>rd</sup> quarter of 2011 and prior.<sup>1</sup>

**Table 1:**

<b>Historical Milestones</b>		
<i>3<sup>rd</sup> Quarter 2011 and Prior</i>		
<b>72 of 146 Total Milestones</b>		
	<b># of Milestones</b>	<b>% of All Milestones<sup>2</sup></b>
<b>Completed on Schedule</b>	52	35.6%
<b>Completed Early</b>	6	4.1%
<b>Completed Behind Schedule but Within 18 Months Deviation</b>	5	3.4%
<b>Not Completed</b>	9	6.2%
<b>Outside 18 Months Deviation</b>	0	0.0%
<b>Total Historical Milestones</b>	<b>72</b>	<b>49.3%</b>

**Chart 1:**



<sup>1</sup> The numbers reported by ORS and SCE&G may vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed January 2, 2011 and the actual completion date is December 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being accomplished on schedule since it was completed within 30 days of the scheduled completion date.

<sup>2</sup> There may be a slight variance due to rounding.

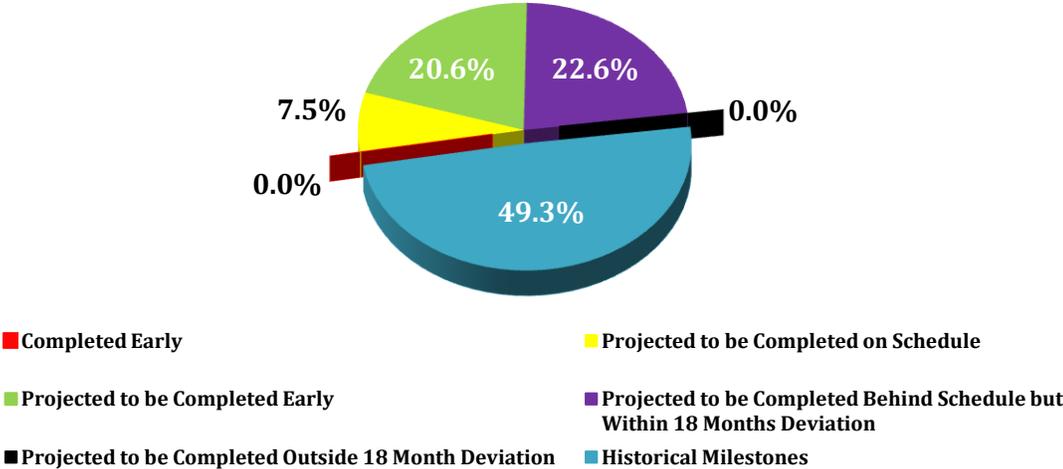
Table 2 shows the status of the 74 future milestones and Chart 2 shows the status of all 146 milestones for the 4<sup>th</sup> quarter 2011 and beyond.<sup>3</sup>

**Table 2**

<b>Future Milestones</b> <i>4<sup>th</sup> Quarter 2011 and Beyond</i> <b>74 of 146 Total Milestones</b>		
	<b># of Milestones</b>	<b>% of All Milestones<sup>4</sup></b>
<b>Completed Early</b>	0	0.0%
<b>Projected to be Completed on Schedule</b>	11	7.5%
<b>Projected to be Completed Early</b>	30	20.6%
<b>Projected to be Completed Behind Schedule but Within 18 Months Deviation</b>	33	22.6%
<b>Projected to be Outside 18 Months Deviation</b>	0	0.0%
<b>Total Future Milestones</b>	<b>74</b>	<b>50.7%</b>

**Chart 2:**

**Milestone Status**  
*4<sup>th</sup> Quarter 2011 and Beyond*



<sup>3</sup> The numbers reported by ORS and SCE&G may vary. For reporting purposes, ORS applies a 30 day threshold before a milestone is deemed accelerated or delayed. SCE&G uses a threshold less than 30 days. For instance, if a milestone is scheduled to be completed January 2, 2011 and the actual completion date is December 29, 2010, SCE&G deems the milestone as completed one month early since it is completed in a prior calendar month. ORS would report this milestone as being accomplished on schedule since it was completed within 30 days of the scheduled completion date.

<sup>4</sup> There may be a slight variance due to rounding.

## **Specific Construction Activities**

Major construction activities during the 3<sup>rd</sup> quarter of 2011 are listed below:

- Progress on the Heavy Lift Derrick (“HLD”) continues, with the carriage under construction and parts arriving on site. Issues previously identified with the HLD foot castings have been resolved, and the replacement foot is expected on site in time to support a readiness date of February 2012.
- The pre-construction work on the switchyard was previously behind schedule due to issues associated with design compliance, but significant progress has been made subsequent to the issuance of the Limited Notice to Proceed to the switchyard subcontractor at the end of the 2<sup>nd</sup> quarter. The switchyard is now on schedule to be energized in March 2013.
- Unit 2 excavation was completed on schedule. Blasting and removal of rock are complete in the Nuclear Island, and a satisfactory NRC inspection was conducted in the last quarter. The Unit 2 excavation is now being maintained pending issuance of the COL. Unit 2 excavation is a critical path activity.
- Unit 3 excavation activities continue to make progress this quarter, with the excavation nearing bedrock at the end of the 3<sup>rd</sup> quarter. An NRC geologic inspection is scheduled for October 4-7, subsequent to the end of the quarter. This is another critical path activity.
- Work on the design and testing of the safety-related concrete mix is ongoing. Testing of the first two safety-related concrete mix designs began in September 2011. Efforts are ongoing to accelerate the testing to avoid delays in the placement of safety-related concrete in the Unit 2 Nuclear Island.
- CB&I’s construction activities continue. CB&I began safety related welding work in July 2011 on containment vessel bottom head plates.
- Construction of the CA20 Platen inside the Module Assembly Building (“MAB”) was completed in September and a prototype of one of the CA20 sub-modules was received at the site. This prototype is being used for training purposes. Assembly of the CA20 module is a critical path activity.
- Waterproof membrane testing was completed in September 2011 for the SCE&G site, and selection of a qualified installation subcontractor is ongoing. Installation of the waterproof membrane is a critical path activity.

Photographs of 3<sup>rd</sup> quarter construction activities are shown in Appendix B.

## **Critical Path Activities**

The following activities are identified on the construction schedule as critical path activities scheduled to begin before September 30, 2011. The status of these critical path activities is based on a July 1, 2011 COL issue date.

- **Unit 2 Base Mat**

The preparation for pouring of the mud mat, scheduled to begin in June 2011, has not yet begun. As such, this critical path activity is behind schedule. Activities surrounding the placement of the mud mat are dependent on the issuance of the COL.

- **Unit 2 CA01 Module**

Field assembly of the Unit 2 CA01 module was scheduled to begin in June 2011 but has not yet begun. The module segments required for the CA01 module are being assembled by Shaw Modular Solutions ("SMS"), and the delivery of these segments is behind schedule. ORS will continue to closely monitor and report on SMS. This critical path activity is behind schedule.

- **Unit 2 Containment Vessel and Shield Building**

The containment vessel bottom head segments were delivered early, and assembly is currently on schedule. However, the critical path activity specific to the delivery of the components for the first ring of the containment vessel was scheduled for August 2011 and was delayed.

- **Unit 2 CA20 Module:**

Site assembly of the CA20 module was scheduled to begin in November 2010 but as of the end of the 3<sup>rd</sup> quarter only one (1) floor sub-module had been received. These module segments are being assembled by SMS. ORS will continue to closely monitor and report on SMS. This critical path activity is behind schedule.

- **Unit 3 Base Mat**

Excavation of the Nuclear Island is ongoing. This critical path activity is on schedule.

## **Transmission**

On February 28, 2011, SCE&G entered into a contract with Pike Electric for the permitting, engineering and design, procurement of material, and the construction of four (4) 230 kV transmission lines associated with the Units. This project will consist of two phases.

Phase 1 will consist of construction of two (2) new 230 kV transmission lines in support of Unit 2: the VCS1–Killian Line and the VCS2–Lake Murray Line. The VCS1–Killian Line will connect the existing V.C. Summer Switchyard 1 to the Company’s existing Killian Road 230 kV Substation. The VCS2–Lake Murray Line will connect the newly constructed Switchyard (“Switchyard 2”) to the Company’s existing Lake Murray 230 kV Substation. Switchyard 2 will allow the connection of both the Unit 2 and Unit 3 generators to the grid. Also, two new 230 kV interconnections between Switchyard 1 and Switchyard 2 will be constructed. Material procurement began in the 3<sup>rd</sup> quarter of 2011 for Phase 1, with initial deliveries expected in the 1<sup>st</sup> quarter of 2012.

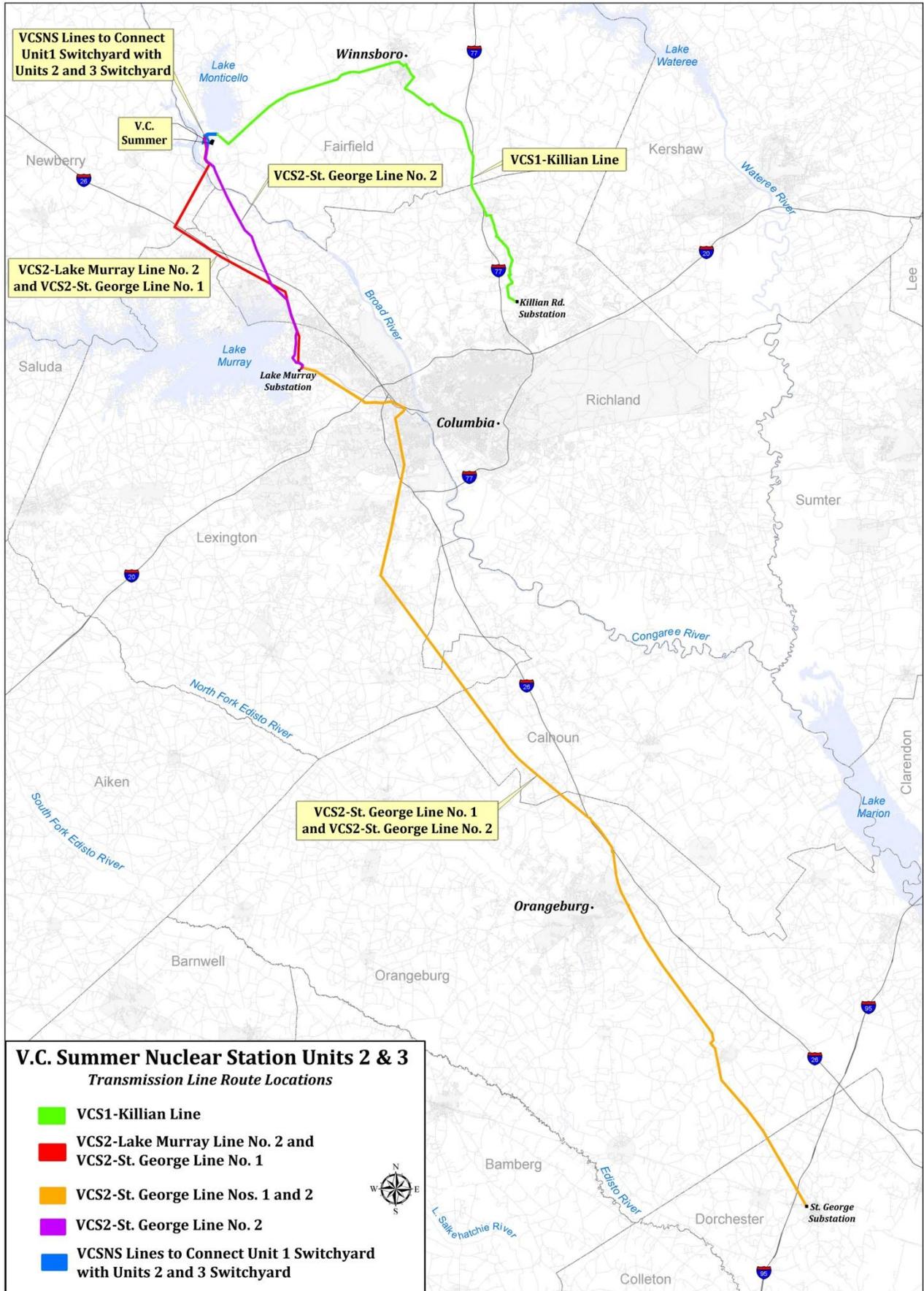
Phase 2 will consist of construction of two (2) new 230 kV transmission lines in support of Unit 3: VCS2–St. George Line #1 and VCS2–St. George Line #2. Both of these lines will connect Switchyard 2 to the yet-to-be constructed St. George Substation. Also, a third 230 kV interconnection between Switchyard 1 and Switchyard 2 will be constructed.

The four (4) new transmission lines will occupy existing transmission right-of-way corridors except for approximately six (6) miles of the VCS1–Killian Line corridor. SCE&G commenced right-of-way acquisition on the Blythewood–Killian segment of the VCS1–Killian Line on March 22, 2011.

SCE&G has completed the Siting and Environmental Reports for Unit 2 lines in support of its application for a Certificate of Environmental Compatibility, Public Convenience & Necessity. On August 9, 2011, an application was filed with the Commission in Docket No. 2011-325-E. A hearing was scheduled for October 27, 2011, and the application was approved by the Commission subsequent to the end of the quarter on December 21, 2011.

Map 1 shows the geographical location of the four (4) transmission lines associated with the Units.

# Map 1: New Transmission Lines Supporting V.C. Summer Units 2 & 3



## **Change Orders**

During the 3<sup>rd</sup> quarter of 2011, no change orders were executed. The terms of Amendment No. 2 to the EPC Contract were negotiated during the quarter, which incorporate Change Orders 3 and 5-11 into the EPC Contract. Change Order No. 12 was approved by the Company subsequent to the end of the quarter, and is discussed in the section “Notable Activities Occurring After September 30, 2011.”

Table 3 details all Change Orders and Amendments. A list of definitions for each type of change order is found below.

- **Contractor Convenience:** These changes are requested by the Contractor. They are undertaken at the Contractor’s own expense, and are both generally consistent with the contract and reasonably necessary to meet the terms of the contract.
- **Entitlement:** The Contractor is entitled to a change order in the event certain actions occur, including changes in law, uncontrollable circumstances, and other actions as defined in the contract.
- **Owner Directed:** These changes are requested by the Company.

**Table 3:**

Change Orders and Amendments					
No.	Summary	Cost Categories Involved	Type of Change	Date Approved	Status
1	Operator training for WEC Reactor Vessel Systems and Simulator training	Fixed Price with 0% escalation <sup>5</sup>	Owner Directed	7/22/2009	Approved
2	Limited Scope Simulator	Firm Price	Owner Directed	9/11/2009	Approved
3	Repair of Parr Road	Time and Materials	Owner Directed	1/21/2010	Approved
4	Transfer of Erection of CA20 Module from WEC to Shaw	Target Price work shifting to Firm Price	Contractor Convenience	N/A	Superseded by #8
5	<i>*Supplements Change Order #1*</i> Increased training by two weeks	Fixed Price with 0% escalation <sup>5</sup>	Owner Directed	5/4/2010	Approved
6	Hydraulic Nuts	Fixed Price	Owner Directed	7/13/2010	Approved
7	St. George Lines 1 & 2	Firm and Target Price Categories	Entitlement	7/13/2010	Approved
8	Target to Firm/Fixed Shift	Target, Firm and Fixed Price Categories	Owner Directed	4/29/2011	Approved
9	Switchyard Lines Reconfiguration	Firm and Target Price Categories	Owner Directed	11/30/2010	Approved
10	Primavera	Fixed Price with 0% escalation	Owner Directed	12/16/2010	Approved
11	COL Delay Study	Fixed Price, but would be applied to T&M Work Allowances	Owner Directed	2/28/2011	Approved

<b>Amendment #1</b>	Includes Change Orders 1 and 2	Executed on 8/2/2010
<b>Amendment #2</b>	Will incorporate Change Orders 3, 5-11	Under Development <sup>6</sup>

<sup>5</sup> Fixed Price with 0% escalation, but would be applied to Time and Materials Work Allowances by adding a new category for Simulator Instructor training and reducing Startup Support by commensurate amount.

<sup>6</sup> Amendment #2 was executed subsequent to the end of the quarter.

## Federal Licensing Activities

The NRC issued a Revised Review Schedule to SCE&G on October 29, 2010. The revised NRC schedule targets issuance of the Final Safety Evaluation Report (“FSER”) in June 2011.

On June 13, 2011 Design Control Document (“DCD”) Revision 19 incorporating AP1000 design changes was submitted to the NRC. DCD Revision 19 subsequently received concurrence from NRC staff in the FSER for the AP1000 Design Certification Amendment (“DCA”). The final rulemaking package for the AP1000 DCA is being prepared by the NRC staff and is expected to be provided to the NRC subsequent to the end of the quarter. Developments regarding DCD Revision 19 are discussed further in the section entitled “Notable Activities Occurring after September 30, 2011.”

On August 5, 2011, the NRC staff submitted its FSER for the AP1000 DCA. The cover letter to that document states, “the AP1000 FSER includes the staff’s evaluation and ultimate concurrence with all AP1000 design changes included in AP1000 DCD Revision 19.” The AP1000 FSER is available on the NRC’s website<sup>7</sup>. Subsequent to the issuance of the FSER for the AP1000 DCA, the FSER for the Units’ COL was issued on August 17, 2011. The press release is included as Appendix C, and the FSER for the Units’ COL is available on the NRC’s website<sup>8</sup>.

The NRC held the mandatory COL hearing for Southern Company’s Vogtle plant on September 27-28, 2011. This is the reference plant for the AP1000 design, and as such the hearing incorporated the NRC’s design specific construction questions. The NRC scheduled SCE&G’s COL hearing date for October 12-13, 2011. As the reference plant material was discussed at the September 27-28, 2011 hearing, the hearing for SCE&G will focus on site specific matters. Once the COL hearing for SCE&G is completed, a rulemaking decision from the NRC regarding the Combined Operating License for the Units is anticipated in the January 2012 time frame.

Based on ORS’s monitoring of the federal licensing activities, Table 5 on the next page provides the most current dates for the review of SCE&G’s COL.

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<sup>7</sup> <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1793/>

<sup>8</sup> <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1939/>

**Table 5:**

<b>Review Schedule for SCE&amp;G's Combined License Application</b>		
<b>Key Milestones</b>		<b>Completion Date</b>
<b>Application</b>		
Application Submitted		Completed – 03/27/2008
<b>Safety Review</b>		
<b>Phase A</b>	Requests for Additional Information (“RAIs”) and Supplemental RAIs	Completed – 09/10/2009
<b>Phase B</b>	Advanced Final Safety Evaluation Report (“SER”) without Open Items	Completed – 12/10/2010
<b>Phase C</b>	ACRS Review of Advanced Final SER	Completed – 03/26/2011
<b>Phase D</b>	Final SER Issued	Completed – 08/17/2011
<b>Environmental Review</b>		
<b>Phase 1</b>	Environmental Impact Statement scoping report issued	Completed – 07/15/2009
<b>Phase 2</b>	Draft Environmental Impact Statement (“DEIS”)	Completed – 04/16/2010
<b>Phase 3</b>	Response to Public Comments on DEIS	Completed – August 2010
<b>Phase 4</b>	Final Environmental Impact Statement	Completed – 04/15/2011
<b>Hearing</b>		
NRC holds Mandatory Hearing		Completed – 10/12/2011
<b>License</b>		
NRC Rulemaking Decision		<b>Target – January 2012</b>
NRC Issuance of Combined License		<b>Target – January 2012</b>

# Approved Budget Review

ORS's budget review includes an analysis of the 3<sup>rd</sup> quarter 2011 capital costs, project cash flow, escalation and Allowance for Funds Used During Construction ("AFUDC").

## **Capital Costs**

To determine how consistently the Company adheres to the budget approved by the Commission in Order No. 2011-345, ORS evaluates nine (9) major cost categories for variances. These cost categories are:

- Fixed with No Adjustment
- Firm with Fixed Adjustment A
- Firm with Fixed Adjustment B
- Firm with Indexed Adjustment
- Actual Craft Wages
- Non-Labor Cost
- Time & Materials
- Owners Costs
- Transmission Projects

ORS monitors variances due to project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders). At the end of the 3<sup>rd</sup> quarter of 2011, the total base project cost (in 2007 dollars) is \$4.270 billion. The Report shows the total base project cost has decreased by approximately \$103,000. This reduction reflects a decision by the Company that it would not seek recovery for \$103,000 in Community/Support Outreach costs that WEC and Shaw have included in costs to be charged under the EPC Contract.

## **Project Cash Flow**

As shown in Appendix 2 of the Company's Report, the cumulative amount spent on the project as of December 31, 2010 is \$861.183 million. The cumulative forecasted amount to be spent on the project by December 31, 2011 is \$1.261 billion.

With reference to Appendix 2, ORS evaluated the total revised project cash flow (line 37) with respect to the annual project cash flow, adjusted for changes in escalation (line 16). This evaluation provides a comparison of the Company's current project cash flow to the cash

flow schedule approved by the Commission in Order No. 2011-345. To produce a common basis for the comparison, line 16 adjusts the approved cash flow schedule to reflect the current escalation rates. As of September 30, 2011, the comparison shows the yearly maximum annual variance above and below the approved cash flow schedule through the life of the project. The comparison also shows that the cumulative project cash flow is forecasted to be approximately \$81.681 million under budget at the end of 2011. At the completion of the project in 2018, the cumulative project cash flow is forecasted to be approximately \$12.596 million under budget.

Table 6 shows the annual and cumulative project cash flows as compared to those approved in Order No. 2011-345.

**Table 6:**

<b>Project Cash Flow Comparison</b>			
<i>\$'s in Thousands <sup>9</sup></i>			
		<b>Annual Over/(Under)</b>	<b>Cumulative Over/(Under)</b>
<b>Actual <sup>10</sup></b>	<b>2007</b>	-	-
	<b>2008</b>	\$0	\$0
	<b>2009</b>	\$0	\$0
	<b>2010</b>	\$0	\$0
<b>Projected</b>	<b>2011</b>	(\$81,681)	(\$81,681)
	<b>2012</b>	\$51,371	(\$30,310)
	<b>2013</b>	\$66,259	\$35,949
	<b>2014</b>	\$5,148	\$41,098
	<b>2015</b>	\$106,418	\$147,515
	<b>2016</b>	\$33,106	\$180,621
	<b>2017</b>	(\$44,633)	\$135,988
	<b>2018</b>	(\$148,584)	(\$12,596)

<sup>9</sup> There may be slight variances in these numbers due to rounding.

<sup>10</sup> The actual comparison amounts equate to zero in accordance with the updated capital cost schedules approved in Order No. 2011-345

In summary, the Report shows a decrease in the total base project cost of approximately \$103,000 (in 2007 dollars). Due to escalation, a project cash flow of approximately \$12.596 million less is necessary to complete the project in 2018. These forecasts reflect the updated capital cost schedules approved in Order No. 2011-345, the current construction schedule and the inflation indices in the Company's Appendix 4.

### **AFUDC and Escalation**

The forecasted AFUDC for the total project as of the end of the 3<sup>rd</sup> quarter of 2011 is \$246.726 million and is based on a forecasted 5.87% AFUDC rate. This is a decrease of approximately \$2.622 million from the Company's 2011 2<sup>nd</sup> Quarter Report.

As previously reported by ORS in its reviews of SCE&G's Quarterly Reports, the decline in the five-year average escalation rates reduced the projected project cash flow. Current worldwide economic conditions continue to reduce the projected escalation cost of the project. Primarily due to the decrease in escalation rates, the overall project is considered under budget. More specifically, as of September 30, 2011, the forecasted gross construction cost of the plant is \$5.572 billion as compared to the approved gross construction cost of \$5.787 billion, which reflects a decrease of approximately \$215 million.

## **Additional ORS Monitoring Activities**

ORS continually performs the following activities as well as other monitoring activities as deemed necessary.

- Audits capital cost expenditures and resulting AFUDC in Construction Work in Progress ("CWIP")
- Physically observes construction activities
- Performs bi-monthly on-site review of construction documents
- Holds monthly update meetings with SCE&G
- Meets quarterly with representatives of WEC
- Participates in NRC Public Meetings regarding SCE&G Combined License Application and other construction activities

## **Notable Activities Occurring after September 30, 2011**

The BLRA allows SCE&G 45 days from the end of the current quarter to file its Report. Items of importance that occurred subsequent to the closing of the 3<sup>rd</sup> quarter 2011 are reported below.

### **Santee Cooper**

In October 2011, SCE&G and Santee Cooper executed two of three permanent construction and operating agreements for the project. The agreements grant SCE&G primary responsibility for oversight of the construction process and operation of the Units as they come online. These agreements replace the Bridge Agreement that the companies had been operating under since 2008. On January 10, 2012 Fitch Ratings issued a press release downgrading Santee Cooper's \$5.02 billion of outstanding revenue obligation bonds to AA- from AA. A contributing factor to credit rating downgrade cited in Fitch's press release was the decision by OUC and FMFA not to purchase a part of Santee Cooper's ownership share in the Units. The Fitch Ratings press release regarding the downgrade of Santee Cooper is included as Appendix D.

### **Shaw Modular Solutions**

In its review of SCE&G's 4<sup>th</sup> Quarter Report of 2010, ORS discussed deficiencies related to SMS's quality assurance programs which resulted in a manufacturing hold on all fabrication or rework activities. These issues were resolved and SMS received limited authorization to begin rework activities. Quality assurance program issues were again noted during a surveillance conducted September 12-16, 2011 by the Shaw. Upon learning the results of this visit, SMS instituted a self-imposed partial hold on module construction activities in mid-October. While the first segment of floor sub-module was received in June, the delivery of additional segments continues to be behind schedule. This impacts construction efforts on the CA01 and CA20 modules inside of the MAB. Efforts continue to rebaseline the schedule. ORS will continue to closely monitor and report on SMS.

### **Environmental Review**

The 401 and 404 permitting processes continue to progress. SCE&G responded to concerns provided by several resource agencies regarding the 401 Water Quality Certification, and the review period for these comments ended in October of 2011. The South Carolina Department of Health and Environmental Control approved issuance of the 401 Water Quality Certification on December 6, 2011. This allows the process for the 404 Army Corps of Engineers wetlands permit to proceed, and fulfills a requirement for issuance of the COL.

## **Federal Energy Regulatory Commission Permit**

On October 12, 2011 the Federal Energy Regulatory Commission issued the Company a license amendment to the existing project license for Monticello and Parr Reservoirs that authorizes the withdrawal of water for cooling and other site purposes from the Monticello Reservoir. The permit also allows for other construction activities within the boundaries of the reservoir project.

### **Licensing**

The NRC geologic inspection of the Unit 3 excavation, held October 4-6, 2011, was completed satisfactorily. SCE&G's COL hearing before the NRC was held October 12-13, 2011. As the reference plant material was discussed at the September 27-28, 2011 hearing, the October hearing for the Company focused on site specific matters. The NRC issued the final rulemaking decision approving the amended AP1000 reactor design (DCD Revision 19) on December 22, 2011. The rule was published in the Federal Register on December 30, 2011. Generally there is a thirty day waiting period between the date a rule is published and the date it becomes effective, but the NRC voted to waive the waiting period and make the rule effective immediately upon publication. This means the NRC is now in a position to vote on the issuance of the COL. The press release regarding the AP1000 reactor design amendment approval is included as Appendix E.

### **Change Orders**

Change Order No. 12 was approved by SCE&G subsequent to the end of the quarter. This change order incorporates Shaw's additional health insurance expenses arising from the Patient Protection and Affordable Care Act of 2010 ("PPACA"). There may be additional change orders relating to PPACA in the future for both WEC and Shaw as implementation of this legislation is finalized. If approved by the Commission, Change Order No. 12 would add approximately \$256,000 to the cost of the project.

*SCE&G's 2011 4<sup>th</sup> Quarter Report is due 45 days after December 31, 2011. ORS expects to continue publishing a review evaluating SCE&G's quarterly reports.*

## **Appendix A**

*Detailed Milestone Schedule as of September 30, 2011*

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
1	Approve Engineering, Procurement and Construction Agreement	5/23/2008		No	No	5/23/2008	
2	Issue Purchase Orders ("P.O.") to Nuclear Component Fabricators for Units 2 and 3 Containment Vessels	12/3/2008		No	No	12/3/2008	
3	Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator - First Payment - Unit 2	8/31/2008		No	No	8/18/2008	
4	Contractor Issue P.O. to Accumulator Tank Fabricator - Unit 2	7/31/2008		No	No	7/31/2008	
5	Contractor Issue P.O. to Core Makeup Tank Fabricator - Units 2 & 3	9/30/2008		No	No	9/30/2008	
6	Contractor Issue P.O. to Squib Valve Fabricator- Units 2 & 3	3/31/2009		No	No	3/31/2009	
7	Contractor Issue P.O. to Steam Generator Fabricator - Units 2 & 3	6/30/2008		No	No	5/29/2008	1 Month Early
8	Contractor Issue Long Lead Material P.O. to Reactor Coolant Pump Fabricator - Units 2 & 3	6/30/2008		No	No	6/30/2008	
9	Contractor Issue P.O. to Pressurizer Fabricator - Units 2 & 3	8/31/2008		No	No	8/18/2008	
10	Contractor Issue P.O. to Reactor Coolant Loop Pipe Fabricator - First Payment - Units 2 & 3	6/30/2008		No	No	6/20/2008	

Key:

Milestones Not  
CompletedCompleted  
Prior to Q3-11Current  
QuarterScheduled to  
Be Completed  
Q4-11ORS Caution  
Milestone

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
11	Reactor Vessel Internals – Issue Long Lead Material P.O. to Fabricator - Units 2 & 3	11/21/2008		No	No	11/21/2008	
12	Contractor Issue Long Lead Material - P.O. to Reactor Vessel Fabricator - Units 2 & 3	6/30/2008		No	No	5/29/2008	1 Month Early
13	Contractor Issue P.O. to Integrated Head Package Fabricator - Units 2 & 3	7/31/2009		No	No	7/31/2009	
14	Control Rod Drive Mechanism – Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 - First Payment	6/21/2008		No	No	6/21/2008	
15	Issue P.O.'s to Nuclear Component Fabricators for Nuclear Island Structural CA20 Modules	7/31/2009		No	No	8/28/2009	
16	Start Site Specific and Balance of Plant Detailed Design	9/11/2007		No	No	9/11/2007	
17	Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3	10/31/2008		No	No	10/31/2008	
18	Stream Generator - Issue Final P.O. to Fabricator for Units 2 & 3	6/30/2008		No	No	6/30/2008	
19	Reactor Vessel Internals - Contractor Issue P.O. for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3	1/31/2010		No	No	1/29/2010	
20	Contractor Issue Final P.O. to Reactor Vessel Fabricator - Units 2 & 3	9/30/2008		No	No	9/30/2008	

Key:

Milestones Not  
CompletedCompleted  
Prior to Q3-11Current  
QuarterScheduled to  
Be Completed  
Q4-11ORS Caution  
Milestone

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
21	Variable Frequency Drive Fabricator Issue Transformer P.O. - Units 2 & 3	4/30/2009		No	No	4/30/2009	
22	Start Clearing, Grubbing and Grading	1/26/2009		No	No	1/26/2009	
23	Core Makeup Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3	10/31/2008		No	No	10/31/2008	
24	Accumulator Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3	10/31/2008		No	No	10/31/2008	
25	Pressurizer Fabricator Issue Long Lead Material P.O. - Units 2 & 3	10/31/2008		No	No	10/31/2008	
26	Reactor Coolant Loop Pipe - Contractor Issue P.O. to Fabricator - Second Payment - Units 2 & 3	4/30/2009		No	No	4/30/2009	
27	Integrated Head Package - Issue P.O. to Fabricator - Units 2 & 3 - Second Payment	7/31/2009		No	No	7/31/2009	
28	Control Rod Drive Mechanism - Contractor Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3	6/30/2008		No	No	6/30/2008	
29	Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator - Second Payment - Units 2 & 3	10/31/2008		No	No	10/31/2008	
30	Start Parr Road Intersection Work	2/13/2009		No	No	2/13/2009	

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
31	Reactor Coolant Pump - Issue Final P.O. to Fabricator - Units 2 & 3	6/30/2008		No	No	6/30/2008	
32	Integrated Heat Packages Fabricator Issue Long Lead Material P.O. - Units 2 & 3	10/31/2009		No	No	10/1/2009	1 Month Early
33	Design Finalization Payment 3	1/31/2009		No	No	1/30/2009	
34	Start Site Development	6/23/2008		No	No	6/23/2008	
35	Contractor Issue P.O. to Turbine Generator Fabricator - Units 2 & 3	2/28/2009		No	No	2/19/2009	
36	Contractor Issue P.O. to Main Transformers Fabricator - Units 2 & 3	9/30/2009		No	No	9/25/2009	
37	Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3	11/30/2010		No	No	12/30/2010	Delayed 1 Month
38	Design Finalization Payment 4	4/30/2009		No	No	4/30/2009	
39	Turbine Generator Fabricator Issue P.O. for Condenser Material - Unit 2	8/31/2009		No	No	8/28/2009	
40	Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3	4/30/2009		No	No	4/30/2009	

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
41	Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3	5/31/2010		No	No	5/27/2010	
42	Design Finalization Payment 5	7/31/2009		No	No	7/31/2009	
43	Start Erection of Construction Buildings to include Craft Facilities for Personnel, Tools, Equipment; First Aid Facilities; Field Offices for Site Management and Support Personnel; Temporary Warehouses; and Construction Hiring Office	10/9/2009		No	No	12/18/2009	Delayed 2 Months
44	Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2	7/31/2009		No	No	8/28/2009	
45	Design Finalization Payment 6	10/31/2009		No	No	10/7/2009	
46	Instrumentation and Control Simulator - Contractor Issue P.O. to Subcontractor for Radiation Monitor System - Units 2 & 3	12/31/2009		No	No	12/17/2009	
47	<b>Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2</b>	<b>6/30/2011</b>		<b>No</b>	<b>No</b>	<b>7/29/2011</b>	
48	Turbine Generator Fabricator Issue P.O. for Moisture Separator Reheater/Feedwater Heater Material - Unit 2	4/30/2010		No	No	4/30/2010	
49	Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2	4/30/2010		No	No	2/18/2010	2 Months Early

Key:

Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
50	Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2	10/31/2011	12/31/2011	No	No		Delayed 2 Months
51	Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2	6/30/2009		No	No	6/30/2009	
52	Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2	11/30/2010		No	No	12/23/2010	
53	Start Excavation and Foundation Work for the Standard Plant for Unit 2	3/15/2010		No	No	3/15/2010	
54	Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2	2/28/2010		No	No	4/30/2010	Delayed 2 Months
55	Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2	2/28/2010		No	No	12/30/2010	Delayed 10 Months
56	Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2	5/31/2010		No	No	5/17/2010	
57	Complete Preparations for Receiving the First Module On Site for Unit 2	8/18/2010		No	No	1/22/2010	6 Months Early
58	Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2	4/30/2010		No	No	4/21/2010	
59	Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2	11/30/2010		No	No	11/16/2010	

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
60	Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2	12/31/2010	1/31/2012	No	No		Delayed 13 Months
61	Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2	5/31/2011	5/31/2012	No	No		Delayed 12 Months
62	Polar Crane Fabricator Issue P.O. for Main Hoist Drum and Wire Rope - Units 2 & 3	2/28/2011		No	No	2/1/2011	
63	Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3	6/30/2011		No	No	6/14/2011	
64	<b>Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2</b>	<b>10/31/2011</b>	<b>2/28/2012</b>	<b>No</b>	<b>No</b>		Delayed 4 Months
65	<b>Start Placement of Mud Mat for Unit 2</b>	<b>7/14/2011</b>	<b>1/9/2012</b>	<b>No</b>	<b>No</b>		Delayed 5 Months
66	Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2	1/31/2011		No	No	9/28/2010	4 Months Early
67	Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2	10/31/2010	10/31/2011	No	No		Delayed 12 Months
68	Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3	2/28/2012	4/30/2012	No	No		Delayed 2 Months

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
69	Begin Unit 2 First Nuclear Concrete Placement	10/3/2011	3/1/2012	No	No		Delayed 5 Months
70	Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2	9/30/2011	11/30/2011	No	No		Delayed 2 Months
71	Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2	6/30/2011		No	No	7/29/2011	
72	Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2	5/31/2011	1/31/2012	No	No		Delayed 8 Months
73	Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2	12/31/2012	5/31/2012	No	No		7 Months Early
74	Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2	12/31/2011	6/30/2012	No	No		Delayed 6 Months
75	Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2	10/31/2010	12/31/2011	No	No		Delayed 14 Months
76	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2	6/30/2011	1/31/2012	No	No		Delayed 7 Months
77	Design Finalization Payment 14	10/31/2011	10/31/2011	No	No		

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
78	Set Module CA04 For Unit 2	1/27/2012	11/7/2012	No	No		Delayed 9 Months
79	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2	6/30/2010		No	No	5/24/2011	Delayed 10 Months
80	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2	1/31/2011	3/31/2012	No	No		<b>Delayed 14 Months</b>
81	Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2	2/28/2012	7/31/2012	No	No		Delayed 5 Months
82	Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3	8/31/2013	7/31/2013	No	No		1 Month Early
83	Set Containment Vessel Ring #1 for Unit 2	4/3/2012	2/25/2013	No	No		<b>Delayed 10 Months</b>
84	Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2	3/31/2012	2/28/2012	No	No		1 Month Early
85	Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3	8/31/2013	1/31/2013	No	No		7 Months Early
86	Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3	9/30/2012	3/31/2012	No	No		6 Months Early

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
87	Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3	1/31/2013	11/30/2011	No	No		14 Months Early
88	Set Nuclear Island Structural Module CA03 for Unit 2	8/30/2012	6/12/2013	No	No		Delayed 9 Months
89	Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2	5/31/2012	5/31/2012	No	No		
90	Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	12/31/2012	10/31/2012	No	No		2 Months Early
91	Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2	7/31/2012	12/31/2012	No	No		Delayed 5 Months
92	Start Containment Large Bore Pipe Supports for Unit 2	4/9/2012	2/7/2013	No	No		<b>Delayed 10 Months</b>
93	Integrated Head Package - Shipment of Equipment to Site - Unit 2	10/31/2012	2/28/2013	No	No		Delayed 4 Months
94	Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2	11/30/2012	4/30/2013	No	No		Delayed 5 Months
95	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3	5/31/2013	4/30/2013	No	No		1 Month Early

Key:

Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
96	Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2	5/31/2012	12/31/2012	No	No		Delayed 7 Months
97	Start Concrete Fill of Nuclear Island Structural Modules CA01 and CA02 for Unit 2	2/26/2013	12/13/2013	No	No		Delayed 9 Months
98	Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2	4/30/2012	6/30/2012	No	No		Delayed 2 Months
99	Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2	2/28/2013	9/30/2012	No	No		5 Months Early
100	Deliver Reactor Vessel Internals to Port of Export - Unit 2	7/31/2013	7/31/2013	No	No		
101	Set Unit 2 Containment Vessel #3	4/17/2013	2/3/2014	No	No		Delayed 9 Months
102	Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2	3/31/2013	2/28/2013	No	No		1 Month Early
103	Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2	4/30/2013	3/31/2013	No	No		1 Month Early
104	Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	2/28/2014	11/30/2013	No	No		3 Months Early

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
105	Polar Crane - Shipment of Equipment to Site - Unit 2	5/31/2013	11/30/2013	No	No		Delayed 6 Months
106	Receive Unit 2 Reactor Vessel On Site From Fabricator	5/20/2013	2/21/2014	No	No		Delayed 9 Months
107	Set Unit 2 Reactor Vessel	6/18/2013	3/20/2014	No	No		Delayed 9 Months
108	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3	12/31/2013	11/30/2013	No	No		1 Month Early
109	Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3	8/31/2014	2/28/2014	No	No		6 Months Early
110	Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2	9/30/2013	8/31/2013	No	No		1 Month Early
111	Place First Nuclear Concrete for Unit 3	8/1/2013	8/1/2013	No	No		
112	Set Unit 2 Steam Generator	9/9/2013	6/19/2014	No	No		Delayed 9 Months
113	Main Transformers Ready to Ship - Unit 2	9/30/2013	6/30/2013	No	No		3 Months Early

Key:

Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
114	Complete Unit 3 Steam Generator Hydrotest at Fabricator	2/28/2014	3/31/2014	No	No		Delayed 1 Month
<b>115</b>	<b>Set Unit 2 Containment Vessel Bottom Head on Basemat Legs</b>	<b>11/21/2011</b>	<b>7/23/2012</b>	<b>No</b>	<b>No</b>		<b>Delayed 8 Months</b>
116	Set Unit 2 Pressurizer Vessel	1/24/2014	10/31/2014	No	No		Delayed 9 Months
117	Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3	2/28/2015	3/31/2015	No	No		Delayed 1 Month
118	Deliver Reactor Vessel Internals to Port of Export - Unit 3	6/30/2015	4/30/2015	No	No		2 Months Early
119	Main Transformers Fabricator Issue P.O. for Material - Unit 3	4/30/2014	7/31/2014	No	No		Delayed 3 Months
120	Complete Welding of Unit 2 Passive Residual Heat Removal System Piping	3/19/2014	12/16/2014	No	No		Delayed 9 Months
121	Steam Generator - Contractor Acceptance of Equipment At Port of Entry - Unit 3	4/30/2015	8/31/2014	No	No		8 Months Early
122	Refueling Machine - Shipment of Equipment to Site - Unit 3	5/31/2014	5/31/2014	No	No		
123	Set Unit 2 Polar Crane	4/3/2014	12/22/2014	No	No		Delayed 8 Months

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
124	Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3	6/30/2015	8/31/2015	No	No		Delayed 2 Months
125	Main Transformers Ready to Ship - Unit 3	9/30/2014	6/30/2015	No	No		Delayed 9 Months
126	Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3	12/31/2014	6/30/2014	No	No		6 Months Early
127	Start Electrical Cable Pulling in Unit 2 Auxiliary Building	12/26/2014	9/21/2015	No	No		Delayed 8 Months
128	Complete Unit 2 Reactor Coolant System Cold Hydro	8/3/2015	12/4/2015	No	No		Delayed 4 Months
129	Activate Class 1E DC Power in Unit 2 Auxiliary Building	3/5/2015	8/1/2014	No	No		7 Months Early
130	Complete Unit 2 Hot Functional Test	9/21/2015	3/1/2016	No	No		Delayed 5 Months
131	Install Unit 3 Ring 3 for Containment Vessel	7/30/2015	4/15/2015	No	No		3 Months Early
132	Load Unit 2 Nuclear Fuel	10/28/2015	10/28/2015	No	No		
133	Unit 2 Substantial Completion	4/1/2016	4/1/2016	No	No		

Key:	Milestones Not Completed	Completed Prior to Q3-11	Current Quarter	Scheduled to Be Completed Q4-11	ORS Caution Milestone
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
134	Set Unit 3 Reactor Vessel	10/1/2015	4/21/2015	No	No		5 Months Early
135	Set Unit 3 Steam Generator #2	12/22/2015	10/16/2015	No	No		2 Months Early
136	Set Unit 3 Pressurizer Vessel	5/16/2016	3/9/2016	No	No		2 Months Early
137	Complete Welding of Unit 3 Passive Residual Heat Removal System Piping	6/20/2016	4/21/2016	No	No		2 Months Early
138	Set Unit 3 Polar Crane	7/18/2016	4/27/2016	No	No		2 Months Early
139	Start Unit 3 Shield Building Roof Slab Rebar Placement	1/16/2017	8/2/2016	No	No		5 Months Early
140	Start Unit 3 Auxiliary Building Electrical Cable Pulling	4/6/2017	10/10/2016	No	No		5 Months Early
141	Activate Unit 3 Auxiliary Building Class 1E DC Power	6/9/2017	7/1/2016	No	No		11 Months Early
142	Complete Unit 3 Reactor Coolant System Cold Hydro	1/1/2018	11/17/2017	No	No		1 Month Early
143	Complete Unit 3 Hot Functional Test	2/15/2018	3/8/2018	No	No		

<b>Key:</b>	<b>Milestones Not Completed</b>	<b>Completed Prior to Q3-11</b>	<b>Current Quarter</b>	<b>Scheduled to Be Completed Q4-11</b>	<b>ORS Caution Milestone</b>
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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q3-11	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
144	Complete Unit 3 Nuclear Fuel Load	7/31/2018	7/12/2018	No	No		
145	Begin Unit 3 Full Power Operation	10/31/2018	11/15/2018	No	No		
146	Unit 3 Substantial Completion	1/1/2019	1/1/2019	No	No		

**Notes:**

White highlighting represents Future or Historical Milestones that have not been completed.
Grey highlighting represents Future or Historical Milestones that were completed prior to the 3rd Quarter 2011.
Yellow highlighting represents those Milestones that are scheduled to be or have been completed during the 3rd Quarter 2011. This is based on the schedule approved by the Commission in Order No. 2010-12
Green highlighting represents Future Milestones that are scheduled to be completed in the 4th Quarter of 2011. This is based on the schedule approved by the Commission in Order No. 2010-12
Red highlighting represents "Caution Milestones." Caution Milestones are those that are delayed by 10 months or greater.

## **Appendix B**

*Construction Site Pictures*

# Unit 2 Excavation



07/28/2011 02:34 PM

# Unit 3 Excavation



08/01/2011 02:21 PM

# Electrical Switchyard Construction



08/09/2011 07:52 AM

# Cooling Tower 2A



07/19/2011 11:45

# Module Assembly Building

CA 20 Platen



08/16/2011

# Heavy Lift Derrick Fabrication



## **Appendix C**

*V.C. Summer Units 2 & 3 Combined License FSER Press Release*



# NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: [opa.resource@nrc.gov](mailto:opa.resource@nrc.gov) Site: [www.nrc.gov](http://www.nrc.gov)

Blog: <http://public-blog.nrc-gateway.gov>

No. 11-150

August 18, 2011

## NRC ISSUES FINAL SAFETY EVALUATION REPORT FOR VIRGIL C. SUMMER NEW REACTORS APPLICATION

The Nuclear Regulatory Commission staff has completed its Final Safety Evaluation Report (FSER) for Combined Licenses (COL) for the proposed Virgil C. Summer Units 2 and 3 reactors. The NRC, in its FSER, concluded that there are no safety aspects that would preclude issuing the COLs for construction and operation of the proposed reactors at the site, near Jenkinsville, S.C. The FSER will be available on the NRC [website](#).

The FSER and Final Environmental Impact Statement (FEIS) will be provided to the Commission for the mandatory hearing phase of the licensing process. In the mandatory hearing, expected to take place later this year, the Commission will determine whether the staff's review supports the findings necessary to issue a license. In addition, because the Summer application references the amended AP1000 design, the Commission must complete the certification process for that design before it can render a mandatory hearing decision on the license.

South Carolina Electric & Gas (SCE&G) submitted its COL application for Summer on March 27, 2008. SCE&G is applying for permission to build and operate two AP1000 reactors at the Summer site, adjacent to the company's existing reactor, approximately 26 miles northwest of Columbia, S.C. Westinghouse submitted an application to amend the already-certified AP1000, a 1,100 megawatt electric design, on May 26, 2007. More information on proposed changes to the AP1000, as well as the staff's review, is available on the NRC [website](#).

The NRC's Advisory Committee on Reactor Safeguards (ACRS) independently reviewed those aspects of the application that concern safety, as well as the advanced safety evaluation report without open items (an earlier version of the FSER). The ACRS provided the results of its review to the Commission in a report dated Feb. 17. The NRC completed its environmental review and issued the FEIS for the Summer COL on April 15.

###

News releases are available through a free [listserv subscription](#) or by clicking on the [EMAIL UPDATES](#) link on the NRC homepage ([www.nrc.gov](http://www.nrc.gov)). E-mail notifications are sent to subscribers when news releases are posted to NRC's [website](#).

## **Appendix D**

*Fitch Ratings Downgrades Santee Cooper Press Release*

# Fitch Ratings

## Fitch Downgrades South Carolina Public Service Authority's \$5B Revenue Obligation Bonds to 'AA-' Ratings

10 Jan 2012 2:13 PM (EST)

Fitch Ratings-New York-10 January 2012: Fitch Ratings has assigned an 'AA-' rating to the South Carolina Public Service Authority's (Santee Cooper) \$235,665,000 2012 tax-exempt refunding series A, 2012 tax-exempt forward delivery series B and taxable refunding series C revenue obligation bonds, which are planned for sale in mid January.

Bond proceeds will be used to refinance a portion of the outstanding debt of Santee Cooper (includes 2002 refunding series A, 2002 refunding series D and 2003 refunding series A bonds).

In addition, Fitch has downgraded \$5.02 billion of outstanding revenue obligation bonds to 'AA-' from 'AA.'

The Rating Outlook is Stable.

### SECURITY

The bonds are secured by a gross lien on system revenues and are paid prior to operating expenses and other outstanding obligations.

### KEY RATING DRIVERS

**FINANCIAL METRICS LESS ROBUST:** Financial ratios have declined in recent years, reflecting slower growth in sales, higher operating costs and expenses associated with the development of new units at the Summer nuclear project. Future ratios are projected to remain stable but at lower levels than historically achieved, and the amount of short-term debt issued to fund capital projects could be meaningful.

**EXCESS CAPACITY AND OWNERSHIP:** The authority will have more excess generation than earlier anticipated and possible exposure to higher electric rates, given more moderate customer growth, less contracted sales to certain members of Central Cooperative beginning in 2013 and the decision by Orlando Utilities Commission and Florida Municipal Power Agency not to purchase part of Santee Cooper's ownership share of the new Summer units. The authority has a letter of intent with Duke Carolinas for the sale of a portion of its nuclear project and is looking for additional project participants. Contracts with other municipal systems for off-system sales from its other generating resources have also been executed.

**RESPONSIVE MANAGEMENT:** Utility management has a good track record of adapting to changing electric industry conditions by adjusting power supply strategy, planning for rate increases and setting reasonable financial targets. However, investors face a higher degree of uncertainty, given several large issues ahead of Santee Cooper over the next few years.

**LARGE AND DIVERSIFIED CUSTOMER BASE:** Santee Cooper is one of the nation's largest wholesale systems, serving either directly or indirectly (through Central Electric Cooperative), nearly one-third of the state of South Carolina.

### CREDIT PROFILE

Santee Cooper sells electricity to a diverse customer base throughout South Carolina. The authority owns and operates various power resources, with a combined summer power supply peak capability of 5,665 megawatts. Coal generation accounts for the largest component of the energy resource mix (74.7%), with nuclear power contributing 9.7%.

Santee Cooper is participating in the construction of the V.C. Summer units No. 2 and No. 3, which are expected to be commercial operable in 2016 and 2019, respectively. Capital expenditures for the years 2012 through 2014 are estimated at \$2.5 billion, which includes approximately \$1.84 billion for the nuclear project.

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Additional information is available at '[www.fitchratings.com](http://www.fitchratings.com)'. The ratings above were solicited by, or on behalf of, the issuer, and therefore, Fitch has been compensated for the provision of the ratings.

In addition to the sources of information identified in Fitch's Revenue-Supported Rating Criteria and U.S. Public Power Rating Criteria/Criteria for Rating Prepaid Energy Transactions, this action was informed by information from CreditScope.

**Applicable Criteria and Related Research:**

--'Revenue-Supported Rating Criteria', June 20, 2011;  
--'U.S. Public Power Rating Criteria', March 28, 2011;  
--'Criteria for Rating Prepaid Energy Transactions', dated Aug. 15, 2011.

**Applicable Criteria and Related Research:**

Criteria for Rating Prepaid Energy Transactions  
Revenue-Supported Rating Criteria  
U.S. Public Power Rating Criteria

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## **Appendix E**

*AP1000 Reactor Design Amendment Approval Press Release*



# NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: [opa\\_resource@nrc.gov](mailto:opa_resource@nrc.gov) Site: [www.nrc.gov](http://www.nrc.gov)

Blog: <http://public-blog.nrc-gateway.gov>

No. 11-226

December 22, 2011

## NRC APPROVES RULE TO CERTIFY AMENDED AP1000 REACTOR DESIGN

The Nuclear Regulatory Commission has voted to approve a rule certifying an amended version of Westinghouse's AP1000 reactor design for use in the United States. The amended certification, which will be incorporated into the NRC's regulations, will be valid for 15 years.

"The Commission is able to reach this final step in approving the amended AP1000 reactor design due to the staff's dedicated work ensuring the design meets NRC's safety requirements," said NRC Chairman Gregory B. Jaczko. "The design provides enhanced safety margins through use of simplified, inherent, passive, or other innovative safety and security functions, and also has been assessed to ensure it could withstand damage from an aircraft impact without significant release of radioactive materials."

The Commission has also found good cause to make the rule immediately effective once it is published in the *Federal Register*; the rule is expected to be published within seven business days. NRC rules normally become effective 30 days after publication. The *Federal Register* notice and the Commission's [directions to the staff](#) on publishing the approved rule will include a discussion on the good cause finding.

The design certification process provides for public participation and early resolution of safety issues for proposed reactor designs. NRC certification, in the form of a final rule, means the design meets the agency's applicable safety requirements. If an applicant for a nuclear power plant license references a certified design, the applicant need not submit safety information for the design. Instead, the license application and the NRC's safety review would address the remaining safety issues specific to the proposed nuclear power plant.

The AP1000 is a 1,100 megawatt electric pressurized-water reactor that includes passive safety features that would cool down the reactor after an accident without the need for human intervention. Westinghouse submitted an application for certification of the original AP1000 standard plant design on March 28, 2002; the NRC issued a rule certifying that design on Jan. 27, 2006.

Westinghouse submitted an application to amend the AP1000 on May 27, 2007. The NRC's extensive technical review of the amendment request focused on ensuring the agency's

safety requirements have been met. This transparent process, including input from the Advisory Committee on Reactor Safeguards, led to the NRC issuing a final safety evaluation report on the amended AP1000 in August. The NRC issued a proposed rule for the amended design in January. Stakeholders provided more than 12,000 comments on the proposed rule; the NRC staff considered these comments in developing the final rule.

The NRC is currently reviewing six Combined License applications that reference the amended AP1000 design. The NRC has certified three other standard reactor designs: the Advanced Boiling Water Reactor, System 80+, and AP600. The agency is currently reviewing applications to certify the Economic Simplified Boiling Water Reactor, the U.S. Advanced Pressurized Water Reactor and the EPR pressurized-water reactor.

More information about the amended AP1000 design review can be found on the NRC's website at: <http://www.nrc.gov/reactors/new-reactors/design-cert/amended-ap1000.html> .

###

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