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The Honorable Jocelyn Boyd
Chief Clerk and Administrator
Public Service Commission of South Carolina
101 Executive Center Drive
Columbia, South Carolina 29201

**Re: Quarterly Report of SCE&G Concerning Construction of V.C. Summer Nuclear Station Units 2 and 3**

Dear Ms. Boyd:

Enclosed plead find informational copies of South Carolina Electric and Gas Company's (the "Company" or "SCE&G) Quarterly Report (the "Report") for the period ending March 31, 2015, related to the construction of V.C. Summer Nuclear Stations Units 2 and 3 (the "Units"). This Report is being filed with the South Carolina Office of Regulatory Staff ("ORS") pursuant to the Base Load Review Act, S.C. Code Ann. § 58-33-277 (Supp. 2014) and the provisions of Order No. 2009-104(A) of the Public Service Commission of South Carolina (the "Commission").

Because this Report contains certain commercially sensitive information, SCE&G is filing both redacted (Public) and unredacted (Confidential) versions of this Report with the Commission and with ORS. For your convenience, we are provding you with ten (10) copies of the Public version of this Report. SCE&G is also providing one (1) copy of the Confidential version of this Report and is hereby petitioning the Commission to enter a confidentiality order protecting the commercially sensitive information contained therein from disclosure, as set forth below.

The Confidential version of this Report contains confidential information related to the pricing and pricing terms of the Engineering, Procurement and Construction Agreement (the "EPC Contract") between SCE&G and a consortium consisting of Westinghouse Electric Company, LLC and Chicago Bridge & Iron, formerly the Shaw Group, (collectively, the "Contractor"). The EPC Contract contains confidentiality provisions that require SCE&G to protect proprietary information that the Contractor believes to constitute trade secrets and to be commercially sensitive. The Contractor has requested that SCE&G maintain the confidentiality of certain information contained in **Appendix 2** and **Appendix 3**. This confidential information has been redacted from the Public Version of these appendices.

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In keeping with the Contractor's request and the terms of the EPC Contract, SCE&G respectfully requests that the Commission find that the Confidential version of the Report contains protected information and issue a protective order barring the disclosure of certain portions of Appendix 2 and Appendix 3 of the Report under the Freedom of Information Act, S.C. Code Ann. §§ 30-4-10 *et seq.*, 26 S.C. Code Ann. Regs. 103-804(S)(1), or any other provision of law, except in its public form. Pursuant to 26 S.C. Code Ann. Regs. 103-804(S)(2), the determination of whether a document may be exempt from disclosure is within the Commission's discretion. Such a ruling in this instance would be consistent with the Commission's prior rulings in Docket No. 2008-196-E, Docket No. 2009-211-E and Docket No. 2010-376-E. In those dockets, the Commission found, among other things, that the pricing and pricing terms of the EPC Contract are confidential, and issued a protective order barring the disclosure of such information. *See, e.g.*, Commission Orders Nos. 2008-467, 2008-696, as amended by Order No. 2008-739, 2009-888 and 2010-198 issued in Docket No. 2008-196-E; Commission Order No. 2009-401 issued in Docket No. 2009-211-E; Commission Order Nos. 2010-795, 2011-127, and 2011-177 issued in Docket No. 2010-376-E; and Commission Order Nos. 2012-415, 2012-621 and 2012-623 issued in Docket No. 2012-203-E.

To this end, and in accordance with Commission Order No. 2005-226, dated May 6, 2005, in Docket No. 2005-83-A, enclosed with this letter are the following:

1. A true and correct copy of the Confidential version of the Report in a sealed envelope marked "CONFIDENTIAL." The title page of the Confidential version of the Reprot is marked "CONFIDENTIAL VERSION" and each page of the Confidential version of the Report is marked "CONFIDENTIAL VERSION."

2. Ten copies of a redacted Public version of the Report.

In the event that anyone should seek disclosure of the unredacted Confidential version of the Report, SCE&G respectfully requests that the Commission notify SCE&G of such request and provide it and the Contractor with an opportunity to obtain an order from this Commission or a court of competent jurisdiction protecting the Confidential version of this document from disclosure.

If you have any questions regarding these matters, please contact me.

Sincerely,

**WOMBLE CARLYLE SANDRIDGE & RICE**
***A Limited Liability Partnership***

Belton T. Zeigler
Partner

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cc: Anthony James, Director of Nuclear Development
Shannon Bowyer Hudson, Esquire
K. Chard Burgess, Associate General Counsel

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# V.C. Summer Nuclear Station Units 2 & 3

## Quarterly Report to the South Carolina Office of Regulatory Staff Submitted by South Carolina Electric & Gas Company Pursuant to Public Service Commission Order No. 2009-104(A)

## Quarter Ending March 31, 2015

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## I. Introduction and Summary

### A. Introduction

This quarterly report is submitted by South Carolina Electric & Gas Company (SCE&G or the Company) to the Public Service Commission of South Carolina (the Commission) and the South Carolina Office of Regulatory Staff (ORS). It is submitted in satisfaction of the requirements of S.C. Code Ann. § 58-33-277 (Supp. 2014) and the terms of Commission Order No. 2009-104(A). This report provides updated information concerning the status of the construction of V.C. Summer Nuclear Station (VCSNS) Units 2 & 3 (the Units) and provides the current capital cost forecasts and construction schedules for the Units as of the close of the quarter. In Order No. 2012-884 dated November 15, 2012, the Commission approved updated construction and capital cost schedules for the Units. On March 12, 2015, the Company filed a petition with the Commission under the authority of S.C. Code Ann. § 58-33-270(E). The petition seeks review and approval of an updated construction schedule and capital cost schedule for the Units. Pending approval of the new schedules, which the Commission is considering under Docket No. 2015-103-E, the current schedules and forecasts presented in this report are compared against those approved in Order No. 2012-884.

### B. Structure of Report and Appendices

The current reporting period is the quarter ending March 31, 2015. The report is divided into the following sections:

Section I: Introduction and Summary;

Section II: Progress of Construction of the Units;

Section III: Anticipated Construction Schedules;

Section IV: Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B)(6) (the Inflation Indices);

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Section V: Updated Schedule of Anticipated Capital Costs; and

Section VI: Conclusion.

**Appendices 1, 2, and 4** to this report contain detailed financial, milestone and other information updating the schedules approved by the Commission in Order No. 2012-884. For reference purposes, **Appendix 3** provides a copy of the capital cost schedule for the project as approved in Order No. 2012-884. **Appendix 5** provides a list of the License Amendment Requests (LARs) filed by SCE&G with the Nuclear Regulatory Commission (NRC).

A confidential and a public version of this report and its attachments are being provided. Unless otherwise specified, all cost information reflects SCE&G's 55% share of the project's cost in 2007 dollars. Attached to the end of the report is a glossary of acronyms and defined terms used.

## C. Construction Schedule and Milestones

**The Unit 2 and Unit 3 Construction Schedules.** During the third quarter of 2013, WEC/CB&I (the Consortium) provided SCE&G with revised Unit 2 and Unit 3 construction schedules (Revised Unit 2 and Unit 3 Schedules). Those schedules reflected a reevaluation of the submodule production schedule at the CB&I facility in Lake Charles, Louisiana. Based on these schedules, it was anticipated that Units 2 and 3 would be completed in the last quarters of 2017 and 2018 or the first quarters of 2018 and 2019, respectively.

During the fourth quarter of 2013, the Consortium began a full re-baselining of the Unit 2 and Unit 3 construction schedules. That re-baselining incorporated a more detailed evaluation of the engineering and procurement activities necessary to accomplish the schedules. It also provided a detailed reassessment of the impact of the Revised Unit 2 and Unit 3 Schedules on engineering and design resource allocations, procurement, construction work crew efficiencies, and other items.

In the third quarter of 2014, SCE&G received preliminary information from the Consortium regarding a new revised, fully-integrated construction schedule (Revised, Fully-Integrated Construction Schedule) and thereafter received related cost information. SCE&G undertook an initial evaluation of this information and potential schedule mitigation strategies jointly with the Consortium's executive management. Based upon that initial evaluation, the Consortium indicated that the substantial completion date of Unit 2 was expected to occur by June 2019 and that the substantial completion date of Unit 3 would be expected approximately 12 months later.

During the first quarter of 2015, SCE&G determined that the joint review of the Revised, Fully-Integrated Construction Schedule and the evaluation of mitigation strategies had progressed sufficiently for SCE&G to recognize the Consortium's Revised,

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Fully-Integrated Construction Schedule as the project schedule for Base Load Review Act (BLRA) reporting purposes and other purposes related to the management of the project.

The Revised, Fully-Integrated Construction Schedule provides a new substantial completion date for Unit 2 of June 19, 2019, and a new substantial completion date for Unit 3 of June 16, 2020.

From the perspective of the Engineering, Procurement and Construction Agreement (EPC Contract), as amended, between SCE&G and WEC/CB&I, SCE&G has not released WEC/CB&I from any previous schedule commitments or other contractual commitments. The delays have been due to WEC/CB&I's failure to meet the schedules for structural module fabrication despite SCE&G's repeated efforts to raise this issue to the highest level of management and to insist upon improvements in performance. Accordingly, SCE&G has advised WEC/CB&I that it remains contractually obligated to satisfy the dates previously agreed to in the EPC Contract and other obligations under the EPC Contract, and liable for costs associated with the delays.

The Consortium continues to refine and update the construction schedule as designs are finalized, construction progresses, and additional information is received. At the close of the period, WEC/CB&I provided an updated schedule for the project that indicated that the substantial completion date for Unit 2 had been delayed until August 10, 2019, a delay of 52 days. The substantial completion date of Unit 3 has been advanced to May 28, 2020, an advance of 19 days. These changes are incorporated in the milestone report attached as **Appendix 1**. They remain subject to mitigation and further review by SCE&G. They reflect the changes that can be expected to occur from time to time in the ordinary course of reporting on the construction of the project by WEC/CB&I.

**Milestones.** There are 146 specific BLRA milestones for reporting purposes. As of March 31, 2015, 105 milestones have been completed. The remaining milestones have been delayed by the adoption of the Revised, Fully-Integrated Construction Schedule which delays the substantial completion date of Unit 2 by 27 months and of Unit 3 by 25 months. Comparing the scheduled milestone completion dates as of the close of the period to the milestone completion dates approved by the Commission in Order No. 2012-884, 41 milestones have been delayed. Of them, 31 have been delayed by more than 18 months.

This increase in delayed milestones is the result of the recognition, under the BLRA, of the Revised, Fully-Integrated Construction Schedule. On March 12, 2015, SCE&G filed a petition with the Commission (March 2015 Update Petition) requesting that new BLRA milestone dates be established based on this schedule. The March 2015 Update Petition is being considered in Docket No. 2015-103-E.

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**Costs as Reflected in the March 2015 Update Petition.** New cost schedules based on the Revised, Fully-Integrated Construction Schedule, including updates in SCE&G's cost as owner and change orders, indicate that the cost of the project increased from $4.5 billion, as approved in Order No. 2012-884, to $5.2 billion, an increase of $698 million. This amount includes an adjustment to reflect the recovery of liquidated damages of $86 million from the Consortium due to delay in substantial completion of the Units. It also reflects the partial payments, at 90%, of certain invoices under the EPC Contract that include charges SCE&G intends to challenge. All of these amounts are forecasted costs.

Based on these new cost and schedule forecasts, SCE&G filed the March 2015 Update Petition seeking Commission approval of a new capital cost schedule and construction schedule for the Units. The Revised, Fully-Integrated Construction Schedule included with the March 2015 Update Petition is based upon SCE&G's review and analysis of the information provided to the Company by the Consortium. As a result of its review and analysis and representations of the Consortium, SCE&G has recognized the construction schedule as the anticipated construction schedule for the project and as a reasonable and prudent schedule for approval by the Commission under the BLRA. The schedule changes are not the result of imprudence on the part of the Company in any respect.

As a contractual matter, SCE&G reserves all of its rights under the EPC Contract related to the delay in the construction schedule. SCE&G has not approved any change in the Guaranteed Substantial Completion Dates under the EPC Contract; SCE&G has not accepted the Consortium's contention that the new substantial completion dates are made necessary by delays that are excusable under the EPC Contract. SCE&G has not accepted responsibility for these increased EPC Contract costs and the related delays, and maintains that the Consortium is contractually responsible for the occurrence of the delay and other factors underlying the increased costs. The Consortium has not accepted responsibility for any part of these costs.

**Letter Related to Partial Payments.** Under the EPC Contract, SCE&G must pay WEC/CB&I at least 90% of certain types of disputed amounts, provided that WEC/CB&I has properly invoiced those amounts to SCE&G under the EPC Contract. Other provisions of the EPC Contract provide that SCE&G shall recoup from WEC/CB&I any payments made on disputed amounts if the dispute is resolved in SCE&G's favor.

WEC/CB&I takes the position that the additional costs related to delay and performance factors which SCE&G intends to challenge fall under the EPC Contract's provisions requiring 90% partial payments. SCE&G has not acquiesced in this position nor has it waived its claim that these charges are unjustified. However, in response to WEC/CB&I's position in this matter, SCE&G sent WEC/CB&I a letter on May 5, 2015, after the close of the reporting period, outlining certain steps SCE&G intends to take to withhold payment of invoiced amounts related to delay and performance factors.

SCE&G will apply the EPC Contract terms requiring partial payment of 90% of the additional costs that SCE&G determines to be due to delay or performance factors. SCE&G implemented these measures effective May 5, 2015, and reserves the right, in accordance with the EPC Contract, to recover from WEC/CB&I all of the 90% payments. SCE&G has also reserved all other rights, claims and defenses it has against WEC/CB&I concerning these amounts. If SCE&G recovers any past payments through negotiation or litigation, those amounts will be reflected as reductions to the capital cost of the project.

### D. Construction Costs and Cost Forecasts

Spending through December 31, 2015, in current dollars is forecasted to be approximately $963 million less than the capital cost schedule approved in Order No. 2012-884. This is primarily attributable to the delays in the construction schedule as discussed in Section I.C. Based on current cash flow forecasts, SCE&G anticipates that it will continue to spend amounts less than the forecasted amounts set forth in the current capital cost schedule approved by the Commission in Order No. 2012-884 until a revised capital cost forecast is approved by the Commission. The present cash flow forecast indicates that the Company will be able to complete the Units for $5.2 billion in 2007 dollars, which is $698 million more than the amount approved in Order No. 2012-884.

The current cost estimates include changes in timing of costs and shifts in costs among cost categories that occur in the normal course of managing the project. All amounts set forth in this Quarterly Report are based on SCE&G's existing 55% interest, except where expressly stated to be based upon 100% of the cost.

**Cost Comparisons.** In Order No. 2009-104(A), the Commission recognized that forecasts of Allowance for Funds Used During Construction (AFUDC) and escalation would vary over the course of the project and required those forecasts to be updated with each quarterly report. Escalation indices were issued in May 2015 for the period of July through December 2014 and have been used in forecasting the construction costs for the project that are presented here.

**Chart A** below compares the current capital cost forecast to the forecast presented in the last quarterly report. This chart shows an increase in Gross Construction Costs of $1.031 billion over the life of the project. With each quarterly update, a quarter that had been subject to the five-year escalation rate becomes subject to the one-year rate. The figures reported on **Chart A** also include the effect of calculating escalation on an updated cash flow projection for the project.



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**Chart A: Reconciliation of Capital Cost ($000)**

| Forecast Item | Projected @ 03/31/15 (Five-Year Average Escalation Rates) | Projected @ 12/31/14 (Five-Year Average Escalation Rates) | Change |
|---|---|---|---|
| Gross Construction | $6,827,402 | $5,795,986 | $1,031,416 |
| Less: AFUDC | $289,124 | $266,471 | $22,653 |
| Total Project Cash Flow | $6,538,278 | $5,529,515 | $1,008,763 |
| Less: Escalation | $1,291,640 | $981,110 | $310,530 |
| **Capital Cost, 2007 Dollars** | **$5,246,638** | **$4,548,405** | **$698,233** |

**Chart B** compares the current capital cost forecast to the forecast on which the Commission relied in adopting Order No. 2012-884. Chart B shows that the forecasted capital cost of the Units in 2007 dollars has increased by $698 million. Due to schedule delays, changes in forecasted escalation and AFUDC (see Section I.F. below) the cost of the plant in future dollars has increased by approximately $1.073 billion since Order No. 2012-884 was issued.

**Chart B: Reconciliation of Capital Cost ($000)**

| Forecast Item | Projected @ 03/31/2015 (Five-Year Average Escalation Rates) | As Forecasted and Approved In Order No. 2012-884 | Change |
|---|---|---|---|
| Gross Construction | $6,827,402 | $5,754,565 | $1,072,837 |
| Less: AFUDC | $289,124 | $237,715 | $51,409 |
| Total Project Cash Flow | $6,538,278 | $5,516,849 | $1,021,429 |
| Less: Escalation | $1,291,640 | $968,444 | $323,196 |
| **Capital Cost, 2007 Dollars** | **$5,246,638** | **$4,548,405** | **$698,233** |

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**Chart C** below shows the current forecast of the cost of the Units compared to the cost forecasts underlying the initial BLRA order, which was issued by the Commission in 2009, and the update orders that the Commission issued subsequently. The decline in capital cost forecasts in 2007 dollars between Order No. 2010-12 and 2011-345 reflects the removal of Owner's contingency amounts from the forecasts as required by the opinion of the Supreme Court of South Carolina in *South Carolina Energy Users Comm. v. South Carolina Pub. Serv. Comm'n*, 388 S.C. 486, 697 S.E.2d 587 (2010). This chart shows that the cost of the project in 2007 dollars has increased by $712 million since the initial forecasts and the cost of the project in future dollars is approximately $514 million above the initial forecast.

**Chart C: Summary of Nuclear Filings (billions of $)**

| Forecast Item | Order No. 2009-104(A) | Order No. 2010-12 | Order No. 2011-345 | Order No. 2012-884 | Projected @ 03/31/2015 |
|---|---|---|---|---|---|
| Capital Cost, 2007 Dollars | $4.535 | $4.535 | $4.270 | $4.548 | **$5.247** |
| Escalation | $1.514 | $2.025 | $1.261 | $0.968 | **$1.292** |
| Total Project Cash Flow | $6.049 | $6.560 | $5.531 | $5.517 | **$6.538** |
| AFUDC | $0.264 | $0.316 | $0.256 | $0.238 | **$0.289** |
| **Gross Construction** | **$6.313** | **$6.875** | **$5.787** | **$5.755** | **$6.827** |

## E. Escalation Rates

As provided in Order No. 2009-104(A), the most current one-year inflation indices are used to escalate costs occurring in the twelve-month period after the date of each quarterly report. The most current escalation indices are found in the Handy-Whitman January 2015 update that was issued in May 2015 and reports data for the period July to December 2014. Those rates are reflected in this report. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates. The forecasted costs provided here reflect SCE&G's calculations related to the WEC/CB&I

claims, which change the index applicable to Firm with Indexed Adjustment cost categories going forward from a floating Handy-Whitman adjustment to a fixed rate for the life of the project.

As shown on **Appendix 4**, utility construction cost escalation rates were at historically high levels during the period 2005-2008 and have since dropped. Current escalation rates are shown below on **Chart D**. When compared to the previous Handy-Whitman release, the most recent update shows an upward trend in the one-year average rates and a downward trend in the five-year average rates.

**Chart D: Handy-Whitman Escalation Rates**

| **Escalation Rate Comparison** | | |
|---|---|---|
| | **Jan-June 2014** | **July-Dec 2014** |
| **HW All Steam Index:** | | |
| One-Year Rate | **2.52%** | **3.17%** |
| Five-Year Average | **3.21%** | **2.94%** |
| Ten-Year Average | **4.35%** | **4.08%** |
| **HW All Steam/Nuclear Index:** | | |
| One-Year Rate | **2.52%** | **3.17%** |
| Five-Year Average | **3.21%** | **2.95%** |
| Ten-Year Average | **4.38%** | **4.10%** |
| **HW All Transmission Plant Index:** | | |
| One-Year Rate | **1.68%** | **2.52%** |
| Five-Year Average | **2.63%** | **1.88%** |
| Ten-Year Average | **4.05%** | **3.81%** |

## F. AFUDC

Consistent with Order No. 2009-104(A), SCE&G computes AFUDC based on the Federal Energy Regulatory Commission (FERC) approved methodology as applied to the balance of Construction Work in Progress (CWIP) that is outstanding between rate adjustments. SCE&G's projected AFUDC rate is currently 5.68%, compared to the rate of 5.28% that applied when Order No. 2012-884 was issued.



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### G. Compliance with the Commission-Approved Cumulative Project Cash Flow Target

The current Cumulative Project Cash Flow target for the project was adopted by the Commission in Order No. 2012-884. In Order No. 2009-104(A), the Commission provided that the applicable Cumulative Project Cash Flow target would be adjusted with each quarterly report to reflect updated escalation data.

**Appendix 2** provides the Commission-approved Cumulative Project Cash Flow target updated for current escalation data. The cash flow targets through December 2014 have been updated to reflect actual escalation rates. The cash flow targets for the first quarter of 2015 and beyond have been updated based on the most recently available inflation indices, which for purposes of this report, are the indices provided in May 2015 that report data for the period July through December 2014. When final actual indices for 2015 become available, the cash flow data for 2015 will be revised to reflect the actual escalation rates.

**Appendix 2** compares the approved Cumulative Project Cash Flow target to the current cumulative cash flow schedules for the project, which include actual costs where available and SCE&G's working forecasts of annual cash flows for future years. In addition, the project cash flow targets presented on **Appendix 2** for 2012 have been adjusted to reflect timing differences between the billing methodology under the EPC Contract and the calculation of the escalated cash flow targets under Order No. 2009-104(A). Under the EPC Contract, for periods where actual escalation rates are not available, WEC/CB&I bills SCE&G based on a rolling two-year average of the applicable Handy-Whitman rate and provides adjustments to reflect the actual rate when it is known. An adjustment has been made to **Appendix 2** target calculations to offset the timing differences that arise as a result of WEC/CB&I's approach to estimated billings and credits. This adjustment applies to those EPC Contract cost categories that are subject to indexed escalation.

## II. Progress of Construction of the Units

### A. Construction

The project continues to maintain an excellent safety record that exceeds industry expectations for projects of comparable size. While certain aspects of the work present challenges to the completion schedule, overall progress continues with approximately 3,500 WEC/CB&I personnel and subcontractor workers on site daily.

As of the end of the quarter, the critical path for both Unit 2 and Unit 3 is the fabrication of the Shield Building panels supplied by Newport News Industries (NNI). For that reason, Shield Building construction remains a focus area for SCE&G's oversight of the project. Secondary construction critical paths include the successful

assembly and setting in place of the CA01 module and construction of the Annex Building to support first energization of the plant for systems testing. These matters will be updated as WEC/CB&I continues its review of the construction schedule and as negotiations continue concerning schedule adjustments.

### 1. Unit 2 Nuclear Island (NI)

The fifth of six layers of concrete that form the Shield Building foundation on the Unit 2 basemat around the Containment Vessel (CV) has been successfully placed. Form and rebar work continued to support pouring the final layer of this concrete in the second quarter of 2015.

During the period, WEC/CB&I received 57 of 167 Unit 2 Shield Building panels from NNI. The first course of Shield Building panels was fit up on an assembly pad to allow construction personnel to survey the panels and create templates. These templates are being used to support installing rebar in the NI walls that will eventually be inserted through designed openings in these Shield Building transition panels to anchor them to the foundation. The second course of Shield Building panels was fitted together on the assembly pad in preparation for welding together in pairs prior to setting in the NI.

Within the Unit 2 CV, piping, rebar, embedment plates and electrical conduit are being installed in preparation for placing Layers 3 and 4 of concrete at the CV base.

Work continued to fabricate and attach the anchor blocks that anchor CA20 to the Unit 2 basemat. Approximately three-quarters of these anchor blocks are in place.

WEC/CB&I has largely completed the realignment of the Unit 2 CA20 walls where alignments shifted during the lifting and placement of Unit 2 CA20 in the NI. One wall section from the module has been removed and is being worked on a pad adjacent to Unit 2. When the realignment is completed, the section will be lifted and re-welded into place. Placement of concrete within the walls of Unit 2 CA20 will follow.

Fabrication of the Unit 2 CA05 module, which forms the chemical and volume control system tunnel and passive core cooling system walls within the CV, was completed. The module was lifted and successfully set in place inside the CV.

The Unit 2 CA22 module, which houses filters for the Reactor Cooling Water System, has been fully assembled and is ready to be lifted and set inside the CV.



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All submodules necessary to fabricate the Unit 2 CA01 module, which houses the Steam Generators for Unit 2, have been received on site. Assembly of the module is nearing completion. Delays in setting the Unit 2 CA01 module would likely affect the schedule for setting the Unit 2 CA03 module and therefore the other construction activities that follow the setting of that module. For this reason, SCE&G is monitoring the schedule for completing and setting the Unit 2 CA01 module closely.

The CA02 module forms part of the in-containment refueling water storage tank and pressurizer cubicle wall. Three of the five CA02 submodules have been upended and are set in place for welding at an assembly location on site. The other two submodules are on site.

Major sections of the interior and exterior walls of the Unit 2 NI Auxiliary Building have been placed. Walls forming the first level of the Auxiliary Building (Level A2) are approximately 80% complete, and those forming the second level (Level A3) are approximately 50% complete. Brackets and structural steel to support Auxiliary Building floors are being installed. The mechanical modules for the first floor of the Auxiliary Building are being fabricated on site using submodules and commodities shipped from Lake Charles, Louisiana.

The exterior walls needed to support backfilling around the Unit 2 Annex Building were completed during the period and backfilling began. Sumps for the Annex Building were placed and rebar work was underway to support pouring of the first quarter-section of the basemat for this area.

### 2. Unit 3 Nuclear Island

Rebar work is proceeding for the first layer of concrete to be placed above the Unit 3 NI basemat to form the Shield Building foundation. All four submodules forming the Unit 3 CA04 module are on site. They have been upended and are being fit up for welding at an assembly location on site. Fit up issues are being corrected. WEC/CB&I has received 4 of the 167 Shield Building panels for Unit 3 from NNI.

The installation of rebar and the placement of concrete continued during the period for sections of the interior and exterior walls of the Unit 3 NI Auxiliary Building. Backfill work continued around the exterior of the Unit 3 NI.

The first layer of concrete inside the Unit 3 Containment Vessel Bottom Head (CVBH) is in place. On site assembly of mechanical module CB65 is progressing.

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### 3. Units 2 and 3 Turbine Buildings and Condensers

Work continued during the period to weld-out or bolt-up structural steel for the Unit 2 Turbine Building and work on the turbine pedestal. Rebar, form-work and installation of embedments continued to support pouring concrete for the pedestal. The water boxes for the Unit 2 Condenser and the first section of the permanent stairwell for the Unit 2 Turbine Building are installed. Work continued on installing the Service Water System, Condenser Tube Cleaning System, Condensate Draining System, and Condensate Polishing System.

Placement of fill concrete continued beneath the Unit 3 Turbine Building. Rebar, piping and other embedments were installed on the Unit 3 Turbine Building mudmat to support pouring of the basemat. The fabrication of the structural steel modular sections of the Unit 3 Turbine Building, CH80 and CH82, and weld-up of the upper and lower condenser shells continued outside the building footprint during the period.

### 4. Unit 2 and Unit 3 Containment Vessel Fabrication

Welding of the seam joint between the Unit 2 CV Ring 1 and the CVBH continued during the period. The welding of attachment plates and ventilation fittings continued on the Unit 2 CV Ring 2. Welding of the third and final course of plates making up Unit 2 CV Ring 3 has been completed. Installation of the air baffle supports is nearing completion. Welding continued on Unit 3 CV Ring 1. Welding of the vertical seams of the first three courses of Unit 3 CV Ring 2 is complete.

Assembly began on the plates that will be welded together to form the Unit 2 CV Top Head. The Top Head forms the crown of the CV.

Acceptance rates based on the Radiographic Testing (RT) of welds on the Units 2 and 3 CVBH and CV Rings remain above 99%.

### 5. Cooling Towers

Cooling Towers 2A and 3A are substantially complete. The installation of rebar and the placement of concrete for the walls of Cooling Tower 2B continued during the period. Structural work is approximately two-thirds complete on Cooling Tower 3B. CB&I has completed the basin and foundation work for Cooling Tower 2B and has turned it over to EvapTech for erection of the cooling tower structure. Structural work on the Pump Basin for the Unit 2 Cooling Towers is complete and the Pump Basin is ready for installation of pumps. Work is underway for the Pump Basin for the Unit 3 Cooling Towers.

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### 6. Unit 2 High-Side Switchyard

WEC/CB&I continued installing concrete foundations and walls for the Unit 2 Transformers in the Unit 2 High-Side Switchyard, which is located adjacent to the Unit 2 Turbine Building.

### 7. Unit 2 Switchyard

SCE&G has experienced capacitor failures in the Unit 2 Switchyard. The Unit 2 Switchyard remains under warranty, and CB&I and its subcontractor, Pike, are responsible for its construction, and are investigating the cause of the capacitor failures and appropriate corrective action. The Switchyard remains energized during this investigation.

### 8. Offsite Water System (OWS)

WEC/CB&I continued to install equipment skids in the OWS facility and work progressed on ancillary buildings. Startup testing of instrumentation and control (I&C) equipment is underway.

### 9. Workforce

Currently, approximately 3,500 WEC/CB&I personnel and subcontractor personnel are employed on site. Approximately 57% of these jobs are held by South Carolina residents.

## B. Equipment and Fabrication

Approximately 85% of the Unit 2 major equipment and 30% of Unit 3 major equipment have been delivered to the project. This amounts to approximately 56% of all major equipment for the project. Major equipment is considered as any equipment with a cost of $10 million or greater. During this period, progress continued with integrating the equipment into the project.

### 1. Steam Generators

During the period, the Unit 2 Steam Generators were received on site from Doosan's facilities in South Korea. Machining and welding of components of the Unit 3 Steam Generators continued at Doosan with no significant issues.

### 2. Reactor Coolant Pumps (RCPs)

Engineering and endurance testing of the RCPs has restarted after modifications were made by WEC to address the bearing issues of the RCPs. Endurance testing is expected to be complete by June 2015. The delay in delivery

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of the RCPs due to the design issues is not anticipated to affect the construction schedule. This remains a focus area for the project.

### 3. Core Make-Up Tanks, Accumulator Tanks, Pressurizers and the Passive Residual Heat Removal Heat Exchanger (PRHR)

During the period, Unit 3 Core Make-Up Tanks 1 and 2, along with the Unit 2 Pressurizer, were delivered to the site. As planned, the Unit 2 PRHR was shipped back to the Mangiarotti manufacturing facility for refinements to the design to enhance the performance and life of the unit. The refinements include installation of a Supplemental Restraint Bar to provide additional support to internal components of the unit. The Unit 3 PRHR is ready for Supplemental Restraint Bar installation and will be shipped after installation. The Unit 3 Pressurizer's fabrication is complete, is being prepared for hydrostatic testing, and nearing shipment from the Mangiarotti facility.

### 4. Reactor Coolant Loop (RCL) Piping

During the period, Unit 3 RCL Hot and Cold Leg piping segments were delivered to Carolina Energy Solutions in Rock Hill, South Carolina for final machining of instrument connections. The Unit 3 surge line was delivered to the VCSNS site during this period as well.

### 5. Squib Valves

The squib valves were redesigned and successfully passed the submergence qualification testing after the redesign. Full flow functional testing as well as igniter reliability testing continue to progress. No construction schedule impact is anticipated at this time.

### 6. Information Technology

**Site Fiber Optic System.** Work on the fiber optic cable system continues to progress as expected. Work on the fiber optic cable "back bone" for the Units is complete and additional runs of fiber are being installed in the ordinary course based on specific location requests as site development progresses.

**Configuration Management Information System (CMIS).** CMIS is the system that will store documents and data related to the design and engineering of the Units, the Quality Assurance/Quality Control (QA/QC) records of equipment, operating programs and protocols for the Units. SCE&G completed two demonstration runs to test the performance of the CMIS in workflow routing for issuing operating procedures. Modifications to both the hardware and software are being made as a result. SCE&G expects the first deliverable for workflow procedures by early third quarter. Additionally, the configuration set for the

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equipment list in support of work management software is scheduled for the fourth quarter of 2015.

**Work Management System (WMS).** SCE&G received several of the major software modules for the WMS during the reporting period ending December 31, 2014 and expects to begin module testing in the second quarter of 2015. Integrated systems testing will begin later in the year. Work is progressing as expected.

**Handover and Turnover of Proprietary Information.** During the period, SCE&G and WEC/CB&I continued to work together to develop a plan and schedule for handover and turnover of proprietary data and information related to the Units. The pace of the work in this area is accelerating and efforts are underway to capture this in a project execution plan approved by WEC/CB&I and SCE&G by the fourth quarter of 2015.

### 7. Module Fabrication and Assembly

Challenges related to fabrication of submodules continue to be a focus area of the project.

**The Revised Module Production Schedule.** As indicated in Section II.A., the fabrication and delivery of Shield Building panels and structural submodules for the CA01 module are critical path items for both Units. Accordingly, production of the CA01 module and other structural modules remains a very important focus area for the project. SCE&G maintains a presence on site at CB&I-LC to monitor activities and interact with CB&I-LC leadership on a regular basis.

**Unit 2 Submodules.** All submodules for the Unit 2 CA01 module are on site and fabrication was nearing completion. Unit 2 CA02 had five of five submodules on site as of the end of the quarter. One of 17 panels comprising the Unit 2 CA03 module is on site.

**Unit 3 Submodules.** Work continued at Oregon Iron Works and CB&I-LC facilities on the Unit 3 CA20 submodules and 16 of 72 submodules are on site. Two of 47 submodules for the Unit 3 CA01 module were received from the Toshiba & IHI Corporation facilities in Japan. After the close of the period, WEC/CB&I made the decision to transfer fabrication of the Unit 3 CA03 modules from the MetalTek-SMCI Division (SMCI) in Lakeland, Florida to CB&I-LC due to production issues at SMCI.

**Mechanical Modules.** Mechanical modules are skids or racks that hold pumps, cable trays, pipes, conduits, valves or similar equipment and are being

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fabricated at the CB&I-LC and CB&I Island Park facilities in Beaumont, Texas. During the period, the fabrication of higher-priority Unit 2 mechanical modules and the assembly of the first floor Auxiliary Building mechanical modules continued on site.

**Shield Building.** Fifty-seven out of the 167 panels which will comprise the steel walls of the Unit 2 Shield Building were received on site from NNI. Four of the Unit 3 Shield Building panels are on site.

**Conclusion.** Senior management from both SCE&G and WEC/CB&I continue to monitor the fabrication and delivery process related to submodules and panels. WEC personnel continue to provide on-site engineering support for production at CB&I-LC. SCE&G maintains a permanent resident inspector at the CB&I-LC facility, the SMCI facility, and the NNI facility. The OIW and Greenberry facilities share a permanent resident inspector. The fabrication of the submodules continues to be an important area of focus for the project.

## C. Quality Assurance and Quality Control

The Quality Systems Group continues its QA/QC oversight activities to ensure that WEC/CB&I is meeting quality requirements on site, internally, and at suppliers and sub-suppliers. If effective oversight by SCE&G or WEC/CB&I is not demonstrated in any area, the Quality Systems Group tracks and escalates concerns to ensure that QA/QC systems are improved to ensure effective results going forward. During the first quarter of 2015, the Quality Systems Group continued its focus on new structural and mechanical module suppliers and the implementation of their QA/QC programs. Particular emphasis was placed on evaluating the implementation of CB&I-identified corrective actions for improving module supplier performance, and on observing CB&I surveillance and audit activity at module suppliers.

Witness and Hold point observations were conducted on major components at Doosan, EMD, Nova (the vendor for the reactor vessel head bolting system), and Carolina Energy Solutions. No major issues were identified as a result of these Witness and Hold point activities.

The Quality Systems Group audited the Consortium Procurement Process and the Parallel Module Fabrication Process. In addition, observations were conducted of CB&I on-site audit of its ASME certificate program. Observations were also conducted of recovery actions for contact made with the CVBH during core drilling operation. No major issues were identified as a result of these audits and observations. The Quality Systems Group continues to monitor Safety Conscious Work Environment concerns to ensure that all personnel are encouraged and supported in reporting safety concerns.

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## D. Licensing and Permitting

As licensee for the Units, SCE&G is directly accountable to the NRC for contractors meeting nuclear safety-related QA/QC requirements both at the project site and at the facilities of its component manufacturers and equipment suppliers worldwide. WEC/CB&I, through the EPC Contract, is responsible to SCE&G for making sure that these requirements are met.

### 1. NRC Inspections

During the period, the NRC issued its Fourth Quarter 2014 Integrated Inspection Report. Two Green Non-Cited Violations (NCVs) were documented for violation of (1) 10 CFR 50, Appendix B, Criterion III, "Design Control," rebar dowels in Unit 3 Layer 1 that were not fabricated in conformance with ACR 349-01; and (2) 10 CFR 50 Appendix B, Criterion III, "Design Control," for CA20 shim design that did not meet code requirement. A Green finding is the least significant in the NRC Construction Reactor Oversight Process. It qualitatively indicates licensee performance is acceptable and that NRC Construction Reactor Oversight Process cornerstone objectives are fully met.

During the period, the NRC conducted a CV Fabrication Inspection, a Civil ITAAC Inspection, and a Protection and Safety Monitoring System Commercial Grade Dedication Inspection and there were no findings.

During the quarter, minor damage to the Unit 2 CV occurred during concrete coring operations. The area was evaluated and repairs were made to the CV and the adjacent reinforced concrete that assured CV integrity met design requirements. A Root Cause investigation was conducted by the Consortium during the quarter and the root causes and contributing causes of the issue were determined. Actions were assigned to prevent recurrence of this type of issue.

The NRC sent a three-member NRC inspection team to review the events, including a review of both the CB&I and SCE&G assessments, as well as to develop its own independent assessment. The inspectors evaluated any potential effects on CV integrity, similar activities and corrective actions. Subsequent to the quarter, the NRC concluded the inspection with no cited violations, but indicated the potential for two Green NCVs related to (a) reporting by construction personnel when rebar is encountered in drilling, and (b) review and verification of field configuration for design control purposes.

### 2. LARs

During the period, SCE&G filed two new LARs with the NRC. The NRC has granted a total of 28 LARs. Two LARs were granted during the reporting period. Seventeen LARs were pending on March 31, 2015. For ease of reference,

a report that tabulates all the LARs submitted by SCE&G to the NRC as of March 31, 2015, is attached as Appendix 5.

### 3. Inspections, Tests, Analyses and Acceptance Criteria

During this period, SCE&G did not submit any ITAAC Closure Notifications to the NRC. Of the 18 previously submitted ITAAC Closure Notifications, all have been verified complete by the NRC.

### 4. Major Construction Permits

No major construction-related permits are outstanding. Other construction-related permits are anticipated to be obtained in the ordinary course of administering this project.

## E. Engineering

### 1. Engineering Completion Status

As of March 31, 2015, the Units 2 & 3 plant design packages issued for construction (IFC) are 89% complete, which is an adjustment from the 92% completion percentage described last quarter. The change in design completion percentage from the fourth quarter of 2014 to this quarter is the result of additional documentation being required for certain design finalization activities. Delivery of design documents for construction continues to be a focus area for SCE&G.

### 2. Site Specific Design Activities

Site specific design work is 93% complete. Design work is associated with support of the following site specific systems: Circulating Water System (CWS), Power Distribution Center (PDC), which is part of the Main AC Power System, Uninterruptible Power Supply (UPS), Raw Water System (RWS), Offsite Water System (OWS), Service Building, and High-Side Switchyard (THSS).

## F. Training

**1. Plant Reference Simulator (PRS) and Commission-Approved Simulator (CAS).** Plant simulators are computer systems designed to model the response of a generating plant to changing operating conditions and operator inputs. Such simulators are necessary for operator training and testing and to support plant operations. Certification of a simulator by the NRC as a PRS allows that simulator to be used to support an operating nuclear unit and for training purposes. Successful Integrated Systems Validation (ISV) testing is necessary for the NRC to approve a plant simulator to serve as a PRS.



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During the first quarter of 2015, WEC conducted the required ISV testing on hardware and software similar to the Unit 2 and 3 plant simulators. SCE&G and WEC are evaluating the results. It is anticipated that the documentation supporting certification of the SCE&G simulators as PRSs will be completed by the end of the fourth quarter of 2015.

This PRS certification schedule will not permit certification of the Unit 2 and 3 simulators in time for them to be used in conducting the integrated operator simulator exams for the first class of candidates seeking licensing as Senior Reactor Operators (SROs) and Reactor Operators (ROs). As of the close of the period, that exam was scheduled to be offered in May 2015. The PRS certification schedule may also not support testing for the second class of SRO and RO candidates. Their exams are scheduled for November 2015.

In response, SCE&G requested the NRC to approve the simulators as CASs under the process specified in 10 CFR 55.46(b). This process involves inspection and review to validate that simulators comply with American National Standards Institute/American Nuclear Society (ANSI/ANS) Standard 3.5 which establishes the functional requirements for simulators used in operator training and examination. Approval of the simulators as CASs will allow the upcoming integrated operator simulator exams to be conducted using them.

During the period, in support of the CAS approval request, the NRC conducted an on-site simulator inspection and review of the ISV testing at WEC. The NRC will prepare a Safety Evaluation Report (SER) based on this inspection and review. Approval of the CAS requests is expected in the second quarter of 2015.

**2. Initial Licensed Operator (ILO) Training**. The first ILO class, which currently consists of 21 students, is on track to take the NRC exam in May 2015. Based on the CAS certification delay, the class will take only the written portion of the exam. A second ILO class, currently 21 students, resumed training at the end of the first quarter of 2015. The NRC written and integrated operator simulator exams for this class are scheduled for November 2015. A third ILO class, currently numbering 18 students, completed Non-Licensed Operator systems training in preparation for the Generic Fundamentals Examination Series. That stage of training is scheduled to occur in the second quarter of 2015. This third ILO class is expected to take the NRC written and integrated operator simulator exams in September 2016.

**3. Maintenance and Technical Staff Training**. During the period, Mechanical, Electrical, and I&C maintenance technician trainees continued Tier 2 discipline-specific initial training and this training will continue in the second quarter of 2015. In addition to continuing training (CT) activities, during the first

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quarter of 2015, Radiation Protection Technicians and Chemistry Technicians conducted Tier 1, Tier 2 and Tier 3 initial training. In addition, Tier 1 initial training started for a new class of students including all three maintenance groups, radiation protection and chemistry personnel, and will continue into the second quarter. Also during the period, members of the Units' engineering staff completed initial orientation training.

## G. Operational Readiness

**1. Mission Critical Hiring**. For 2015, SCE&G identified 71 positions to be filled for the year with 35 identified as mission critical hires. By the close of the period, six positions were filled with four of those being mission critical.

**2. Programs and Procedures**. During the period, SCE&G continued a detailed analysis of the impacts of the Revised, Fully-Integrated Construction Schedule on the operational readiness program and the allocation of resources to support the Plant Support/Programs Engineering schedule. Progress was made by adding additional granularity to the schedule and refining the schedule with metrics related to schedule stability and adherence. The goal of this project is to produce a fully integrated and resource-loaded plan for SCE&G's completion of all operations, maintenance and technical training programs and procedures that must be in place to support the Units' initial nuclear fuel loads. Completing this work remains a focus area due to the extent of work required and the availability of engineering resources, and SCE&G continues to monitor progress.

**3. Collaborative Equipment Reliability Program**. The collaborative project with Southern Nuclear Company (SNC) to classify structures, systems and components and to establish maintenance strategies for the AP1000 continues. SCE&G and SNC are currently meeting the established schedule.

**4. Materials Procurement Engineering**. During this period, SCE&G and WEC/CB&I continued negotiating commercial and scope issues related to the delivery method and formatting of critical spare parts inventory needed for the Initial Test Program and to support safe, reliable and efficient initial operation of the Units. WEC has committed to coordinate joint meetings between SCE&G, WEC, CB&I and SNC to provide a path forward for this area. Initial joint meetings between WEC/CB&I and SCE&G were conducted for this area during this period.

**5. Master Equipment List/Component Labeling**. During this period, WEC and SCE&G worked on resolving issues related to equipment identification and subsequent methods to be used to label and tag identified equipment. WEC has assigned a dedicated resource to oversee this area and provide feedback to SCE&G related to scope of issues and potential WEC/CB&I resolution.

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## H. Change Control/Owners Cost Forecast

**1. Plant Layout Security**. During this period, SCE&G and WEC/CB&I continued to finalize negotiations of a change order related to changes in plant layout to enhance the physical security of the Units. Engineering work required to support this scope of work continued during the period. A draft change order was received after the close of the first quarter. The cost of the change order for this phase of work is estimated to be $20.4 million.

**2. Cyber-Security Upgrades Phase II.** During this period, SCE&G and WEC/CB&I were finalizing a change order related to Phase II of the work to upgrade cyber-security protections for the Units. The agreed upon scope of work and associated costs for this phase of the plan is $18.8 million and that price is based on the assumption that WEC/CB&I would be conducting a similar scope of work for SNC. WEC/CB&I reports that SNC has not yet agreed to proceed with the change order and thus the costs of the change order may be impacted. In the meantime, WEC/CB&I is proceeding with initial activities for the project. Site specific cyber security-related work continued during the period.

**3. ITAAC Maintenance**. During this period, SCE&G executed a change order with WEC/CB&I to address the additional review of closed ITAACs. The change order, at a cost of $59,400, was required by the NRC's new regulatory requirements that WEC/CB&I perform a more detailed review of closed ITAACs to ensure that any intervening changes in design would not have impacted original approval of the ITAAC. WEC/CB&I intends to submit a new change order for this work each year. SCE&G has forecasted the cost for 2016-2020 to be $313,000, for a total of $372,400 in additional costs over the life of the project.

**4. Change Order 20, WEC Costs Related to the Implementation of the Health Care and Education Reconciliation Act of 2010 and Prior Health Care Acts ("Health Care Act")**. Change Order 20 is related to WEC's increased costs of compliance with the Health Care Act. It was negotiated last period and signed this period. The forecasted cost of this change order is $206,589 and covers additional actual costs for 2011, 2012, and 2013. SCE&G anticipates receiving additional change orders for time periods beyond 2013.

**5. Other Change Orders.** Negotiations continued on (1) the final language for Change Order 16 (delay in receiving the combined operating licenses, Shield Building redesign, module redesign, and Unit 2 rock conditions) and (2) Change Order 17 (equipment required to be installed in the OWS for the removal of bromide from raw water during treatment, the transfer of certain CB&I start-up construction support Time & Material scopes of work and associated dollars to the Target and Firm price categories, and other miscellaneous items). Costs related to Change Order 16 were approved by the Commission in Order No.

2012-884. There will be no increase to EPC Contract costs as a result of Change Order 17.

**6. Notices of Change.** During the period, SCE&G received two Notices of Change under the EPC Contract. One Notice of Change was related to unanticipated subsurface conditions at the RWS intake cofferdam, intake channel foundation, and RWS platform. The subsurface rock condition will require a significant amount of rock excavation. The second Notice of Change reported that CB&I is incurring additional costs in supporting SCE&G's oversight personnel assigned to Greenberry Industrial LLC. Greenberry is a fabricator for CA floor modules. Both of these items could have cost implications, and the first could have schedule implications for completion of the RWS.

**7. Schedule Mitigation for Shield Building Panels.** SCE&G is negotiating a change order for schedule mitigation for the Shield Building panels. WEC/CB&I subcontracted the construction of the steel panels which will form the walls of the Shield Buildings to NNI in Newport News, Virginia. Schedule delays related to the finalization of design of these panels have placed the fabrication of these panels on the critical path for timely completion of the project. NNI has agreed to expand its manufacturing facility to allow for additional panels to be worked in parallel, thus mitigating potential schedule delays. SCE&G estimates the cost of this expansion will add $12.1 million to the EPC Contract cost.

**8. Ovation and Common Q Instrumentation and Control Maintenance Training Systems.** During this period, WEC/CB&I worked on a cost proposal to present to SCE&G concerning the Ovation and Common Q systems. These are the I&C software programs that will be used to operate the Units. Maintenance training systems are required to support training on the Ovation and Common Q systems in a training environment without interfering with the use of the systems for operations. Maintenance training systems also allow software maintenance to be conducted off-line. The cost of the change order associated with acquiring hardware and software for these maintenance training systems is currently forecasted at approximately $880,000.

**9. Simulator Development System (SDS).** During this period, WEC/CB&I worked on a cost proposal for a new SDS that will be a scaled down version of the PRS. SCE&G has determined that the schedule for training licensed operator candidates and senior operators and for developing and validating NRC license exam scenarios will require nearly continuous use of the PRS for the balance of the project. This does not provide sufficient time for upgrades, modifications and routine software maintenance of the PRS. The SDS will include a complete copy of the PRS software which can be serviced and modified without interfering with the use of the PRS. The cost of the change order to acquire the SDS is currently forecasted to be approximately $605,000.



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**10. Warehouse Fire Safety**. During this period, WEC/CB&I provided a draft change order to SCE&G regarding the Warehouse Fire Safety to upgrade the remote monitoring capabilities of the fire and security systems in three of the on-site warehouses that serve the project. This upgrade will promote safety and increase the limits of available insurance coverage. SCE&G reviewed the draft change order and provided comments back to WEC/CB&I to continue negotiations. The cost of the change order is estimated to be $121,000.

## I. Transmission

**1. VCS2-Lake Murray 230 kV Line No. 2 and Segment of the VCS2-St. George 230kV Line No. 1.** The VCS2-Lake Murray 230 kV Line No. 2 is energized. SCE&G plans to energize the segment of the VCS2-St. George 230 kV Line No. 1 that was built as a part of this project when the remaining segment of that line is built.

**2. The Remaining Segment of VCS2-St. George 230 kV Line No. 1 and the VCS2-St. George 230 kV Line No. 2.** The VCS2-St. George 230 kV Line No. 2 segment between VCS2 and the Lake Murray Substation is complete. Construction of both the No. 1 and No. 2 lines from the Lake Murray Substation to the point where they cross Interstate 20 towards the site of the new Saluda River Substation is complete and is continuing on the Saluda River Substation side of Interstate 20. Construction also continued for both the No. 1 and No. 2 lines in the Orangeburg area heading south toward the St. George Switching Station.

**3. St. George Switching Station.** In prior periods, the overall engineering layout of the station and the topographic surveys of the site were completed and the official jurisdictional determination of wetlands was received from the Army Corps of Engineers. The site plan and storm water permit application was submitted to the Department of Health and Environmental Control (DHEC) and the Coastal Zone Consistency certification was applied for with DHEC during the period. The current scheduled completion date is June 2016.

**4. Saluda River Substation.** Construction continued on the Saluda River Substation. At the end of the period, the remaining 230 kV bus work was completed and the main power transformer was assembled and the primary conductors were connected. All of the 230 kV and 115 kV circuit breakers have been set on their pads and 75% have been completely assembled, passed preliminary testing, and primary conductors connected. Conduit runs from the cable trough to the devices continue to be installed and 90% of the relay panels have been installed in the switch house. Setting of the main transformer remains in progress. The scheduled completion date is August 2015.

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## III. Anticipated Construction Schedules

The Revised, Fully-Integrated Construction Schedule establishes a new substantial completion date for Unit 2 of June 19, 2019, and a new substantial completion date for Unit 3 of June 16, 2020, a shift of 27 months and 25 months respectively. By the close of this period, 105 of the 146 milestones for reporting purposes are complete. The remaining 41 have been delayed, and 31 have been delayed by more than 18 months compared to the schedule for the project as approved in Order No. 2012-884. This increase in delayed milestones is the result of the recognition of the Revised, Fully-Integrated Construction Schedule as the current schedule for the project for reporting and project management purposes. In the March 2015 Update Petition, SCE&G is requesting that new milestone dates be established based on the current schedules. Pending approval of the new schedules, which the Commission is considering under Docket No. 2015-103-E, the current schedules and forecasts presented in this report are compared against those approved in Order No. 2012-884.

**Appendix 1** to this quarterly report lists and updates each of the specific milestones constituting the anticipated construction schedules for the Units pursuant to S.C. Code Ann. § 58-33-270(B)(1) and Order No. 2012-884.

## IV. Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B) (6) (the Inflation Indices)

The Capital Costs section of this report (Section IV.A.) provides an update of the cumulative capital costs incurred and forecasted to be incurred in completing the project. These costs are compared to the cumulative capital cost targets approved by the Commission in Order No. 2012-884. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates. There has not been any use by the Company of the capital cost timing contingencies that were approved by the Commission in Order No. 2009-104(A). The Inflation Indices section (Section IV.B.) of this report provides updated information on inflation indices and the changes in them.

### A. Capital Costs

**Appendix 2** shows the Cumulative Project Cash Flow target as approved in Order No. 2012-884 and as updated for escalation and other Commission-approved adjustments under the heading **"Per Order 2012-884 Adjusted."**

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the Company's current forecast of cost and construction schedules under the heading **"Actual through March 2015 plus Projected."**

As shown on **Appendix 2,** the projected expenditure for the project for the 12 months ended December 31, 2015, is approximately $927 million. As shown on

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**Appendix 2,** line 39, the cumulative amount projected to be spent on the project as of December 31, 2015, is approximately $3.750 billion. As shown on **Appendix 2,** line 18, the Cumulative Project Cash Flow target approved by the Commission for year-end 2015 adjusted for current escalation and WEC/CB&I billing differences is approximately $4.633 billion. As a result, the cumulative cash flow at year-end 2015 is approximately $883 million less than the target.

For comparison purposes, **Appendix 3** sets out the cash flow schedule for the project as it was approved in Order No. 2012-884. **Appendix 3** does not include any adjustments to the cash flow schedule for changes in inflation indices or adjustments in capital cost schedules made by the Company. The AFUDC forecast presented on **Appendix 3** is the AFUDC forecast that was current at the time of Order No. 2012-884.

### B. Inflation Indices

**Appendix 4** shows the updated inflation indices approved in Order No. 2009-104(A). Included is a history of the annual Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index for the past 10 years. The changes in these indices and the escalation-related effects of cost rescheduling resulted in an increase in the projected cost of the Units in future dollars from approximately $6.3 billion as forecast in Order No. 2009-104(A) to a forecast of approximately $6.8 billion using current inflation data.

## V. Updated Schedule of Anticipated Capital Costs

The updated schedule of anticipated capital costs for Units 2 & 3 is reflected in **Appendix 2.**

## VI. Conclusion

In the March 2015 Update Petition, SCE&G is requesting that the Commission establish new BLRA milestone dates and construction cost schedules for the project based on the Revised, Fully-Integrated Construction Schedule based substantial completion dates for Unit 2 of June 19, 2019, and for Unit 3 of June 16, 2020.

New cost schedules presented in the March 2015 Update Petition indicate that the cost of the project, including updates in SCE&G's cost and change orders, increased from $4.5 billion, as approved in Order No. 2012-884, to $5.2 billion in 2007 dollars. The total project capital cost is now estimated at approximately $5.2 billion (SCE&G's portion in 2007 dollars) or $6.8 billion including escalation and allowance for funds used during construction (SCE&G's portion in future dollars).

The Company maintains a staff that monitors the work of its contractors and continues to monitor closely areas of concern related to the cost and schedule for the

project. The Company will continue to update the Commission and the ORS of progress and concerns as the project proceeds.



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| AFUDC | Allowance for Funds Used During Construction. |
| AP1000 | The WEC designed Advanced Pressurized water nuclear reactor of approximately 1000 megawatts generating capacity. |
| APOG | A group of utilities who have submitted applications for AP1000 COLs. |
| BLRA | The Base Load Review Act, S.C. Code Ann. § 58-33-210 et seq. (Supp. 2009). |
| CA | The designation for specific pre-fabricated structural modules that form part of the reactor building or auxiliary building, such as Module CA20. |
| CAP | Corrective Action Program. |
| CAR | A Corrective Action Report related to design, engineering or construction of the Units, or related processes, that must be corrected. |
| CB&I | Chicago Bridge & Iron, a sub-contractor on the project which, upon acquisition of the Shaw Group, became a member of the Consortium and a prime contractor on the project. |
| CB&I-LC | CB&I Lake Charles - the module fabrication unit formerly known as Shaw Modular Solutions or SMS and located in Lake Charles, Louisiana. |
| CB&I Services | A subsidiary of CB&I that is fabricating the containment vessels on site under contract with Westinghouse. |
| CES | Carolina Energy Solutions, a subcontractor located in Rock Hill, South Carolina. |
| CMIS | Configuration Management Information System. |
| COLs | Combined Operating Licenses for construction and operation of a nuclear unit issued by the NRC. |
| COLA | A Combined Operating License Application. |



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| Commission | The Public Service Commission of South Carolina. |
| Consortium | The joint venture between WEC and CB&I to construct the Units under the terms of the EPC Contract. |
| CR | A Condition Report communicating and memorializing concerns with the design, engineering or construction of the Units, or related processes, which in some cases can become the basis for a Corrective Action Report. |
| CV | The Containment Vessel which provides containment for the reactor vessel and associated equipment. |
| CVBH | The Containment Vessel Bottom Head that forms the bottom of the Containment Vessel. |
| CWIP | Construction Work in Progress. |
| CWP | Circulating Water Pipe. |
| CWS | The Circulating Water System –the system that will transport waste heat from the turbines to the cooling towers. |
| Cyber Security | Technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access. |
| DCD | Design Control Document which is approved by the Nuclear Regulatory Commission and sets forth the approved design of a nuclear reactor. |
| Departures | Departures are minor deviations from the approved Design Control Document included in the licensing basis for the Units that do not rise to the level requiring a LAR. |
| EMD | Electro-Mechanical Division of Curtiss-Wright Corp., the sub-contractor for the Reactor Coolant Pumps. |
| EPA | The United States Environmental Protection Agency. |



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| EPC Contract | The Engineering, Procurement and Construction Agreement for construction of the Units entered into by SCE&G and WEC/CB&I. |
| ERB | The Emergency Response Building which provides office space and housing for the emergency response personnel and equipment for all three units. |
| Exit Debriefing | A meeting held between the NRC and the licensee at the conclusion of an NRC inspection to discuss the results of the inspection. |
| FERC | The Federal Energy Regulatory Commission. |
| Fixed/Firm | Prices under the EPC Contract which are either fixed or are firm but subject to defined escalation rates. |
| GDP | Gross Domestic Product. |
| HFE/ISV | Human Factors Engineering/Integrated Systems Validation –part of the development of a training simulator for the Units. |
| HL or Hot Leg | That part of the Reactor Cooling Loop that transports steam to the steam generators. |
| HLD | Heavy Lift Derrick - the derrick that was erected on site to move large modules and equipment. |
| IBF | Subcontractor of Tioga that manufactures the Reactor Coolant Loop piping. |
| ICN | ITAAC Closure Notification – the letter from the licensee to notify the NRC that an ITAAC is complete in accordance with 10 CFR 52.99(c)(1). |
| IFC | Issued for Construction – engineering drawings that include information necessary for construction of specific structures, systems and components. |
| ILO | Initial Licensed Operator. |
| INPO | Institute of Nuclear Power Operations. |



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| IPS | Integrated Project Schedule for licensing and construction of the Units. |
| ISV | Integrated Systems Validation. |
| ITAAC | Inspections, Tests, Analyses, and Acceptance Criteria which are the inspections, tests, analyses and acceptance criteria that the NRC has determined to be necessary and sufficient to demonstrate that a nuclear unit has been constructed and will operate in conformity with the COLs, the Atomic Energy Act of 1954, as amended, and the NRC's regulations. |
| LAR | License Amendment Request – A formal request made by VCSNS to amend the combined operating license, its appendices, or its associated bases. |
| LNTP | Limited Notice to Proceed authorizing a vendor to commence specific work. |
| LSS | Limited Scope Simulator –a training simulator with limited functionality that can be used for the initial stages of operator training. |
| MAB | Module Assembly Building - a building on site where large modules will be constructed and equipment will be prepared for installation in a space that is protected from the elements. |
| Mangiarotti | Mangiarotti Nuclear, S.p.A. |
| NEI | Nuclear Energy Institute. |
| NI | Nuclear Island, comprising the steel containment vessel, the reactor building, and the auxiliary building. |
| NLC | Nuclear Learning Center - a training facility operated by SCE&G at the Jenkinsville site. |
| NLO | Non-Licensed Operator. |
| NND | The New Nuclear Deployment Team within SCE&G. |



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| NNI | Newport News Industries - a module fabrication subcontractor to WEC/CB&I. |
| NPDES | National Pollutant Discharge Elimination System. |
| NRC | The United States Nuclear Regulatory Commission. |
| ORS | South Carolina Office of Regulatory Staff. |
| OWS | Off Site Water System – the system that withdraws water from Monticello Reservoir and provides potable and filtered water for the Units. |
| PAR | Preliminary Amendment Request - A formal request made by VCSNS which allows VCSNS to proceed at its own risk with work consistent with an amendment request contained in an LAR prior to approval. |
| PDC | Power Distribution Center - prefabricated, modular enclosures housing electrical equipment such as switchgear, motor control center equipment and other auxiliary equipment. |
| Pike | Pike Energy Solutions, a contractor for transmission and switchyard related work. |
| PRA | Probabilistic Risk Assessment. |
| PRHR | The Passive Residual Heat Removal Heat Exchanger unit –a heat exchanger unit that is part of the passive safety system which provides cooling to the AP1000 reactor during emergency situations. |
| PRS | Plant Reference Simulator – a training simulator with full functionality that can be used in all stages of operator training. |
| PWS | The Potable Water System - which provides potable water to the site. |
| QA | Quality Assurance – The planned and systematic activities implemented in a quality system so that the quality requirements for a product or service will be fulfilled. |



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| QA/QC | Quality Assurance/Quality Control. |
| QC | Quality Control – The observation techniques and activities used to fulfill requirements for quality. |
| RAI | Requests for Additional Information issued by the NRC staff to license applicants. |
| RCA | Root Cause Analysis – identification and evaluation of the reason for non-conformance, an undesirable condition, or a problem which (when solved) restores the status quo. |
| RCL | The Reactor Coolant Loop – the piping and related equipment that transports heat from the reactor to the steam generator. |
| RCP | The Reactor Cooling Pump which forms part of the Reactor Coolant System. |
| RCS | The Reactor Coolant System - the complete system for transferring and transporting heat from the reactor to the steam generator. |
| RFI | Requests for Information issued by the NRC staff to licensees. |
| ROW | Right-of-way. |
| RT | Radiographic Testing - a nondestructive testing method of inspecting materials for hidden flaws by using the ability of short wavelength electromagnetic radiation (high energy photons) to penetrate various materials. |
| RV | Reactor Vessel. |
| RWS | Raw Water System – the system for withdrawing and transporting raw water from the Monticello Reservoir. |
| SAT | Site Acceptance Testing. |
| SCDHEC | The South Carolina Department of Health and Environmental Control. |
| SCDNR | The South Carolina Department of Natural Resources. |



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| SCE&G or The Company | South Carolina Electric & Gas Company. |
| SCPSC | The Public Service Commission of South Carolina. |
| SMS | Shaw Modular Solutions, LLC. |
| SNC | Southern Nuclear Company – a subsidiary of Southern Company and licensed operator of the Vogtle Nuclear Units and two other nuclear plants. |
| SRO | Senior Reactor Operator. |
| SROC | Senior Reactor Operator Certification. |
| Target | Costs under the EPC Contract where targets have been established but where SCE&G pays actual costs as incurred. |
| TEi | Thermal Engineering International – a subsidiary of Babcock Power which manufactures moisture separator reheaters and other power plant equipment. |
| Units | V. C. Summer Nuclear Station Units 2 & 3. |
| Update Docket | A proceeding under the BLRA seeking Commission approval of updated cost and construction schedules for the Units. |
| UPS | Uninterruptible Power Supply. |
| URI | Unresolved Items – A term used by the NRC during inspections for items that require further action. |
| USACOE | The United States Army Corps of Engineers. |
| VCSNS or VCSN | V. C. Summer Nuclear Station. |



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# ATTACHMENT 1

## GLOSSARY OF ACRONYMS OR DEFINED TERMS

| Acronym or Defined Term | Reference |
|---|---|
| WEC | Westinghouse Electric Company, LLC. |
| WEC/CB&I | The consortium formed by Westinghouse Electric Company, LLC and CB&I. |
| WMS | Work Management System. |
| WTP | The off-site Water Treatment Plant which will take water from Lake Monticello and treat it to potable water standards. |
| WWS | The Waste Water System – the system for collection, treatment and disposal of domestic waste water generated on site. |
| YFS | The Yard Fire System – the system that provides fire detection and protection outside of the plant. |
| ZBS | The Offsite Power System –the system which provides electrical power to the site. |



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# APPENDIX 1

## V. C. Summer Nuclear Station Units 2 & 3

## Quarterly Report to the South Carolina Office of Regulatory Staff Submitted by South Carolina Electric & Gas Company Pursuant to Public Service Commission Order No. 2009-104(A)

## Quarter Ending March 31, 2015

**Appendix 1** lists and updates each of the milestones which the Commission adopted as the Approved Construction Schedule for the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(1) in Order No. 2012-884. **Appendix 1** provides columns with the following information:

1. Milestone tracking ID number.
2. The description of the milestone as updated in Order No. 2012-884.
3. The BLRA milestone date as approved by the Commission in Order No. 2012-884.
4. The current milestone date.
5. For each completed milestone, the date by which it was completed. For milestones completed prior to the current reporting quarter, the milestone entry is shaded in gray. For milestones completed during the current reporting quarter, the milestone entry is shaded in green.
6. Information showing the number of months, if any, by which a milestone has been shifted. For milestones with planned completion dates that vary in days instead of months, the milestone entry is shaded in yellow.
7. Information as to whether any milestone has been shifted outside of the +18/-24 Month Contingency approved by the Commission.
8. Notes.

On the final page of the document, there is a chart summarizing milestone completion and movement comparing the current milestone date to the milestone date approved in Order No. 2012-884. This movement is shown for only the milestones that have not been completed.

# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 1 | Approve Engineering Procurement and Construction Agreement | Complete | | 5/23/2008 | | No | |
| 2 | Issue POs to nuclear component fabricators for Units 2 & 3 Containment Vessels | Complete | | 12/3/2008 | | No | |
| 3 | Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - First Payment - Unit 2 | Complete | | 8/18/2008 | | No | |
| 4 | Contractor Issue PO to Accumulator Tank Fabricator - Unit 2 | Complete | | 7/31/2008 | | No | |
| 5 | Contractor Issue PO to Core Makeup Tank Fabricator - Units 2 & 3 | Complete | | 9/30/2008 | | No | |
| 6 | Contractor Issue PO to Squib Valve Fabricator - Units 2 & 3 | Complete | | 3/31/2009 | | No | |
| 7 | Contractor Issue PO to Steam Generator Fabricator - Units 2 & 3 | Complete | | 5/29/2008 | | No | |
| 8 | Contractor Issue Long Lead Material PO to Reactor Coolant Pump Fabricator - Units 2 & 3 | Complete | | 6/30/2008 | | No | |
| 9 | Contractor Issue PO to Pressurizer Fabricator - Units 2 & 3 | Complete | | 8/18/2008 | | No | |
| 10 | Contractor Issue PO to Reactor Coolant Loop Pipe Fabricator - First Payment - Units 2 & 3 | Complete | | 6/20/2008 | | No | |
| 11 | Reactor Vessel Internals - Issue Long Lead Material PO to Fabricator - Units 2 & 3 | Complete | | 11/21/2008 | | No | |
| 12 | Contractor Issue Long Lead Material PO to Reactor Vessel Fabricator - Units 2 & 3 | Complete | | 5/29/2008 | | No | |
| 13 | Contractor Issue PO to Integrated Head Package Fabricator - Units 2 & 3 | Complete | | 7/31/2009 | | No | |
| 14 | Control Rod Drive Mechanism Issue PO for Long Lead Material to Fabricator - Units 2 & 3 - first payment | Complete | | 6/21/2008 | | No | |
| 15 | Issue POs to nuclear component fabricators for Nuclear Island structural CA20 Modules | Complete | | 8/28/2009 | | No | |

Legend = Completed = Completed this Quarter = Movement in Days Only





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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 16 | Start Site Specific and balance of plant detailed design | Complete | | 9/11/2007 | | No | |
| 17 | Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3 | Complete | | 10/31/2008 | | No | |
| 18 | Steam Generator - Issue Final PO to Fabricator for Units 2 & 3 | Complete | | 6/30/2008 | | No | |
| 19 | Reactor Vessel Internals - Contractor Issue PO for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3 | Complete | | 1/29/2010 | | No | |
| 20 | Contractor Issue Final PO to Reactor Vessel Fabricator - Units 2 & 3 | Complete | | 9/30/2008 | | No | |
| 21 | Variable Frequency Drive Fabricator Issue Transformer PO - Units 2 & 3 | Complete | | 4/30/2009 | | No | |
| 22 | Start clearing, grubbing and grading | Complete | | 1/26/2009 | | No | |
| 23 | Core Makeup Tank Fabricator Issue Long Lead Material PO - Units 2 & 3 | Complete | | 10/31/2008 | | No | |
| 24 | Accumulator Tank Fabricator Issue Long Lead Material PO - Units 2 & 3 | Complete | | 10/31/2008 | | No | |
| 25 | Pressurizer Fabricator Issue Long Lead Material PO - Units 2 & 3 | Complete | | 10/31/2008 | | No | |
| 26 | Reactor Coolant Loop Pipe - Contractor Issue PO to Fabricator - Second Payment - Units 2 & 3 | Complete | | 4/30/2009 | | No | |
| 27 | Integrated Head Package - Issue PO to Fabricator - Units 2 and 3 - second payment | Complete | | 7/31/2009 | | No | |
| 28 | Control Rod Drive Mechanisms - Contractor Issue PO for Long Lead Material to Fabricator - Units 2 & 3 | Complete | | 6/30/2008 | | No | |
| 29 | Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - Second Payment - Units 2 & 3 | Complete | | 10/31/2008 | | No | |
| 30 | Start Parr Road intersection work | Complete | | 2/13/2009 | | No | |

Legend = Completed = Completed this Quarter = Movement in Days Only





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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 31 | Reactor Coolant Pump - Issue Final PO to Fabricator - Units 2 & 3 | Complete | | 6/30/2008 | | No | |
| 32 | Integrated Heat Packages Fabricator Issue Long Lead Material PO - Units 2 & 3 | Complete | | 10/1/2009 | | No | |
| 33 | Design Finalization Payment 3 | Complete | | 1/30/2009 | | No | |
| 34 | Start site development | Complete | | 6/23/2008 | | No | |
| 35 | Contractor Issue PO to Turbine Generator Fabricator - Units 2 & 3 | Complete | | 2/19/2009 | | No | |
| 36 | Contractor Issue PO to Main Transformers Fabricator - Units 2 & 3 | Complete | | 9/25/2009 | | No | |
| 37 | Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3 | Complete | | 12/30/2010 | | No | |
| 38 | Design Finalization Payment 4 | Complete | | 4/30/2009 | | No | |
| 39 | Turbine Generator Fabricator Issue PO for Condenser Material - Unit 2 | Complete | | 8/28/2009 | | No | |
| 40 | Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3 | Complete | | 4/30/2009 | | No | |
| 41 | Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3 | Complete | | 5/27/2010 | | No | |
| 42 | Design Finalization Payment 5 | Complete | | 7/31/2009 | | No | |
| 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 | Complete | | 12/18/2009 | | No | |
| 44 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2 | Complete | | 8/28/2009 | | No | |
| 45 | Design Finalization Payment 6 | Complete | | 10/7/2009 | | No | |
| 46 | Instrumentation and Control Simulator - Contractor Issue PO to Subcontractor for Radiation Monitor System - Units 2 & 3 | Complete | | 12/17/2009 | | No | |

Legend = Completed = Completed this Quarter = Movement in Days Only



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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 47 | Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | Complete | | 7/29/2011 | | No | |
| 48 | Turbine Generator Fabricator Issue PO for Moisture Separator Reheater/Feedwater Heater Material - Unit 2 | Complete | | 4/30/2010 | | No | |
| 49 | Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2 | Complete | | 2/18/2010 | | No | |
| 50 | Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2 | Complete | | 8/28/2012 | | No | |
| 51 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2 | Complete | | 6/30/2009 | | No | |
| 52 | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2 | Complete | | 12/23/2010 | | No | |
| 53 | Start excavation and foundation work for the standard plant for Unit 2 | Complete | | 3/15/2010 | | No | |
| 54 | Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2 | Complete | | 4/30/2010 | | No | |
| 55 | Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2 | Complete | | 12/30/2010 | | No | |
| 56 | Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2 | Complete | | 5/17/2010 | | No | |
| 57 | Complete preparations for receiving the first module on site for Unit 2 | Complete | | 1/22/2010 | | No | |
| 58 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2 | Complete | | 4/21/2010 | | No | |
| 59 | Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2 | Complete | | 11/16/2010 | | No | |

Legend = Completed = Completed this Quarter = Movement in Days Only





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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 60 | Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2 | Complete | | 3/20/2012 | | No | |
| 61 | Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2 | Complete | | 11/26/2012 | | No | |
| 62 | Polar Crane Fabricator Issue PO for Main Hoist Drum and Wire Rope - Units 2 & 3 | Complete | | 2/1/2011 | | No | |
| 63 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3 | Complete | | 6/14/2011 | | No | |
| 64 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2 | Complete | | 3/26/2012 | | No | |
| 65 | Start placement of mud mat for Unit 2 | Complete | | 7/20/2012 | | No | |
| 66 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2 | Complete | | 9/28/2010 | | No | |
| 67 | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2 | Complete | | 10/28/2011 | | No | |
| 68 | Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3 | Complete | | 6/28/2012 | | No | |
| 69 | Begin Unit 2 first nuclear concrete placement | Complete | | 3/9/2013 | | No | |
| 70 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2 | Complete | | 12/1/2011 | | No | |
| 71 | Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | Complete | | 7/29/2011 | | No | |
| 72 | Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2 | Complete | | 1/27/2012 | | No | |
| 73 | Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2 | Complete | | 12/19/2013 | | No | |

Legend = Completed = Completed this Quarter = Movement in Days Only





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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 74 | Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2 | Complete | | 7/16/2012 | | No | |
| 75 | Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2 | Complete | | 12/22/2011 | | No | |
| 76 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2 | Complete | | 5/4/2012 | | No | |
| 77 | Design Finalization Payment 14 | Complete | | 10/31/2011 | | No | |
| 78 | Set module CA04 for Unit 2 | Complete | | 5/3/2014 | | No | |
| 79 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2 | Complete | | 5/24/2011 | | No | |
| 80 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2 | Complete | | 5/29/2012 | | No | |
| 81 | Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2 | Complete | | 10/23/2012 | | No | |
| 82 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3 | Complete | | 8/26/2013 | | No | |
| 83 | Set Containment Vessel ring #1 for Unit 2 | Complete | | 6/3/2014 | | No | |
| 84 | Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2 | Complete | | 7/6/2013 | | No | |
| 85 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3 | Complete | | 7/18/2013 | | No | |
| 86 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3 | Complete | | 3/29/2012 | | No | |
| 87 | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3 | Complete | | 11/9/2011 | | No | |

Legend = Completed = Completed this Quarter = Movement in Days Only



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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 88 | Set Nuclear Island structural module CA03 for Unit 2 | 6/26/2013 | 1/12/2016 | | +31 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 89 | Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2 | Complete | | 5/10/2012 | | No | |
| 90 | Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | Complete | | 9/16/2013 | | No | |
| 91 | Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2 | Complete | | 3/6/2013 | | No | |
| 92 | Start containment large bore pipe supports for Unit 2 | Complete | | 11/13/2014 | | No | |
| 93 | Integrated Head Package - Shipment of Equipment to Site - Unit 2 | Complete | | 5/9/2014 | | No | |
| 94 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2 | Complete | | 12/17/2013 | | No | |
| 95 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3 | Complete | | 2/7/2014 | | No | |
| 96 | Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2 | Complete | | 1/14/2013 | | No | |
| 97 | Start concrete fill of Nuclear Island structural modules CA01 and CA02 for Unit 2 | 4/3/2014 | 7/21/2016 | | +27 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 98 | Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2 | Complete | | 4/25/2014 | | No | |
| 99 | Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2 | Complete | | 1/8/2015 | | No | |

Legend = Completed = Completed this Quarter = Movement in Days Only





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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 100 | Deliver Reactor Vessel Internals to Port of Export - Unit 2 | 1/31/2014 | 7/30/2015 | | +18 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 101 | Set Unit 2 Containment Vessel #3 | 4/24/2014 | 8/30/2016 | | +28 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 102 | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2 | Complete | | 1/16/2015 | | No | |
| 103 | Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2 | Complete | | 5/28/2013 | | No | |
| 104 | Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | Complete | | 3/18/2015 | | No | |
| 105 | Polar Crane - Shipment of Equipment to Site - Unit 2 | 1/31/2014 | 12/31/2015 | | +23 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 106 | Receive Unit 2 Reactor Vessel on site from fabricator | Complete | | 7/31/2013 | | No | |
| 107 | Set Unit 2 Reactor Vessel | 6/23/2014 | 8/9/2016 | | +26 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 108 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3 | 12/31/2013 | 4/30/2015 | | +16 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 109 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3 | 8/31/2014 | 10/30/2015 | | +14 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 110 | Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2 | 10/31/2013 | 5/30/2016 | | +31 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 111 | Place first nuclear concrete for Unit 3 | Complete | | 11/2/2013 | | No | |

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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 112 | Set Unit 2 Steam Generator | 10/23/2014 | 10/4/2016 | | +24 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 113 | Main Transformers Ready to Ship - Unit 2 | Complete | | 7/31/2013 | | No | |
| 114 | Complete Unit 3 Steam Generator Hydrotest at fabricator | 2/28/2014 | 7/30/2015 | | +17 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 115 | Set Unit 2 Containment Vessel Bottom Head on basemat legs | Complete | | 5/22/2013 | | No | |
| 116 | Set Unit 2 Pressurizer Vessel | 5/16/2014 | 12/6/2016 | | +31 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 117 | Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3 | 2/28/2015 | 1/31/2017 | | +23 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 118 | Deliver Reactor Vessel Internals to Port of Export - Unit 3 | 6/30/2015 | 12/31/2016 | | +18 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 119 | Main Transformers Fabricator Issue PO for Material - Unit 3 | Complete | | 1/15/2015 | | No | |
| 120 | Complete welding of Unit 2 Passive Residual Heat Removal System piping | 2/5/2015 | 1/13/2017 | | +23 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 121 | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 3 | 4/30/2015 | 1/30/2016 | | +9 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 122 | Refueling Machine - Shipment of Equipment to Site - Unit 3 | 2/28/2015 | 3/27/2016 | | +13 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |

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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 123 | Set Unit 2 Polar Crane | 1/9/2015 | 1/11/2017 | | +24 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 124 | Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3 | 6/30/2015 | 4/30/2017 | | +22 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 125 | Main Transformers Ready to Ship - Unit 3 | 7/31/2015 | 12/30/2015 | | +5 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 126 | Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3 | 7/31/2014 | 7/25/2015 | | +12 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 127 | Start electrical cable pulling in Unit 2 Auxiliary Building | 8/14/2013 | 11/30/2016 | | +39 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 128 | Complete Unit 2 Reactor Coolant System cold hydro | 1/22/2016 | 2/19/2018 | | +25 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 129 | Activate class 1E DC power in Unit 2 Auxiliary Building | 3/15/2015 | 5/25/2017 | | +26 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 130 | Complete Unit 2 hot functional test | 5/3/2016 | 7/19/2018 | | +26 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 131 | Install Unit 3 ring 3 for containment vessel | 8/25/2015 | 2/27/2017 | | +18 Month(s) | No | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 132 | Load Unit 2 nuclear fuel | 9/15/2016 | 2/15/2019 | | +29 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |

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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 133 | Unit 2 Substantial Completion | 3/15/2017 | 8/10/2019 | | +29 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 134 | Set Unit 3 Reactor Vessel | 10/22/2015 | 5/26/2017 | | +19 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 135 | Set Unit 3 Steam Generator #2 | 2/25/2016 | 9/22/2017 | | +19 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 136 | Set Unit 3 Pressurizer Vessel | 7/16/2015 | 11/27/2017 | | +28 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 137 | Complete welding of Unit 3 Passive Residual Heat Removal System piping | 6/16/2016 | 1/29/2018 | | +19 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 138 | Set Unit 3 polar crane | 5/9/2016 | 12/18/2017 | | +19 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 139 | Start Unit 3 Shield Building roof slab rebar placement | 5/26/2016 | 5/29/2018 | | +24 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 140 | Start Unit 3 Auxiliary Building electrical cable pulling | 11/7/2014 | 6/9/2017 | | +31 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 141 | Activate Unit 3 Auxiliary Building class 1E DC power | 5/15/2016 | 2/11/2018 | | +21 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 142 | Complete Unit 3 Reactor Coolant System cold hydro | 3/22/2017 | 2/26/2019 | | +23 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |

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# Appendix 1
## VC Summer Units 2 and 3

| Tracking ID | Order No. 2012-884 Description | Order No. 2012-884 Date | 15-1Q Targeted Milestone Completion Date | Actual Completion Date | Delta Months from Order No. 2012-884 Date | Outside +18/-24 Months Contingency? | Notes |
|---|---|---|---|---|---|---|---|
| 143 | Complete Unit 3 hot functional test | 7/3/2017 | 5/26/2019 | | +22 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 144 | Complete Unit 3 nuclear fuel load | 11/15/2017 | 12/5/2019 | | +25 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 145 | Begin Unit 3 full power operation | 4/8/2018 | 5/1/2020 | | +25 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |
| 146 | Unit 3 Substantial Completion | 5/15/2018 | 5/28/2020 | | +24 Month(s) | Yes | SCE&G has proposed adjustment of milestones in Docket 2015-103-E. |

**SUMMARY**

| | | | | |
|---|---|---|---|---|
| **Total Milestones Completed** | **105** | **out of** | **146 =** | **72%** |
| **Milestone Movement - Order No. 2012-884 vs. 14-4Q:** | | | | |
| **a) Forward Movement** | **41** | **out of** | **146 =** | **28%** |
| **b) Backward Movement** | **0** | **out of** | **146 =** | **0%** |
| **Milestones Within +12 to +18 Month range** | **8** | **out of** | **146 =** | **5%** |
| **Milestones over the +18 Month range** | **31** | **out of** | **146 =** | **21%** |

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# APPENDIX 2

## V. C. Summer Nuclear Station Units 2 & 3

## Quarterly Report to the South Carolina Office of Regulatory Staff Submitted by South Carolina Electric & Gas Company Pursuant to Public Service Commission Order No. 2009-104(A)

## Quarter Ending March 31, 2015

**Appendix 2** is an updated and expanded version of the information contained in the capital cost schedule approved by the Commission in Order No. 2012-884.

**Appendix 2** shows:

1. The actual expenditures on the project by plant cost category through the current period.
2. The changes in capital costs reflecting the Company's current forecast of expenditures on the project for each future period by plant cost category. In updating its cost projections the Company has used the current construction schedule for the project and the Commission-approved inflation indices as set forth in **Appendix 4** to this report.
3. The cumulative CWIP for the project and the balance of CWIP that is not yet reflected in revised rates.
4. The current rate for calculating AFUDC computed as required under applicable FERC regulations.

The Cumulative Project Cash Flow target as approved in Order No. 2012-884 and as updated for escalation and other Commission-approved adjustments is found under the heading **"Per Order 2012-884 Adjusted."** The adjustments reflect:

1. Changes in inflation indices.
2. Budget Carry-Forward Adjustments used, where appropriate to track the effect of lower-than-expected cumulative costs on the future cumulative cash flow of the project.

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the current construction schedule and forecast of year-by-year costs going forward. This information is found under the heading **"Actual through March 2015 plus Projected."**

# Appendix 2

PUBLIC VERSION

## RESTATED and UPDATED CONSTRUCTION EXPENDITURES

(Thousands of $)

### V.C. Summer Units 2 and 3 - Summary of SCE&G Capital Cost Components

| Per Order 2012-884 Adjusted | Total | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual Project Cash Flow(per order) | 5,516,849 | 21,723 | 100,905 | 340,003 | 398,551 | 349,061 | 713,307 | 950,179 | 1,007,569 | 831,281 | 521,351 | 201,408 | 81,510 | - | - |
| Capital Cost Rescheduling Contingency | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Budget Carry-Forward Adjustment | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Net | 5,516,849 | 21,723 | 100,905 | 340,003 | 398,551 | 349,061 | 713,307 | 950,179 | 1,007,569 | 831,281 | 521,351 | 201,408 | 81,510 | - | - |
| Adjusted for Change in Escalation | 5,409,891 | 21,723 | 100,905 | 340,003 | 398,551 | 349,061 | 704,909 | 935,236 | 974,900 | 807,547 | 498,192 | 198,320 | 80,543 | - | - |
| Cumulative Project Cash Flow(Target) | | 21,723 | 122,629 | 462,632 | 861,183 | 1,210,244 | 1,915,153 | 2,850,390 | 3,825,289 | 4,632,836 | 5,131,028 | 5,329,348 | 5,409,891 | 5,409,891 | 5,409,891 |

### Actual through March 2015* plus Projected

| | | Actual | | | | | | | | Projected | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Plant Cost Categories | Total | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Fixed with No Adjustment | | | | | | | | | | | | | | | |
| Firm with Fixed Adjustment A | | | | | | | | | | | | | | | |
| Firm with Fixed Adjustment B | | | | | | | | | | | | | | | |
| Firm with Indexed Adjustment | | | | | | | | | | | | | | | |
| Actual Craft Wages | | | | | | | | | | | | | | | |
| Non-Labor Costs | | | | | | | | | | | | | | | |
| Time & Materials | | | | | | | | | | | | | | | |
| Owners Costs | | | | | | | | | | | | | | | |
| Transmission Costs | 329,512 | - | 26 | 724 | 927 | 11,964 | 51,677 | 56,593 | 46,439 | 64,130 | 66,552 | 29,770 | 710 | - | - |
| Total Base Project Costs(2007 $) | 5,246,638 | 21,723 | 97,386 | 319,073 | 374,810 | 314,977 | 488,461 | 448,947 | 418,639 | 719,604 | 755,876 | 666,613 | 401,301 | 177,050 | 42,178 |
| Total Project Escalation | 1,291,640 | - | 3,519 | 20,930 | 23,741 | 34,084 | 74,485 | 88,622 | 93,326 | 207,394 | 223,313 | 232,582 | 152,538 | 97,800 | 39,307 |
| Total Revised Project Cash Flow | 6,538,278 | 21,723 | 100,905 | 340,003 | 398,551 | 349,061 | 562,946 | 537,569 | 511,965 | 926,998 | 979,189 | 899,194 | 553,839 | 274,850 | 81,485 |
| Cumulative Project Cash Flow(Revised) | | 21,723 | 122,629 | 462,632 | 861,183 | 1,210,244 | 1,773,190 | 2,310,759 | 2,822,724 | 3,749,722 | 4,728,910 | 5,628,105 | 6,181,944 | 6,456,794 | 6,538,278 |
| AFUDC(Capitalized Interest) | 289,124 | 645 | 3,497 | 10,564 | 17,150 | 14,218 | 18,941 | 27,722 | 26,131 | 27,988 | 51,113 | 39,071 | 31,486 | 14,583 | 6,015 |
| Gross Construction | 6,827,402 | 22,368 | 104,403 | 350,567 | 415,701 | 363,278 | 581,886 | 565,291 | 538,096 | 954,986 | 1,030,302 | 938,266 | 585,326 | 289,433 | 87,500 |
| Construction Work in Progress | | 22,368 | 126,771 | 477,338 | 893,039 | 1,256,317 | 1,838,203 | 2,403,495 | 2,941,590 | 3,896,577 | 4,926,878 | 5,865,144 | 6,450,470 | 6,739,902 | 6,827,402 |

CONFIDENTIAL

| | |
|---|---|
| CWIP Currently in Rates | 2,666,843 |
| March 31, 2015 Actual Incremental CWIP Not Currently in Rates | 433,765 |

*Applicable index escalation rates for 2015 are estimated. Escalation is subject to restatement when actual indices for 2015 are final.

Notes:
2015-2018 AFUDC rate applied 5.68%

The AFUDC rate applied is the current SCE&G rate. AFUDC rates can vary with changes in market interest rates, SCE&G's embedded cost of capital, capitalization ratios, construction work in process, and SCE&G's short-term debt outstanding.

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# APPENDIX 3

## V. C. Summer Nuclear Station Units 2 & 3

## Quarterly Report to the South Carolina Office of Regulatory Staff Submitted by South Carolina Electric & Gas Company Pursuant to Public Service Commission Order No. 2009-104(A)

## Quarter Ending March 31, 2015

For comparison purposes, **Appendix 3** provides the schedule of capital costs for the project which was approved by the Commission in Order No. 2012-884 as the Approved Capital Cost of the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(2). **Appendix 3** also reflects the forecast of AFUDC expense based on these adjusted schedules and the AFUDC rates that were current at the time of Order No. 2012-884. **Appendix 3** is intended to provide a fixed point of reference for future revisions and updating. While the schedule of costs contained on **Appendix 3** is subject to revision for escalation, changes in AFUDC rates and amounts, capital cost scheduling contingencies and other contingency adjustments as authorized in Order No. 2009-104(A), no such adjustments have been made to the schedules presented here.

# Appendix 3

PUBLIC VERSION

## RESTATED and UPDATED CONSTRUCTION EXPENDITURES

(Thousands of $)

### V.C. Summer Units 2 and 3 - Summary of SCE&G Capital Cost Components

**Per Order 2012-884**

| Plant Cost Categories | Total | Actual | | | | | Projected | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| Fixed with No Adjustment | CONFIDENTIAL | | | | | | | | | | | | |
| Firm with Fixed Adjustment A | | | | | | | | | | | | | |
| Firm with Fixed Adjustment B | | | | | | | | | | | | | |
| Firm with Indexed Adjustment | | | | | | | | | | | | | |
| Actual Craft Wages | | | | | | | | | | | | | |
| Non-Labor Costs | | | | | | | | | | | | | |
| Time & Materials | | | | | | | | | | | | | |
| Owners Costs | | | | | | | | | | | | | |
| Transmission Costs | 329,512 | - | 26 | 724 | 927 | 11,964 | 57,206 | 56,903 | 57,508 | 77,990 | 64,727 | 1,537 | - |
| Total Base Project Costs(2007 $) | 4,548,405 | 21,723 | 97,386 | 319,073 | 374,810 | 314,977 | 613,678 | 780,753 | 792,394 | 647,295 | 386,537 | 142,999 | 56,781 |
| Total Project Escalation | 968,444 | - | 3,519 | 20,930 | 23,741 | 34,084 | 99,630 | 169,425 | 215,175 | 183,987 | 134,815 | 58,409 | 24,729 |
| Total Revised Project Cash Flow | 5,516,849 | 21,723 | 100,905 | 340,003 | 398,551 | 349,061 | 713,307 | 950,179 | 1,007,569 | 831,281 | 521,351 | 201,408 | 81,510 |
| Cumulative Project Cash Flow(Revised) | | 21,723 | 122,629 | 462,632 | 861,183 | 1,210,244 | 1,923,551 | 2,873,730 | 3,881,299 | 4,712,580 | 5,233,931 | 5,435,339 | 5,516,849 |
| AFUDC(Capitalized Interest) | 237,715 | 645 | 3,497 | 10,564 | 17,150 | 14,218 | 20,449 | 38,384 | 42,868 | 40,888 | 27,518 | 15,391 | 6,144 |
| Construction Work in Progress | | 22,368 | 126,771 | 477,338 | 893,039 | 1,256,317 | 1,990,074 | 2,978,637 | 4,029,074 | 4,901,243 | 5,450,113 | 5,666,911 | 5,754,565 |

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# APPENDIX 4

## V. C. Summer Nuclear Station Units 2 & 3

## Quarterly Report to the South Carolina Office of Regulatory Staff Submitted by South Carolina Electric & Gas Company Pursuant to Public Service Commission Order No. 2009-104(A)

## Quarter Ending March 31, 2015

**Appendix 4** shows the changes in the inflation indices approved in Order No. 2009-104(A). Included is a ten year history of the Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index. The change in the relevant indices from the Combined Application is also provided.

# Appendix 4, Chart A

## Inflation Indices, Chart A

**HW All Steam Generation Plant Index, January 2015**

| Year | Index | Yr/Yr change | Three Year Average | Five Year Average | Ten Year Average |
|---|---|---|---|---|---|
| 2015 | 619 | 3.17% | 2.28% | 2.94% | 4.08% |
| 2014 | 600 | -1.15% | 2.73% | 2.05% | 4.62% |
| 2013 | 607 | 4.84% | 4.24% | 3.25% | 4.95% |
| 2012 | 579 | 4.51% | 2.19% | 3.91% | 4.71% |
| 2011 | 554 | 3.36% | 2.30% | 4.73% | |
| 2010 | 536 | -1.29% | 3.89% | 5.21% | |
| 2009 | 543 | 4.83% | 7.19% | 7.19% | |
| 2008 | 518 | 8.14% | 7.50% | 6.65% | |
| 2007 | 479 | 8.62% | 7.66% | 5.51% | |
| 2006 | 441 | 5.76% | 5.49% | 4.17% | |
| 2005 | 417 | 8.59% | 4.39% | | |
| 2004 | 384 | 2.13% | 2.17% | | |
| 2003 | 376 | 2.45% | | | |
| 2002 | 367 | 1.94% | | | |
| 2001 | 360 | | | | |

| | BLRA Filing Jul-07 | Order 2010-12 Jan-09 | Order 2011-345 Jul-10 | Order 2012-884 Jan-12 | Update Jan-15 |
|---|---|---|---|---|---|
| **HW All Steam Index:** | | | | | |
| One year | **7.68%** | **4.83%** | **4.79%** | **4.51%** | **3.17%** |
| Five Year | **5.74%** | **7.19%** | **5.31%** | **3.91%** | **2.94%** |

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# Appendix 4, Chart B

## Inflation Indices, Chart B

**HW All Steam and Nuclear Generation Plant Index, January 2015**

| Year | Index | Yr/Yr change | Three Year Average | Five Year Average | Ten Year Average |
|---|---|---|---|---|---|
| 2015 | 619 | 3.17% | 2.35% | 2.95% | 4.10% |
| 2014 | 600 | -1.32% | 2.80% | 2.09% | 4.65% |
| 2013 | 608 | 5.19% | 4.29% | 3.32% | 4.99% |
| 2012 | 578 | 4.52% | 2.20% | 3.87% | 4.72% |
| 2011 | 553 | 3.17% | 2.30% | 4.74% | |
| 2010 | 536 | -1.11% | 3.89% | 5.26% | |
| 2009 | 542 | 4.84% | 7.21% | 7.20% | |
| 2008 | 517 | 7.93% | 7.52% | 6.66% | |
| 2007 | 479 | 8.86% | 7.75% | 5.57% | |
| 2006 | 440 | 5.77% | 5.51% | 4.19% | |
| 2005 | 416 | 8.62% | 4.40% | | |
| 2004 | 383 | 2.13% | 2.18% | | |
| 2003 | 375 | 2.46% | | | |
| 2002 | 366 | 1.95% | | | |
| 2001 | 359 | | | | |

| | BLRA Filing Jul-07 | Order 2010-12 Jan-09 | Order 2011-345 Jul-10 | Order 2012-884 Jan-12 | Update Jan-15 |
|---|---|---|---|---|---|
| **HW All Steam/Nuclear Index:** | | | | | |
| One year | **7.69%** | **4.84%** | **4.60%** | **4.52%** | **3.17%** |
| Five Year | **5.75%** | **7.20%** | **5.32%** | **3.87%** | **2.95%** |

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# Appendix 4, Chart C

## Inflation Indices, Chart C

### HW All Transmission Plant Index, January 2015

| Year | Index | Yr/Yr change | Three Year Average | Five Year Average | Ten Year Average |
|---|---|---|---|---|---|
| 2015 | 610 | 2.52% | 1.82% | 1.88% | 3.81% |
| 2014 | 595 | -0.34% | 1.81% | 0.55% | 4.57% |
| 2013 | 597 | 3.29% | 2.40% | 2.10% | 4.90% |
| 2012 | 578 | 2.48% | -0.07% | 3.00% | 4.55% |
| 2011 | 564 | 1.44% | 1.57% | 4.33% | |
| 2010 | 556 | -4.14% | 3.68% | 5.74% | |
| 2009 | 580 | 7.41% | 8.11% | 8.60% | |
| 2008 | 540 | 7.78% | 8.48% | 7.71% | |
| 2007 | 501 | 9.15% | 9.27% | 6.10% | |
| 2006 | 459 | 8.51% | 7.21% | 4.76% | |
| 2005 | 423 | 10.16% | 4.28% | | |
| 2004 | 384 | 2.95% | 1.72% | | |
| 2003 | 373 | -0.27% | | | |
| 2002 | 374 | 2.47% | | | |
| 2001 | 365 | | | | |

| | BLRA Filing Jul-07 | Order 2010-12 Jan-09 | Order 2011-345 Jul-10 | Order 2012-884 Jan-12 | Update Jan-15 |
|---|---|---|---|---|---|
| **HW All Transmission Plant Index** | | | | | |
| One year | **8.82%** | **7.41%** | **5.08%** | **2.48%** | **2.52%** |
| Five Year | **6.86%** | **8.60%** | **5.23%** | **3.00%** | **1.88%** |

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# Appendix 4

## Inflation Indices, Chart D

### GDP Chained Price Index, 2014

| SERIESTYPE | UNIT | SHORT LABEL | ID | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|---|
| **Chained Price Index--Gross Domestic Product** | | | | | | | | | |
| U.S. Macro - 10 Year Baseline | (2009=100) | Chained price index-gross domestic product , Source: BEA , Units: index- 2009=100.0 | 45158933 | 100.00 | 101.23 | 103.32 | 105.17 | 106.74 | 108.32 |
| Annual Percent change | | | | | **1.23%** | **2.06%** | **1.79%** | **1.49%** | **1.48%** |
| 3-Year Annual Percent change | | | | | | | 1.70% | 1.78% | 1.59% |
| **5-Year Annual Percent change** | | | | | | | | | **1.61%** |
| **Consumer Price Index, All-Urban** | | | | | | | | | |
| U.S. Macro - 10 Year Baseline | Index | Consumer price index, all-urban , Source: BLS , Units: - 1982-84=1.00 | 45158182 | 2.15 | 2.18 | 2.25 | 2.30 | 2.33 | 2.37 |
| Percent change | | | | | **1.40%** | **3.21%** | **2.22%** | **1.30%** | **1.72%** |
| 3-Year Annual Percent change | | | | | | | 2.28% | 2.25% | 1.75% |
| 5-Year Annual Percent change | | | | | | | | | **1.97%** |
| **Producer Price Index--Finished Goods** | | | | | | | | | |
| U.S. Macro - 10 Year Baseline | (1982=1.0) | Producer price index-finished goods , Source: BLS , Units: index- 1982=1.0 | 45159751 | 1.73 | 1.80 | 1.91 | 1.94 | 1.97 | 2.00 |
| Percent change | | | | | **4.05%** | **6.11%** | **1.57%** | **1.55%** | **1.52%** |
| 3-Year Annual Percent change | | | | | | | 3.91% | 3.08% | 1.55% |
| 5-Year Annual Percent change | | | | | | | | | **2.96%** |

| | BLRA Filing Jul-07 | Order 2010-12 Jan-09 | Order 2011-345 Jul-10 | Order 2012-884 Jan-12 | Update Jan-15 |
|---|---|---|---|---|---|
| **GDP Chained Price Index** | | | | | |
| One year | 2.66% | 2.24% | 0.43% | 2.11% | 1.48% |
| Five Year | 2.81% | 2.86% | 1.97% | 1.69% | 1.61% |

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# APPENDIX 5

## V. C. Summer Nuclear Station Units 2 & 3

**Quarterly Report to the South Carolina Office of Regulatory Staff**
**Submitted by South Carolina Electric & Gas Company**
**Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending March 31, 2015**

**Appendix 5** indicates those LARs that have been submitted by SCE&G to the NRC for review. Included is the title of each LAR, a brief description of the change(s) associated with the LAR, the date the LAR was submitted to the NRC, and the status of the requests.



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# Appendix 5



## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 12-01 - Additional Electrical Penetration Assemblies | Provide additional penetrations of the Containment Vessel to allow sufficient space for electrical and instrument cables. | 8/29/2012 | Approved on 7/1/2013 |
| LAR-12-02 – Tier 1 Table 3.3-1 Discrepancies – PAR Utilized | Conform the current ITAAC standards used to verify the shield building wall thickness to align with those approved in DCD Rev. 19. | 9/26/2012 | Approved on 5/30/2013 |
| LAR 13-01 - Basemat Shear Reinforcement Design Spacing Requirements - PAR Utilized | Clarify the provisions for maximum spacing of the shear reinforcement in the basemat below the auxiliary building to be consistent with requirements shown in existing FSAR figures. | 1/15/2013 | Approved on 2/26/2013 |
| LAR 13-02 - Basemat Shear Reinforcement Design Details - PAR Utilized | Revises the requirements for development of basemat shear reinforcement in the licensing basis from ACI 349 Appendix B to ACI 318-11, Section 12.6. The use of ACI 318 criteria for headed reinforcement results in longer shear ties and thicker concrete in areas below the elevator pits and a sump in the nuclear island basemat. | 1/18/2013 | Approved on 3/1/2013 |
| LAR 13-03 - Turbine Building Eccentric and Concentric Bracing | Revises the turbine building main area to use a mixed bracing system using eccentrically and concentrically braced frames as a means of preventing the turbine building from collapsing onto the Nuclear Island (NI) during a seismic event. The structural design code is also changed to a code that includes adequate provisions for the new bracing system. | 2/7/2013 | Approved on 7/1/2013 |
| LAR 13-04 - Reconciliation of Tier 1 Valve Differences | Reconciles valve related information contained in Tier 1 material to be consistent with corresponding Tier 2 material currently incorporated in the UFSAR. | 2/7/2013 | Under NRC Review |

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

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# Appendix 5



## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 13-05 - Structural Modules Shear Stud Size and Spacing | Revises Note 2 of UFSAR Figure 3.8.3-8, Sheet 1, which presents typical structural wall module details. This information needs to be changed to be consistent with the design basis calculations. | 2/14/2013 | Approved on 5/23/2013 |
| LAR 13-06 - Primary Sampling System Changes | Alters the design of the Primary Sampling System (PSS) by replacing a check valve with a solenoid-operated gate valve, modifying the PSS inside-containment header and adding a PSS containment penetration. | 2/7/2013 | Approved on 8/22/2013 |
| LAR 13-07 - Changes to the Chemical and Volume Control System (CVS) | Alters the design of the Chemical and Volume Control System (CVS) by adding/changing valves, separating the zinc and hydrogen injection paths and relocating the zinc injection point. | 3/13/2013 | Approved on 2/24/2014 |
| LAR 13-08 - Module Obstructions and Details | Withdrawn after review with NRC-see Letter NND-13-202. *Superceded by LAR 13-20*. | 2/28/2013 | Withdrawn |
| LAR 13-09 - Annex/Radwaste Building Layout Changes | Updates column line numbers on Annex Building Figures and changes the configuration of the Radwaste building by adding three bunkers for storage and merging two rooms. | 2/27/2014 | Under NRC Review |
| LAR 13-10 - Human Factors Engineering Integrated System Validation Plan | Revises referenced document APP-OCS-GEH-320 from Revision D to Revision 2. | 3/13/2013 | Approved on 7/31/2014 |
| LAR 13-11 - NI Wall Reinforcement Criteria -PAR Utilized | Revises structural code criteria for anchoring reinforcement bar within the NI walls (adopts ACI-318 for this purpose). | 3/26/2013 | Approved on 6/6/2013 |

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# Appendix 5



## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 13-12 - Fire Area Boundary Changes | Revises various information to support fire area boundaries (HVAC information, stairwell changes, and other layout changes). | 7/17/2013 | Approved on 9/9/2014 |
| LAR 13-13 - Turbine Building Layout Changes | Revises the door location, clarifies column line designations, changes floor to ceiling heights and increases elevations and wall thickness in certain areas. | 7/30/2013 | Approved on 5/12/2014 |
| LAR 13-14 - Turbine Building Battery Room and Electrical Changes | Revises the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) and Class 1E dc and Uninterruptible Power Supply System (IDS) by: (1) Increasing EDS total equipment capacity, component ratings, and protective device sizing to support increased load demand, (2) Relocating equipment and moving Turbine Building (TB) first bay EDS Battery Room and Charger Room. The floor elevation increases from elevation 148'-0" to elevation 148'-10" to accommodate associated equipment cabling with this activity, and (3) Removing the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Battery. | 10/2/2013 | Approved on 10/24/2014 |
| LAR 13-15 - Operator Break Room Configuration | No description provided. This is no longer a LAR. | Changed to a Non-LAR Departure | |
| LAR 13-16 - Revision to Human Factors Engineering Design Verification Plan (GEH-120) | Revises referenced document APP-OCS-GEH-120 from Revision B to Revision 1. | 9/25/2013 | Approved on 7/31/2014 |

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## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 13-17 - Revision to Human Factors Engineering Task Support Verification (GEH-220) | Revises referenced document APP-OCS-GEH-220 from Revision B to Revision 1. | 9/25/2013 | Approved on 7/31/2014 |
| LAR 13-18 - Revision to Human Factors Engineering Issue Resolution Plan | Revises APP-OCS-GEH-420 to make a number of changes in order to refine the process for capturing and resolving Human Engineering Discrepancies (HEDs) from that process document as described in Revision B. | 10/3/2013 | Approved on 7/31/2014 |
| LAR 13-19 - Revision to Human Factors Engineering Plan | Revises APP-OCS-GEH-520 to make a number of changes in order to confirm aspects of the HSI and OCS design features that could not be evaluated in other Human Factors Engineering (HFE) V&V activities. | 10/3/2013 | Approved on 7/31/2014 |
| LAR 13-20 - Modules / Stud Channel Obstructions Revision | Revises requirements for design spacing of shear studs and wall module trusses and the design of structural elements of the trusses such as angles and channels. These revisions are to address interferences and obstructions. | 7/17/2013 | Approved on 11/19/2013 |
| LAR 13-21 - CA03 Module Design Differences | Corrects inconsistencies between Tier 2* and Tier 2 information. | 2/2/2014 | Under NRC Review |
| LAR 13-22 - Annex Building Structure and Layout Changes | The proposed changes would revise the Combined Licenses (COLs) by (a) installing an additional nonsafety-related battery, (b) revising the annex building internal configuration by converting a shift turnover room to a battery room, adding an additional battery equipment room, and moving a fire area wall, (c) increasing the height of a room, and (d) increasing certain floor thicknesses. The proposed changes include reconfiguring existing rooms and related room, wall, and access path changes. | 12/4/2014 | Under NRC Review |

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

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# Appendix 5



## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 13-23 - Reinforced Concrete (RC) to Steel Plate Composite Construction (SC) Connections | The proposed amendment would revise Tier 2* and associated Tier 2 material related to the design details of connections in several locations between the steel plate composite construction (SC) used for the shield building and the standard reinforced concrete (RC) walls, floors, and roofs of the auxiliary building and lower walls of the shield building. | 7/11/2014 | Approved on 12/16/2014 |
| LAR 13-25 - Tier 1 Editorial and Consistency Changes | Revises information to correct consistency and editorial issues. This submittal does not contain any technical changes. | 7/2/2013 | Approved on 7/31/2014 |
| LAR 13-26 - EP Rule Changes | Revision to the Emergency Plan in order to comply with regulatory changes enacted by the Nuclear Regulatory Commission (NRC) in the Final Rule. These changes include the addition of text that 1) clarifies the distance of the Emergency Operations Facility (EOF) from the site, 2) updates the content of exercise scenarios to be performed at least once each exercise cycle, and 3) requires the Evacuation Time Estimate (ETE) to be updated annually between decennial censuses. | 12/17/2013 | Approved on 6/20/2014 |
| LAR 13-27 - Control Rod Drive Mechanism Latching Relays | The proposed change would revise Combined License (COL) numbers NPF-93 and NPF-94 for Virgil C. Summer Nuclear Station, Units 2 & 3, respectively, to specify the use of Control Rod Drive Mechanism (CRDM) latching control relays (referred to as control relays herein) in lieu of field breakers to open the CRDM motor generator (MG) set generator field on a diverse actuation system (DAS) signal. | 10/30/2014 | Under NRC Review |

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# Appendix 5



## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 13-28 - Piping Line Number Additions, Deletions, and Functional Capability Re-designation | The proposed changes revise the Combined License (COL) in regard to changes to the Automatic Depressurization System (ADS), the Passive Containment Cooling System (PCS), the Passive Core Cooling System (PXS), the Normal Residual Heat Removal System (RNS), the Containment Air Filtration System (VFS), Spent Fuel Pool Cooling System (SFS) and the Sanitary Discharge System (SDS) piping line numbers to reflect the as-designed configuration resulting from changes in piping layout or rerouting. The changes consist of adding or deleting piping line numbers of existing piping lines, or updating the functional capability classification of existing process flow lines for the tables. | 12/18/2014 | Under NRC Review |
| LAR 13-29 - Class 1E DC and Uniterruptible Power Supply System Removal of Spare Battery Termination Boxes | The proposed changes revise COLs concerning the Class 1E dc and Uninterruptible Power Supply System (IDS). The proposed changes replace four Spare Termination Boxes (IDSS-DF-2, IDSS-DF-3, IDSS-DF-4, and IDSS-DF-5) with a single Spare Battery Termination Box (IDSS-DF-3), and make minor raceway and cable routing changes. | 12/19/2014 | Under NRC Review |
| LAR 13-32 - WLS Changes | Clarifies the description of the WLS, including changing depiction of valves to be consistent with Tier 1 figure conventions, ensuring consistency between Tier 1 and Tier 2 descriptions, and clarifying the safety classification of the drain hubs. | 8/30/2013 | Approved on 1/8/2014 |

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# Appendix 5



## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 13-33 - Passive Core Cooling System (PXS) Condensate Return | The proposed amendment would revise the plant-specific Tier 1 and associated Tier 2 material to increase the efficiency of the return of condensate utilized by the passive core cooling system (PXS) to the in-containment refueling water storage tank (IRWST) to support the capability for long term cooling. | 7/8/2014 | Under NRC Review |
| LAR 13-34 - Clarification of Tier 2* Material in HFE Documents | The proposed changes reclassify portions of the five Tier 2* Human Factors (HF) Verification & Validation (V&V) planning documents listed in Updated Final Safety Analysis Report (UFSAR) Table 1.6-1 and Chapter 18, Section 18.11.2. | 3/19/2014 | Approved on 10/8/2014 |
| LAR 13-36 - CIM / DAS Diversity Clarification | The requested amendment proposed to depart from approved AP1000 Design Control Document (DCD) Tier 2* information as incorporated into the Updated Final Safety Analysis Report (UFSAR) by clarifying the position on design diversity, specifically human diversity, as related to the Component Interface Module (CIM) and Diverse Actuation System (DAS) design. | 9/11/2014 | Under NRC Review |
| LAR 13-37 - VCSNS Units 2 & 3 Tech Spec Upgrade | Revises Technical Specifications to closer align with the guidance of the Technical Specifications Task Force (TSTF) Writer's Guide for Plant-Specific Improved Technical Specifications, TSTF-GG-05-01, Revision 1, and with NUREG-1431, Standard Technical Specifications - Westinghouse Plants as updated by NRC approved generic changes. | 12/4/2013 | Approved on 11/12/2014 |

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# Appendix 5



## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 13-38 - ACI Code Compliance with Critical Sections Higher Elevations | Withdrawn after review with NRC-see Letter NND-13-0745. | 11/7/2013 | Withdrawn |
| LAR 13-41 - Coating Thermal Conductivity | Revises Design Control Document (DCD) Tier 2 information as incorporated into the Updated Final Safety Analysis Report (UFSAR) to allow use of a new methodology to determine the effective thermal conductivity resulting from oxidation of the inorganic zinc (IOZ) used in the containment vessel coating system. | 11/26/2013 | Under NRC Review |
| LAR 13-42 - Tier 1 Editorial and Consistency Changes #2 | Allows various changes to correct editorial errors in Tier 1 and promote consistency with the Updated Final Safety Analysis Report (Tier 2 information). | 5/20/2014 | Approved on 3/10/2015 |
| LAR 14-01 - Auxiliary Building Roof and Floor Details | Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) to identify design details of the floors of the auxiliary building that may vary due to design and loading conditions, in accordance with code requirements. | 4/3/2014 | Approved on 7/18/2014 |
| LAR 14-03 - Tier 2* Editorial and Clarification Changes | Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by making editorial and consistency corrections. | 6/12/2014 | Under NRC Review |

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## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 14-05 - Containment Internal Structural Module Design Details | The requested amendment proposes to depart from Tier 2* information in the Updated Final Safety Analysis Report (UFSAR), plant-specific Tier 1 and corresponding COL Appendix C information, and involved UFSAR Tier 2 information to address changes in the UFSAR and design documents related to containment internal structural wall module design details. | 7/17/2014 | Approved on 3/12/2015 |
| LAR 14-06 - Enclosures for Class 1E Electrical Penetrations in Middle Annulus | Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by eliminating the Division A fire zone enclosure and adding three new fire zones for Divisions B, C, and D Class 1 E electrical penetration rooms. | 6/20/2014 | Approved on 12/30/2014 |
| LAR 14-07 - CA04 Structural Module ITAAC Dimensions Change | The proposed amendment would allow changes to adjust the concrete wall thickness tolerances of four Nuclear Island walls found in Tier 1. | 9/25/2014 | Under NRC Review |
| LAR 14-08 - Integrated Test Program (ITP) | The requested amendment requires changes to the Updated Final Safety Analysis Report (UFSAR) in the form of departures from the incorporated plant-specific Design Control Document (DCD) Tier 2 information, and involves changes to related plant-specific Tier 1 information with corresponding changes to the associated COL information. Many of the changes in this amendment request are done in order to conform to the Tier 1 Section 3.4 exemption request described in Enclosure 2. In that change, construction and installation testing is removed from the ITP and replaced with component testing. | 10/23/2014 | Under NRC Review |

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## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 14-09 - Turbine Building Switchgear Room and Office Layout Changes | The requested amendment would depart from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by relocating fire area rated fire barriers due to changes to the layout of the switchgear rooms and office area in the turbine building. The requested amendment would also depart from plant-specific DCD Tier 2 material that involves the proposed Tier 2* departures. | 9/18/2014 | Under NRC Review |
| LAR 14-15 - Compressed and Instrument Air Supply Modification | The proposed change would revise the Combined Licenses (COLs) in regard to removing a supply line from the Compressed and Instrument Air System (CAS) to the generator breaker package and involves changes to related plant-specific Tier 1 information, with corresponding changes to associated COL Appendix C information. | 10/30/2014 | Under NRC Review |
| LAR 14-16 - Condensate Water Storage Tank Volume | No description provided. This is no longer a LAR. | Changed to a Non-LAR Departure | |
| LAR 14-19 - HFE OSA Task Update and Removal of WCAP-15847 | Tier 2* document WCAP-15847 identifies documents that were used to support the AP1000 Design Certification. These documents have either been superseded or discontinued. Therefore, an amendment is being proposed to implement the necessary Tier 2* changes to delete WCAP-15847 from the UFSAR. In addition to this change, a Human Factors Engineering (HFE) Operational Sequence Analysis (OSA) task related to the Automatic Depressurization System (ADS) needs to be clarified. | 1/27/2015 | Under NRC Review |

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## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

| Topic | Description of Change | Submittal Date | Status |
|---|---|---|---|
| LAR 15-01 - HFE V&V Plan Updates to Support ISV | The proposed changes will resolve inconsistencies and implement changes identified during the review of Human Factors (HF) Verification and Validation (V&V) plans. These changes involve revising Tier 2* information contained within the Human Factors Engineering (HFE) Design Verification, Task Support Verification and Integrated System Validation (ISV) plans. | 2/10/2015 | Under NRC Review |

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