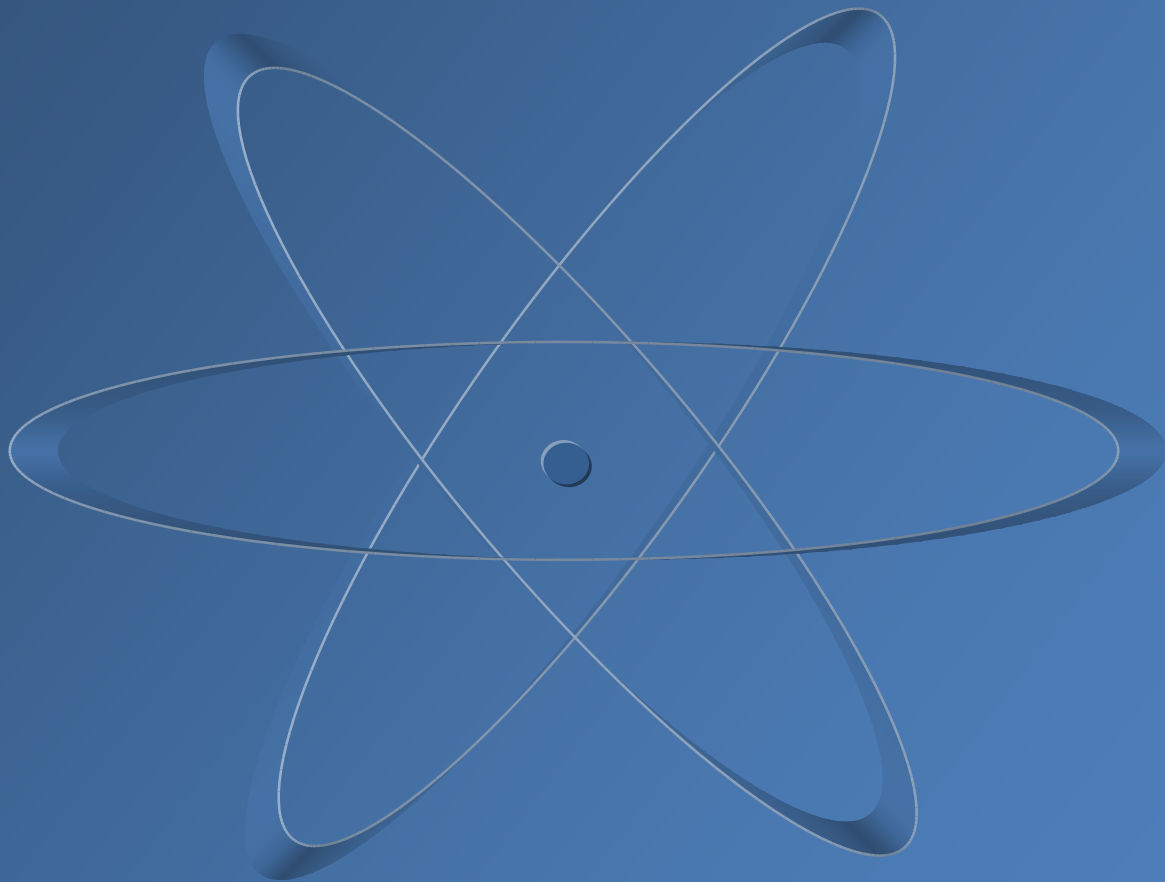


South Carolina Office of Regulatory Staff
Review of South Carolina Electric & Gas Company's
2011 1st Quarter Report on
V. C. Summer Units 2 and 3
Status of Construction



July 8, 2011



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Introduction

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

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

SCE&G has disclosed that Santee Cooper is reviewing its level of participation in constructing the Units. On March 21, 2011, Santee Cooper issued a press release announcing it signed a letter of intent to negotiate a power purchase agreement with the Orlando Utilities Commission (“OUC”). This press release states that Santee Cooper is negotiating the sale of 5 to 10 percent of the capacity and output from Santee Cooper’s ownership interest in the two new units. Based on this press release, the letter of intent also includes as part of the potential transaction an option for OUC’s future acquisition of a portion of Santee Cooper’s remaining ownership interest in the Units.

On May 16, 2011, SCE&G submitted its 2011 1st Quarter Report (“Report”) related to its construction of the Units. The Report is in Commission Docket No. 2008-196-E and covers the quarter ending March 31, 2011. The Report incorporates updated capital cost schedules per Commission Order No. 2011-345, which was also issued on May 16, 2011. Accordingly, ORS’s review of SCE&G Report reflects the updated capital cost schedules. This matter is discussed in further detail in the Section “Notable Activities Occurring after March 31, 2011.”

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

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

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

Approved Schedule Review

Milestone Schedule

As of March 31, 2011, ORS verified that of the Milestone Schedule's 146 activities:

- 59 milestone activities are complete
- 87 milestone activities are not completed (includes 5 delayed historical and 82 future milestones)

ORS also verified that during the 1st Quarter of 2011:

- Three (3) milestone activities were scheduled to be completed
 - Two (2) of these milestones have been completed
 - One (1) of these milestones is not complete

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

As of the end of the 1st Quarter of 2011, ORS identified two (2) Caution Milestones. Below is a status of these milestones:

- **Milestone Activity No. 79** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment – Unit 2.*
Status: Delayed 10 months.

This activity was scheduled to be completed on June 30, 2010. Its revised target completion date is now April 30, 2011. Mangiarotti, located in Italy, is the manufacturer for several major components of the AP1000 reactor, including the passive residual heat removal heat exchanger. It was previously reported that Westinghouse Electric Company (“WEC”) had identified quality assurance deficiencies during an audit of Mangiarotti related to its sub-suppliers. Past Stop Work Orders and failed sub-supplier qualifications are the major reasons for the delay.

The Company is monitoring the fabrication status at Mangiarotti to ensure related milestones remain within the specified contingency. However, SCE&G has identified a potential impact to the component delivery dates. WEC is working with Mangiarotti to improve the schedule.

- **Milestone Activity No. 80** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing – Unit 2.*
Status: Delayed 12 months.

This activity was scheduled to be completed on January 31, 2011. The revised target completion date is January 31, 2012. The delay in this milestone activity is also associated with Mangiarotti. See the above discussion related to Milestone Activity No. 79.

SCE&G's Milestone Schedule attached to the Report indicates that overall construction is on schedule and does not identify any impact to Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively. However, the EPC Contract does not allow for any acceleration or delay in the substantial completion date. The Company states in its Report that the current construction plan will not allow Unit 2 to be completed by the EPC Contract substantial completion date of April 1, 2016.

ORS's review of the approved schedule and the EPC Contract confirms that the project remains on schedule given the schedule criteria established in the Base Load Review Order. ORS also confirms that a condition of the EPC Contract may not be met. That is, the substantial completion date of April 1, 2016 for Unit 2 – as set forth in the EPC Contract – will likely be delayed due to an expected delay in the issuance of the Combined License ("COL"). Change Order No. 11 discussed in the Section "Change Orders" sets forth the Company's actions to address this matter. Appendix A shows details of the Milestone Schedule as of March 31, 2011.

ORS reviews all invoices associated with the Milestone Schedule and during the 1st quarter 2011, there was one (1) invoice paid. This invoice relates to the completion of Milestone Activity Number 62, which is the purchase order being issued by the Polar Crane fabricator for the main hoist drum and wire rope for Units 2 & 3. ORS found that the invoice amount was consistent with the EPC payment schedule and determined that the escalation applied was consistent with the updated Handy Whitman inflation indices.

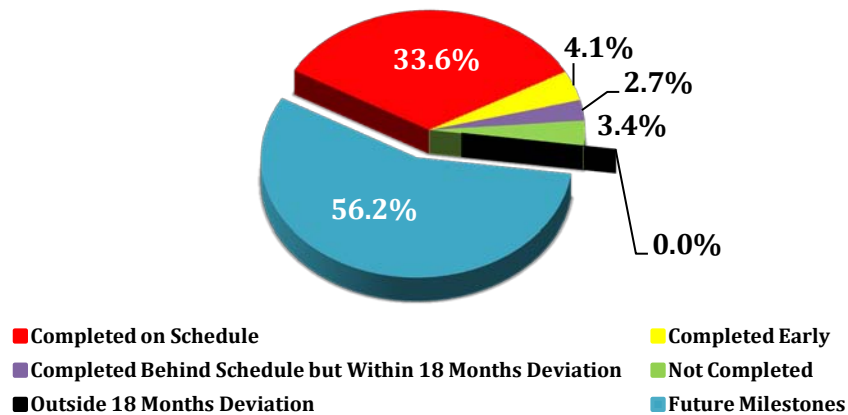
Table 1 shows the status of the 64 historical milestones and Chart 1 shows the status of all 146 milestones for the 1st quarter of 2011 and prior.¹

Table 1:

| Historical Milestones | | |
|---|------------------------|----------------------------|
| <i>1st Quarter 2011 and Prior</i> | | |
| 64 of 146 Total Milestones | | |
| | # of Milestones | % of All Milestones |
| Completed on Schedule | 49 | 33.6% |
| Completed Early | 6 | 4.1% |
| Completed Behind Schedule but Within 18 Months Deviation | 4 | 2.7% |
| Not Completed | 5 | 3.4% |
| Outside 18 Months Deviation | 0 | 0.0% |
| Total Historical Milestones | 64 | 43.8% |

Chart 1:

Milestone Status
1st Quarter 2011 and Prior



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

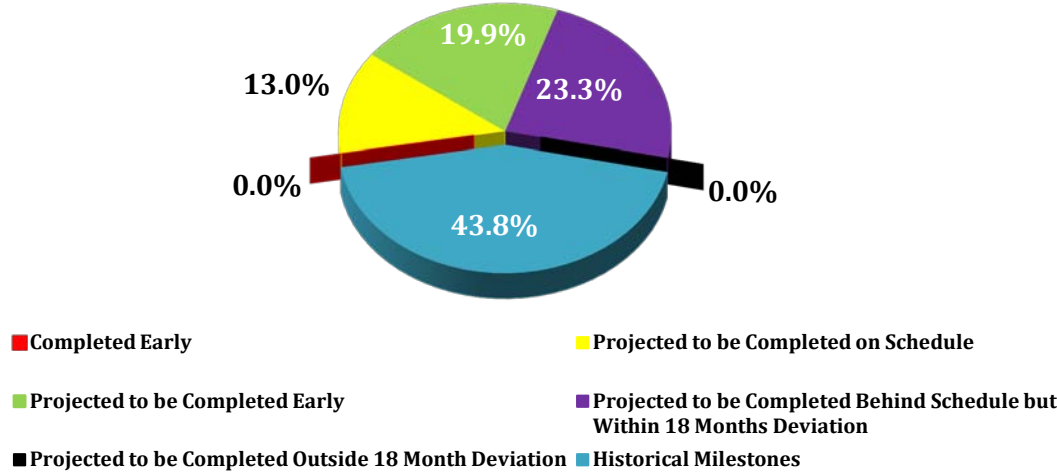
Table 2 shows the status of the 82 future milestones and Chart 2 shows the status of all 146 milestones for the 2nd quarter 2011 and beyond.²

Table 2:

| Future Milestones <i>2nd Quarter 2011 and Beyond</i> 82 of 146 Total Milestones | | |
|--|-----------------|---------------------|
| | # of Milestones | % of All Milestones |
| Completed Early | 0 | 0.0% |
| Projected to be Completed on Schedule | 19 | 13.0% |
| Projected to be Completed Early | 29 | 19.9% |
| Projected to be Completed Behind Schedule but Within 18 Months Deviation | 34 | 23.3% |
| Projected to be Outside 18 Month Deviation | 0 | 0.0% |
| Total Future Milestones | 82 | 56.2% |

Chart 2:

Milestone Status
2nd Quarter 2011 and Beyond



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

Specific Construction Activities

Site construction activities continue to progress. The construction workforce consists of approximately 900 contract personnel and 140 SCE&G personnel. Some major construction activities during the 1st quarter of 2011 are listed below:

- Progress on the Heavy Lift Derrick (“HLD”) continues. The foundation and rails were completed in March.
- The pre-construction work on the switchyard is approximately 81% complete.
- Unit 2 excavation is nearing completion. Unit 2 excavation is a critical path activity and ORS closely monitors all critical path activities.
- Unit 3 excavation began this quarter. Installation of the first 20 feet of the retaining wall was completed. This is another critical path activity.
- Approximately 118,000 cubic yards of material were removed from the Unit 3 Nuclear Island. Unit 3 excavation remains ahead of schedule.
- The second concrete batch plant was completed and non-safety concrete is being produced.
- Excavation for the first Cooling Tower foundation is complete.
- Piles are being driven for the first Cooling Tower 2A.
- Preparation for the mobilization of Chicago Bridge & Iron’s (“CB&I”) construction activities continues. CB&I has completed the Containment Vessel Bottom Head (“CVBH”) support structure.
- Construction of the Module Assembly Building (“MAB”) is complete. Installation of wiring for electrical power in the MAB continues.

Photographs of 1st quarter construction activities are shown in Appendix B.

Transmission

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

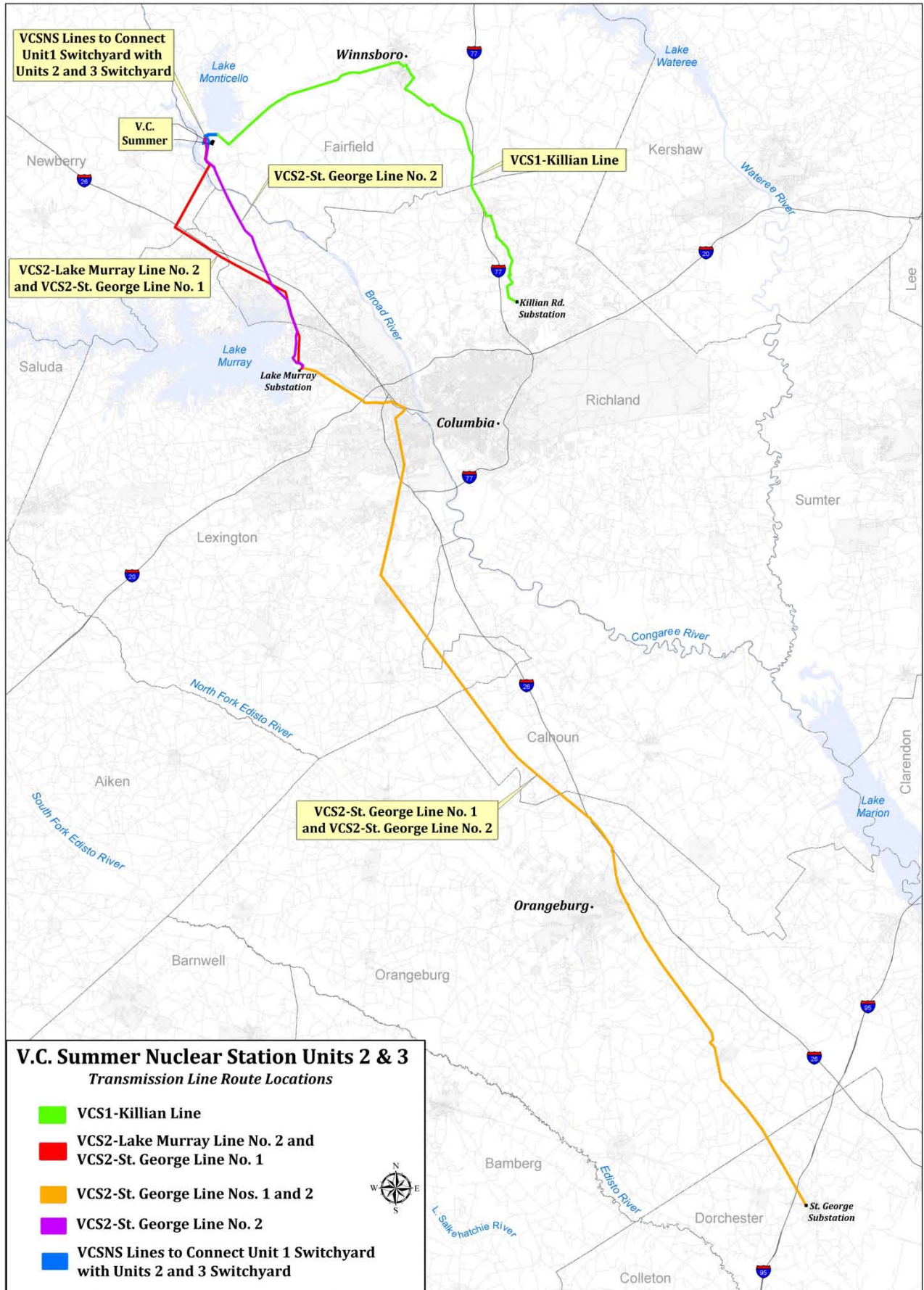
Phase 1 will construct two new 230 kV transmission lines in support of Unit 2: the VCS1–Killian Line and the VCS2–Lake Murray Line. The VCS1–Killian Line will connect the existing V.C. Summer Switchyard 1 to the Company’s existing Killian Road 230 kV Substation. The VCS2–Lake Murray Line will connect the newly constructed Switchyard (“Switchyard 2”) to the Company’s existing Lake Murray 230 kV Substation. Switchyard 2 will allow the connection of both the Unit 2 and Unit 3 generators to the grid. Also, two new 230 kV interconnections between Switchyard 1 and Switchyard 2 will be constructed.

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

The four new transmission lines will occupy existing transmission right of way corridors except for approximately six miles of the VCS1–Killian Line corridor.

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

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



Change Orders

During the 1st quarter of 2011, Change Order No. 8 was still under development. Change Order No. 11 was executed during the 1st quarter of 2011.

- **Change Order No. 8** – *Target to Firm/Fixed Shift*

On August 10, 2010, SCE&G entered into an agreement with WEC and Shaw. This agreement permits certain specific items of the EPC Contract that were originally included in the Target Price cost category to be moved to the Fixed Price or Firm Price cost categories.

Subsequent to the 1st quarter 2011, this Change Order was approved on April 29, 2011. This Change Order is discussed in more detail in the Section “Notable Activities Occurring After March 31, 2011.”

- **Change Order No. 11** – *COL Delay Study*

This Change Order was executed on February 28, 2011. WEC and Shaw will perform a study to evaluate the construction schedule impact of a probable delay in the receipt of the COL from the Nuclear Regulatory Commission (“NRC”).

The original study considered two scenarios. Scenario 1 would maintain the Unit 2 substantial completion date of April 1, 2016. Scenario 2 would delay the substantial completion date for Unit 2 from April 1, 2016 to October 1, 2016 (6 month delay). Under both scenarios the substantial completion date of Unit 3 would remain as scheduled for January 1, 2019.

SCE&G recently requested that the study consider a third scenario. Scenario 3 would delay the substantial completion date for Unit 2 from April 1, 2016 to October 1, 2016. The substantial completion of Unit 3 would then be accelerated from January 1, 2019 to February 1, 2018 (11 month acceleration). The Company believes that construction efficiencies can be created by narrowing the gap between the Units’ substantial completion dates. A draft report that includes the three scenarios discussed above has been provided to the Company by WEC and Shaw and is under review.

Table 3 below details the Change Orders and Amendments.

Table 3:

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

| | | |
|---------------------|--|----------------------|
| Amendment #1 | Includes Change Orders 1 and 2 | Executed on 8/2/2010 |
| Amendment #2 | Will incorporate Change Orders 3, 5-11 | Under Development |

³ Fixed Price with 0% escalation, but would be applied to Time and Materials Work Allowances by adding a new category for Simulator Instructor training and reducing Startup Support by commensurate amount.

⁴ This Change Order was approved in the 2nd Quarter of 2011.

Federal Licensing Activities

The NRC issued a Revised Review Schedule to SCE&G on October 29, 2010. The revised NRC schedule targets issuance of the final safety evaluation report in June 2011. Based on ORS's monitoring of licensing activities at the federal level, ORS finds a target date of July 2011 to be more appropriate.

On January 19, 2011, the Advisory Committee on Reactor Safeguards ("ACRS") issued a report on the safety aspects of the Aircraft Impact assessment of the AP1000. In their report to the Chairman of the NRC, the ACRS states, "analyses show that the containment remains intact following the impact of a large commercial aircraft. The reactor core remains cooled, and spent fuel pool integrity is maintained." A copy of this report is attached as Appendix C.

On February 17, 2011, the ACRS issued a report on the safety aspects of SCE&G's combined license application. In the ACRS's letter to NRC Chairman Jaczko, the ACRS concluded that there is reasonable assurance that the Units can be built and operated without undue risk to the health and safety of the public. A copy of this report is attached as Appendix D.

On February 24, 2011, the NRC issued a Notice of Proposed Rulemaking ("NOPR") to amend its regulations to certify an amendment to the AP1000 standard plant design. The NOPR was published in Vol. 76, No. 37 of the Federal Register. The purpose of the amendment is to replace the COL information items and design acceptance criteria with specific design information, address the effects of the impact of a large commercial aircraft, incorporate design improvements, and increase standardization of the design. Comments on this amendment were due by May 10, 2011.

On April 19, 2011 the NRC and U.S. Army Corps of Engineers ("USACE") issued the Final Environmental Impact Statement ("FEIS") for the Units stating that there are no environmental impacts that would prevent issuing the COL for construction and operation of the Units. The FEIS is described in more detail in the Section "Notable Activities Occurring After March 31, 2011."

Based on ORS's monitoring of the federal licensing activities, Table 4 below provides the most current dates for the review of SCE&G's COL.

Table 4:

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

Approved Budget Review

As reported in ORS's 3rd Quarter 2010 Review, the South Carolina Supreme Court ruled on August 9, 2010 that SCE&G may not recover "contingency costs" under the BLRA. S.C. Energy Users Comm. vs. South Carolina Pub. Serv. Comm'n, 388 S.C. 486, 697 S.E.2d 587 (2010). Previously, contingency costs had been approved as a capital cost category by the Commission in Order No. 2009-104(A), as modified by Order No. 2010-12. The Supreme Court's ruling removed all contingency costs totaling \$438.293 million from the budget for the Units, thereby reducing the overall approved budget. That is, the total approved SCE&G project commitment (in 2007 dollars) was reduced from \$4.534 billion to \$4.096 billion.

As a result of the August 9, 2010 Supreme Court Ruling, on November 15, 2010, the Company filed, concurrently with its 2010 3rd Quarter report, a request with the Commission in Docket No. 2010-376-E (the "Filing") to include approximately \$174 million in capital costs which would have been deducted from the Company's \$438.293 million (in 2007 dollars) budget for contingency costs. The Filing updates the gross construction cost – which includes escalation and Allowance for Funds Used During Construction ("AFUDC") – of the project to show a decrease from \$6.188 billion⁵ to \$5.787 billion, which is an overall reduction of approximately \$400 million in the total cost to construct the Units. A hearing was held on this matter on April 4, 2011. The Commission approved the Filing on May 16, 2011 in Order No. 2011-345.

The Company's Report, which was also issued on May 16, 2011, incorporates updated capital cost schedules per the Commission Order No. 2011-345. Accordingly, ORS's review of SCE&G's Report reflects the updated capital cost schedules. The Filing is discussed in further detail in the Section "Notable Activities Occurring after March 31, 2011."

ORS's budget review includes an analysis of the 1st quarter 2011 capital costs, project cash flow, escalation and AFUDC.

⁵ \$6.188 billion reflects the removal of the contingency dollars. The gross construction costs per Commission Order No. 2010-12 is \$6.875 billion.

Capital Costs

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

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

ORS monitors variances due to project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders). At the end of the 1st quarter of 2011, the total base project cost (in 2007 dollars) is \$4.270 billion. The Report shows the total base project cost has decreased by approximately \$103,000. This reduction reflects a decision by the Company that it would not seek recovery for \$103,000 in Community/Support Outreach costs that WEC and Shaw have included in costs to be charged under the EPC Contract. This was communicated in a letter to the Commission dated April 25, 2011 under Docket No. 2010-376-E. The letter is attached to this report as Appendix E.

Project Cash Flow

As shown in Appendix 2 Chart A of the Company's Report, the cumulative amount spent on the project as of December 31, 2010 is \$861.183 million. The cumulative forecasted amount to be spent on the project by December 31, 2011 is \$1.324 billion.

In its Report, the Company compares its current project cash flow to the cash flow schedule approved by the Commission in Order No. 2011-345. To produce a common basis for the comparison, SCE&G adjusts the approved cash flow schedule to reflect the current escalation rates. As of March 31, 2011, the comparison shows the yearly maximum annual variance above and below the approved cash flow schedule through the life of the project. The comparison also shows the cumulative project cash flow is forecasted to be approximately

\$18.964 million under budget at the end of 2011. At the end of the project in 2018, the cumulative project cash flow is forecasted to be approximately \$8.903 million over budget.

Table 5 shows the annual and cumulative project cash flows as compared to those approved in Order No. 2011-345.

Table 5:

| Project Cash Flow Comparison | | | |
|---------------------------------------|-------------|----------------------------|--------------------------------|
| <i>\$'s in Thousands ⁶</i> | | | |
| | | Annual Over/(Under) | Cumulative Over/(Under) |
| Actual ⁷ | 2007 | - | - |
| | 2008 | \$0 | \$0 |
| | 2009 | \$0 | \$0 |
| | 2010 | \$0 | \$0 |
| Projected | 2011 | (\$18,964) | (\$18,964) |
| | 2012 | \$15,082 | (\$3,882) |
| | 2013 | \$15,687 | \$11,805 |
| | 2014 | (\$10,296) | \$1,510 |
| | 2015 | \$3,064 | \$4,573 |
| | 2016 | \$4,382 | \$8,955 |
| | 2017 | (\$314) | \$8,641 |
| | 2018 | \$262 | \$8,903 |

In summary, the Report shows a decrease in the total base project cost of approximately \$103,000 (in 2007 dollars). It also shows an additional project cash flow requirement of approximately \$8.903 million necessary to complete the project in 2018. These forecasts reflect the updated capital cost schedules approved in Order No. 2011-345.

⁶ There will be slight variances in these numbers due to rounding.

⁷ The actual comparison amounts equate to zero in accordance with the updated capital cost schedules approved in Order No. 2011-345

AFUDC and Escalation

The forecasted AFUDC for the total project as of the end of the 1st quarter of 2011 is \$246.515 million and is based on a forecasted 5.87% AFUDC rate. This is a decrease of approximately \$9.169 million from the Company's 2010 4th Quarter Report.

As previously reported by ORS in its reviews of SCE&G's Quarterly Reports, the decline in the five-year average escalation rates reduce the projected project cash flow. Current worldwide economic conditions continue to reduce the projected escalation cost of the project. Primarily due to the decrease in escalation rates, the overall project is considered under budget. More specifically, as of March 31, 2011, the forecasted gross construction cost of the plant is \$5.624 billion as compared to the approved gross construction cost of \$5.787 billion, which reflects a decrease of approximately \$163.408 million.

Additional ORS Monitoring Activities

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

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

Notable Activities Occurring after March 31, 2011

The BLRA allows SCE&G 45 days from the end of the current quarter to file its Report. Items of importance that occurred subsequent to the closing of the 1st quarter 2011 are reported below.

Updates and Revisions to Capital Cost Schedules

On April 4, 2011 a hearing was held at the Commission on SCE&G's petition for updates and revisions to the capital costs schedule for the construction of the Units in Docket No. 2010-376-E. In support of the Filing, the Company presented the testimony of the President of SCANA Corporation and SCE&G, Chief Operating Officer and Executive Vice President for Generation and Transmission of SCE&G, and the Vice President for Nuclear Finance Administration of SCE&G. ORS presented testimony from its Electric Department and its nuclear industry consultant.

In the Filing, the Company requested to increase project capital costs by approximately \$174 million. This increase consisted of capital costs related to the construction of the Units that SCE&G identified and itemized to specific cost categories. A Settlement Agreement was reached between ORS and SCE&G and filed with the Commission on March 28, 2011. As part of the Settlement Agreement, ORS and SCE&G agreed that the budget revisions were due to SCE&G refining and updating its cost projections and to change orders negotiated by SCE&G with WEC/Shaw. Subsequent to the 1st quarter 2011, the Settlement Agreement was approved in Order No. 2011-345.

Change Order No. 8

Change Order No. 8 was signed and approved on April 29, 2011. As mentioned in previous ORS reviews of the Company's Quarterly Reports, SCE&G negotiated with Shaw to use a single, large Bigge Crane as opposed to two smaller cranes contemplated in the EPC Contract. Change Order No. 8 resolves this matter.

Change Order No. 8 also shifts approximately \$315 million in project costs associated with 11 scopes of work in the EPC Contract from the Target Price cost category to the Fixed Price or Firm Price cost categories. These shifts do not impact the total price in the EPC Contract. However, Change Order No. 8 includes a risk compensation payment of approximately \$10 million.

The shifts and the risk compensation payment associated with Change Order No. 8 were included in the Company's Filing as well as the Settlement Agreement approved in Order No. 2011-345.

Table 6 provides a description of the scopes of work that were shifted from Target to Fixed or Firm cost categories in Change Order No. 8:

Table 6:

| <h1>Change Order No. 8</h1> | |
|--|---|
| <h2>Shaw Work Scope Description</h2> | |
| | Site Design Engineering Group Labor, Labor Burdens and Overhead Recovery |
| | Living Allowances & Relocations for all Field Non-Manual Personnel <i>Excludes Business Travel Expenses. Excludes Start-Up Support</i> |
| | Construction Equipment <i>Includes maintenance labor, parts and supplies</i> |
| | Heavy Lift Derrick <i>Excludes Shaw Assembly Labor, Operators, Fuel, Foundation Labor and Subcontractors</i> |
| | Switchyard <i>Excludes Grading and Shaw Labor</i> |
| | Office equipment and supplies |
| | Cooling Towers |
| | Module Assembly Building <i>Target cost of slabs is the only item transferred</i> |
| | On-Site Assembly of Structural Modules CA01-05 and CA20 |
| | Safety Program |
| | Advertising and Public Relations |
| Total Cost Shifted from Target to Fixed/Firm: ≈ \$315 Million | |

Shaw Modular Solutions

In its review of SCE&G's 4th Quarter Report of 2010, ORS discussed deficiencies related to Shaw Modular Solutions' ("SMS") quality assurance programs which resulted in a manufacturing hold on all fabrication or rework activities. As of this review, SCE&G reports that WEC and Shaw have increased its quality assurance oversight and presence at the SMS facility in Lake Charles, LA. Also, SMS has implemented programs to improve its quality control practices and procedures.

As of the end of April 2011, the Company reports that SMS is making progress in implementing its action plans to improve its quality assurance programs. SMS has been released to start the fabrication of floor submodules. SCE&G anticipates receiving an updated module fabrication and delivery schedule that incorporates the impact of the manufacturing holds. The updated schedule is a key factor in determining any impact to the substantial completion dates. ORS will continue to monitor and report on SMS.

Annual Request for Revised Rates

Pursuant to the BLRA, SCE&G may request revised rates no earlier than one year after the request of a Base Load Review Order or any prior revised rates request. SCE&G filed its Annual Request for Revised Rates ("Request") with the Commission on May 27, 2011 in Docket No. 2011-207-E with the effective date of May 30, 2011, the anniversary date of SCE&G's previous request for revised rates. The Request sets forth an increase in retail rates totaling \$58,537,000.

SCE&G may file with the Commission annual requests for revised rates as long as the project is being constructed in accordance with the construction schedules and cumulative cost forecasts as approved by the Commission. Pursuant to the BLRA, until a nuclear plant enters commercial operation, the rate adjustments related to the plant include only recovery of the weighted average cost of capital applied to the outstanding balance of CWIP and shall not include depreciation or other items constituting a return of capital to the utility.

Table 7 below shows the requested increases and approved increases from all prior Revised Rate Filings with the Commission.

Table 7:

| Requested vs. Approved Increases <i>SCE&G Revised Rate Filings</i> | | | | | |
|--|------------------|---------------------------|------------------------|--------------------------|------------------------|
| Docket No. | Order No. | Requested Increase | ORS Examination | Approved Increase | Retail Increase |
| 2008-196-E | 2009-104(A) | \$8,986,000 | (\$1,183,509) | \$7,802,491 | 0.43% |
| 2009-211-E | 2009-696 | \$22,533,000 | \$0 | \$22,533,000 | 1.10% |
| 2010-157-E | 2010-625 | \$54,561,000 | (\$7,260,000) | \$47,301,000 | 2.31% |
| 2011-207-E | TBD ⁸ | \$58,537,000 | TBD | TBD | TBD |

NRC and WEC Correspondence

On May 20, 2011, NRC Chairman Jaczko issued a statement to confirm that the NRC’s review of WEC’s amended AP1000 reactor design resulted in the uncovering of additional technical issues. Chairman Jaczko states, “WEC must resolve the issues before we can consider finalizing NRC certification of the design.” Technical analysis has led to more questions regarding the AP1000’s shield building. Chairman Jaczko’s statement is attached as Appendix F.

On May 26, 2011, WEC issued a press release to respond to Chairman Jaczko’s statement. WEC indicated that recent NRC statements regarding the discovery of new issues relating to the approval of the design amendments for the AP1000 units are being “misinterpreted and sensationalized.” WEC said that Chairman Jaczko’s statements “do not reflect Westinghouse’s transparent and cooperative approach to handling of the discovery and severity of the few remaining issues that need to be resolved before receiving approval from the NRC.” This WEC news article is attached to the report as Appendix F.

On May 31, 2011, Chairman Jaczko issued another statement emphasizing the NRC’s commitment to safety. Chairman Jaczko specifically mentions its staff’s actions to resolve a significant design concern the NRC identified with the Westinghouse AP1000 reactor design. Chairman Jaczko’s statement is attached as Appendix F.

⁸ The Request in Docket No. 2011-207-E was filed in May 2011 and an Order has not been issued.

Environmental Review

In April 2011, the NRC and the USACE completed the FEIS for the Units, which concludes the review of environmental impacts of the project. As stated in the FEIS, the NRC concludes that there are no environmental impacts that would preclude issuing the COL. The Company states that the April 2011 approval of the FEIS supports the issuance of a COL for the Units in late 2011 or early 2012. On April 19, 2011, the NRC issued a press release regarding the FEIS and this is attached as Appendix G.

Design Control Document Revision 19

The Company's Report states that WEC was expected to provide the NRC with Design Control Document ("DCD") Revision 19 in the 1st quarter of 2011. However, due to unresolved issues, the NRC Staff had not completed its review by the 1st quarter of 2011. As a result, DCD Revision 19 was submitted to the NRC on June 13, 2011. WEC's letter to the NRC confirming the submission of this revision is attached as Appendix H. The delay of the DCD Revision 19 submittal is expected to impact the final rulemaking schedule, but to what extent is yet to be determined. SCE&G stated it anticipates NRC approval of the amended DCD in the second half of 2011. This delay in the DCD approval supports issuance of a COL for the Units in late 2011 or early 2012. ORS continues to closely monitor the NRC Schedule for DCD approval.

SCE&G's 2011 2nd Quarter Report is due 45 days after June 30, 2011. ORS expects to continue publishing a review evaluating SCE&G's quarterly reports.

Appendix A

Detailed Milestone Schedule as of March 31, 2011

Key:

| | | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 1 | Approve Engineering, Procurement and Construction Agreement | 5/23/2008 | | No | No | 5/23/2008 | |
| 2 | Issue Purchase Orders ("P.O.") to Nuclear Component Fabricators for Units 2 and 3 Containment Vessels | 12/3/2008 | | No | No | 12/3/2008 | |
| 3 | Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator - First Payment - Unit 2 | 8/31/2008 | | No | No | 8/18/2008 | |
| 4 | Contractor Issue P.O. to Accumulator Tank Fabricator - Unit 2 | 7/31/2008 | | No | No | 7/31/2008 | |
| 5 | Contractor Issue P.O. to Core Makeup Tank Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |
| 6 | Contractor Issue P.O. to Squib Valve Fabricator- Units 2 & 3 | 3/31/2009 | | No | No | 3/31/2009 | |
| 7 | Contractor Issue P.O. to Steam Generator Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 8 | Contractor Issue Long Lead Material P.O. to Reactor Coolant Pump Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 9 | Contractor Issue P.O. to Pressurizer Fabricator - Units 2 & 3 | 8/31/2008 | | No | No | 8/18/2008 | |
| 10 | Contractor Issue P.O. to Reactor Coolant Loop Pipe Fabricator - First Payment- Units 2 & 3 | 6/30/2008 | | No | No | 6/20/2008 | |

Key:

| | | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 11 | Reactor Vessel Internals – Issue Long Lead Material P.O. to Fabricator Units 2 & 3 | 11/21/2008 | | No | No | 11/21/2008 | |
| 12 | Contractor Issue Long Lead Material - P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 5/29/2008 | 1 Month Early |
| 13 | Contractor Issue P.O. to Integrated Head Package Fabricator - Units 2 & 3 | 7/31/2009 | | No | No | 7/31/2009 | |
| 14 | Control Rod Drive Mechanism – Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 - First Payment | 6/21/2008 | | No | No | 6/21/2008 | |
| 15 | Issue P.O.s to Nuclear Component Fabricators for Nuclear Island Structural CA20 Modules | 7/31/2009 | | No | No | 8/28/2009 | |
| 16 | Start Site Specific and Balance of Plant Detailed Design | 9/11/2007 | | No | No | 9/11/2007 | |
| 17 | Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 18 | Stream Generator - Issue Final P.O. to Fabricator for Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 19 | Reactor Vessel Internals - Contractor Issue P.O. for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3 | 1/31/2010 | | No | No | 1/29/2010 | |
| 20 | Contractor Issue Final P.O. to Reactor Vessel Fabricator - Units 2 & 3 | 9/30/2008 | | No | No | 9/30/2008 | |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 21 | Variable Frequency Drive Fabricator Issue Transformer P.O. - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 22 | Start Clearing, Grubbing and Grading | 1/26/2009 | | No | No | 1/26/2009 | |
| 23 | Core Makeup Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 24 | Accumulator Tank Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 25 | Pressurizer Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 26 | Reactor Coolant Loop Pipe - Contractor Issue P.O. to Fabricator - Second Payment - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |
| 27 | Integrated Head Package - Issue P.O. to Fabricator - Units 2 & 3 - Second Payment | 7/31/2009 | | No | No | 7/31/2009 | |
| 28 | Control Rod Drive Mechanism - Contractor Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 29 | Contractor Issue P.O. to Passive Residual Heat Removal Heat Exchanger Fabricator - Second Payment - Units 2 & 3 | 10/31/2008 | | No | No | 10/31/2008 | |
| 30 | Start Parr Road Intersection Work | 2/13/2009 | | No | No | 2/13/2009 | |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 31 | Reactor Coolant Pump - Issue Final P.O. to Fabricator - Units 2 & 3 | 6/30/2008 | | No | No | 6/30/2008 | |
| 32 | Integrated Heat Packages Fabricator Issue Long Lead Material P.O. - Units 2 & 3 | 10/31/2009 | | No | No | 10/1/2009 | 1 Month Early |
| 33 | Design Finalization Payment 3 | 1/31/2009 | | No | No | 1/30/2009 | |
| 34 | Start Site Development | 6/23/2008 | | No | No | 6/23/2008 | |
| 35 | Contractor Issue P.O. to Turbine Generator Fabricator - Units 2 & 3 | 2/28/2009 | | No | No | 2/19/2009 | |
| 36 | Contractor Issue P.O. to Main Transformers Fabricator - Units 2 & 3 | 9/30/2009 | | No | No | 9/25/2009 | |
| 37 | Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3 | 11/30/2010 | | No | No | 12/30/2010 | Delayed 1 Month |
| 38 | Design Finalization Payment 4 | 4/30/2009 | | No | No | 4/30/2009 | |
| 39 | Turbine Generator Fabricator Issue P.O. for Condenser Material - Unit 2 | 8/31/2009 | | No | No | 8/28/2009 | |
| 40 | Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3 | 4/30/2009 | | No | No | 4/30/2009 | |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 41 | Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3 | 5/31/2010 | | No | No | 5/27/2010 | |
| 42 | Design Finalization Payment 5 | 7/31/2009 | | No | No | 7/31/2009 | |
| 43 | Start Erection of Construction Buildings Including Craft Facilities for Personnel, Tools, Equipment; First Aid Facilities; Field Offices for Site Management and Support Personnel; Temporary Warehouses; and Construction Hiring Office | 10/9/2009 | | No | No | 12/18/2009 | Delayed 2 Months |
| 44 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2 | 7/31/2009 | | No | No | 8/28/2009 | |
| 45 | Design Finalization Payment 6 | 10/31/2009 | | No | No | 10/7/2009 | |
| 46 | Instrumentation and Control Simulator - Contractor Issue P.O. to Subcontractor for Radiation Monitor System - Units 2 & 3 | 12/31/2009 | | No | No | 12/17/2009 | |
| 47 | Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 6/30/2011 | No | No | | |
| 48 | Turbine Generator Fabricator Issue P.O. for Moisture Separator Reheater/Feedwater Heater Material Unit 2 | 4/30/2010 | | No | No | 4/30/2010 | |
| 49 | Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2 | 4/30/2010 | | No | No | 2/18/2010 | 2 Months Early |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 50 | Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2 | 10/31/2011 | 2/28/2012 | No | No | | Delayed 4 Months |
| 51 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2 | 6/30/2009 | | No | No | 6/30/2009 | |
| 52 | Contractor Notified That Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2 | 11/30/2010 | | No | No | 12/23/2010 | |
| 53 | Start Excavation and Foundation Work for the Standard Plant for Unit 2 | 3/15/2010 | | No | No | 3/15/2010 | |
| 54 | Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2 | 2/28/2010 | | No | No | 4/30/2010 | Delayed 2 Months |
| 55 | Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2 | 2/28/2010 | | No | No | 12/30/2010 | Delayed 10 Months |
| 56 | Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2 | 5/31/2010 | | No | No | 5/17/2010 | |
| 57 | Complete Preparations for Receiving the First Module On Site for Unit 2 | 8/18/2010 | | No | No | 1/22/2010 | 7 Months Early |
| 58 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2 | 4/30/2010 | | No | No | 4/21/2010 | |
| 59 | Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2 | 11/30/2010 | | No | No | 11/16/2010 | |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 60 | Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2 | 12/31/2010 | 5/31/2011 | No | No | | Delayed 5 Months |
| 61 | Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2 | 5/31/2011 | 12/31/2011 | No | No | | Delayed 7 Months |
| 62 | Polar Crane Fabricator Issue P.O. for Main Hoist Drum and Wire Rope - Units 2 & 3 | 2/28/2011 | | No | No | 2/1/2011 | Completed |
| 63 | Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3 | 6/30/2011 | 6/30/2011 | No | No | | |
| 64 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2 | 10/31/2011 | 1/31/2012 | No | No | | Delayed 3 Months |
| 65 | Start Placement of Mud Mat for Unit 2 | 7/14/2011 | 10/28/2011 | No | No | | Delayed 3 Months |
| 66 | Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2 | 1/31/2011 | | No | No | 9/28/2010 | Completed - 4 Months Early |
| 67 | Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2 | 10/31/2010 | 5/31/2011 | No | No | | Delayed 7 Months |
| 68 | Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3 | 2/28/2012 | 2/28/2012 | No | No | | |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 69 | Begin Unit 2 First Nuclear Concrete Placement | 10/3/2011 | 10/20/2011 | No | No | | |
| 70 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2 | 9/30/2011 | 11/30/2011 | No | No | | Delayed 2 Months |
| 71 | Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2 | 6/30/2011 | 6/30/2011 | No | No | | |
| 72 | Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2 | 5/31/2011 | 9/30/2011 | No | No | | Delayed 4 Months |
| 73 | Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2 | 12/31/2012 | 12/31/2012 | No | No | | |
| 74 | Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2 | 12/31/2011 | 4/30/2012 | No | No | | Delayed 4 Months |
| 75 | Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2 | 10/31/2010 | 6/30/2011 | No | No | | Delayed 8 Months |
| 76 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2 | 6/30/2011 | 10/31/2011 | No | No | | Delayed 4 Months |
| 77 | Design Finalization Payment 14 | 10/31/2011 | 10/31/2011 | No | No | | |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 78 | Set Module CA04 For Unit 2 | 1/27/2012 | 5/17/2012 | No | No | | Delayed 3 Months |
| 79 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2 | 6/30/2010 | 4/30/2011 | No | No | | Delayed 10 Months |
| 80 | Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2 | 1/31/2011 | 1/31/2012 | No | No | | Delayed 12 Months |
| 81 | Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2 | 2/28/2012 | 7/31/2012 | No | No | | Delayed 5 Months |
| 82 | Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3 | 8/31/2013 | 7/31/2013 | No | No | | 1 Month Early |
| 83 | Set Containment Vessel Ring #1 for Unit 2 | 4/3/2012 | 10/12/2012 | No | No | | Delayed 6 Months |
| 84 | Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2 | 3/31/2012 | 12/31/2011 | No | No | | 3 Months Early |
| 85 | Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3 | 8/31/2013 | 1/31/2013 | No | No | | 7 Months Early |
| 86 | Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3 | 9/30/2012 | 5/31/2012 | No | No | | 4 Months Early |

Key:

| | | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 87 | Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3 | 1/31/2013 | 10/31/2011 | No | No | | 15 Months Early |
| 88 | Set Nuclear Island Structural Module CA03 for Unit 2 | 8/30/2012 | 2/28/2013 | No | No | | Delayed 6 Months |
| 89 | Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2 | 5/31/2012 | 5/31/2012 | No | No | | |
| 90 | Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 12/31/2012 | 11/30/2012 | No | No | | 1 Month Early |
| 91 | Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2 | 7/31/2012 | 6/30/2012 | No | No | | 1 Month Early |
| 92 | Start Containment Large Bore Pipe Supports for Unit 2 | 4/9/2012 | 8/31/2012 | No | No | | Delayed 4 Months |
| 93 | Integrated Head Package - Shipment of Equipment to Site - Unit 2 | 10/31/2012 | 2/28/2013 | No | No | | Delayed 4 Months |
| 94 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2 | 11/30/2012 | 11/30/2012 | No | No | | |
| 95 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3 | 5/31/2013 | 4/30/2013 | No | No | | 1 Month Early |

Key:

| | | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 96 | Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2 | 5/31/2012 | 7/31/2012 | No | No | | Delayed 2 Months |
| 97 | Start Concrete Fill of Nuclear Island Structural Modules CA01 and CA02 for Unit 2 | 2/26/2013 | 8/30/2013 | No | No | | Delayed 6 Months |
| 98 | Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2 | 4/30/2012 | 4/30/2012 | No | No | | |
| 99 | Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2 | 2/28/2013 | 9/30/2012 | No | No | | 5 Months Early |
| 100 | Deliver Reactor Vessel Internals to Port of Export - Unit 2 | 7/31/2013 | 11/30/2013 | No | No | | Delayed 4 Months |
| 101 | Set Unit 2 Containment Vessel #3 | 4/17/2013 | 10/17/2013 | No | No | | Delayed 6 Months |
| 102 | Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2 | 3/31/2013 | 1/31/2013 | No | No | | 2 Months Early |
| 103 | Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2 | 4/30/2013 | 3/31/2013 | No | No | | 1 Month Early |
| 104 | Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3 | 2/28/2014 | 9/30/2013 | No | No | | 5 Months Early |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 105 | Polar Crane - Shipment of Equipment to Site - Unit 2 | 5/31/2013 | 11/30/2013 | No | No | | Delayed 6 Months |
| 106 | Receive Unit 2 Reactor Vessel On Site From Fabricator | 5/20/2013 | 11/21/2013 | No | No | | Delayed 6 Months |
| 107 | Set Unit 2 Reactor Vessel | 6/18/2013 | 12/19/2013 | No | No | | Delayed 6 Months |
| 108 | Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3 | 12/31/2013 | 11/30/2013 | No | No | | 1 Month Early |
| 109 | Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3 | 8/31/2014 | 4/30/2014 | No | No | | 4 Months Early |
| 110 | Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2 | 9/30/2013 | 8/31/2013 | No | No | | 1 Month Early |
| 111 | Place First Nuclear Concrete for Unit 3 | 8/1/2013 | 8/2/2013 | No | No | | |
| 112 | Set Unit 2 Steam Generator | 9/9/2013 | 3/24/2014 | No | No | | Delayed 6 Months |
| 113 | Main Transformers Ready to Ship - Unit 2 | 9/30/2013 | 6/30/2013 | No | No | | 3 Months Early |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 114 | Complete Unit 3 Steam Generator Hydrotest at Fabricator | 2/28/2014 | 3/31/2014 | No | No | | Delayed 1 Month |
| 115 | Set Unit 2 Containment Vessel Bottom Head on Basemat Legs | 11/21/2011 | 3/29/2012 | No | No | | Delayed 4 Months |
| 116 | Set Unit 2 Pressurizer Vessel | 1/24/2014 | 8/5/2014 | No | No | | Delayed 6 Months |
| 117 | Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3 | 2/28/2015 | 3/31/2015 | No | No | | Delayed 1 Month |
| 118 | Deliver Reactor Vessel Internals to Port of Export - Unit 3 | 6/30/2015 | 9/30/2015 | No | No | | Delayed 3 Months |
| 119 | Main Transformers Fabricator Issue P.O. for Material - Unit 3 | 4/30/2014 | 4/30/2014 | No | No | | |
| 120 | Complete Welding of Unit 2 Passive Residual Heat Removal System Piping | 3/19/2014 | 9/30/2014 | No | No | | Delayed 6 Months |
| 121 | Steam Generator - Contractor Acceptance of Equipment At Port of Entry - Unit 3 | 4/30/2015 | 2/28/2015 | No | No | | 2 Months Early |
| 122 | Refueling Machine - Shipment of Equipment to Site - Unit 3 | 5/31/2014 | 5/31/2014 | No | No | | |
| 123 | Set Unit 2 Polar Crane | 4/3/2014 | 9/24/2014 | No | No | | Delayed 5 Months |

Key:

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|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|---|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 124 | Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3 | 6/30/2015 | 8/31/2015 | No | No | | Delayed 2 Months |
| 125 | Main Transformers Ready to Ship - Unit 3 | 9/30/2014 | 1/31/2015 | No | No | | Delayed 4 Months |
| 126 | Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3 | 12/31/2014 | 6/30/2014 | No | No | | 6 Months Early |
| 127 | Start Electrical Cable Pulling in Unit 2 Auxiliary Building | 12/26/2014 | 7/13/2015 | No | No | | Delayed 6 Months |
| 128 | Complete Unit 2 Reactor Coolant System Cold Hydro | 8/3/2015 | 9/1/2015 | No | No | | |
| 129 | Activate Class 1E DC Power in Unit 2 Auxiliary Building | 3/5/2015 | 12/5/2014 | No | No | | 3 Months Early |
| 130 | Complete Unit 2 Hot Functional Test | 9/21/2015 | 12/15/2015 | No | No | | Delayed 2 Months |
| 131 | Install Unit 3 Ring 3 for Containment Vessel | 7/30/2015 | 4/15/2015 | No | No | | 3 Months Early |
| 132 | Load Unit 2 Nuclear Fuel | 10/28/2015 | 3/8/2016 | No | No | | Delayed 4 Months |
| 133 | Unit 2 Substantial Completion | 4/1/2016 | 4/1/2016 | No | No | | |

Key:

| | | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|--|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 134 | Set Unit 3 Reactor Vessel | 10/1/2015 | 6/16/2015 | No | No | | 3 Months Early |
| 135 | Set Unit 3 Steam Generator #2 | 12/22/2015 | 10/16/2015 | No | No | | 2 Months Early |
| 136 | Set Unit 3 Pressurizer Vessel | 5/16/2016 | 3/9/2016 | No | No | | 2 Months Early |
| 137 | Complete Welding of Unit 3 Passive Residual Heat Removal System Piping | 6/20/2016 | 5/3/2016 | No | No | | 1 Month Early |
| 138 | Set Unit 3 Polar Crane | 7/18/2016 | 4/27/2016 | No | No | | 2 Months Early |
| 139 | Start Unit 3 Shield Building Roof Slab Rebar Placement | 1/16/2017 | 10/13/2016 | No | No | | 3 Months Early |
| 140 | Start Unit 3 Auxiliary Building Electrical Cable Pulling | 4/6/2017 | 2/8/2017 | No | No | | 1 Month Early |
| 141 | Activate Unit 3 Auxiliary Building Class 1E DC Power | 6/9/2017 | 7/1/2016 | No | No | | 11 Months Early |
| 142 | Complete Unit 3 Reactor Coolant System Cold Hydro | 1/1/2018 | 11/17/2017 | No | No | | 1 Month Early |
| 143 | Complete Unit 3 Hot Functional Test | 2/15/2018 | 3/8/2018 | No | No | | |

Key:

| | | | | |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|
| Milestones Not Completed | Completed Prior to Q1-11 | Current Quarter | Scheduled to Be Completed Q2-11 | ORS Caution Milestone |
|--------------------------|--------------------------|-----------------|---------------------------------|-----------------------|

| Activity Number | Milestone | Completion Date Approved in Order 2010-12 | Scheduled Completion Date as of Q1-11 | Outside 18 - 24 Month Contingency? | Impact to Substantial Completion Date? | Actual Completion Date | Deviation from Order 2010-12 |
|-----------------|-----------------------------------|---|---------------------------------------|------------------------------------|--|------------------------|------------------------------|
| 144 | Complete Unit 3 Nuclear Fuel Load | 7/31/2018 | 7/12/2018 | No | No | | |
| 145 | Begin Unit 3 Full Power Operation | 10/31/2018 | 11/15/2018 | No | No | | |
| 146 | Unit 3 Substantial Completion | 1/1/2019 | 1/1/2019 | No | No | | |

Notes:

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|--|
| White highlighting represents Future or Historical Milestones that have not been completed. |
| Grey highlighting represents Future or Historical Milestones that were completed prior to the 1st Quarter 2011. |
| Yellow highlighting represents those Milestones that are scheduled to be or have been completed during the 1st Quarter 2011. This is based on the schedule approved by the Commission in Order No. 2010-12 |
| Green highlighting represents Future Milestones that are scheduled to be completed in the 2nd Quarter of 2011. This is based on the schedule approved by the Commission in Order No. 2010-12 |
| Red highlighting represents "Caution Milestones." Caution Milestones are those that are delayed by 10 months or greater. |

Appendix B

Construction Site Pictures

V.C. Summer Units 2 & 3

January 2011



VCS #2
excavation

Crane
Location

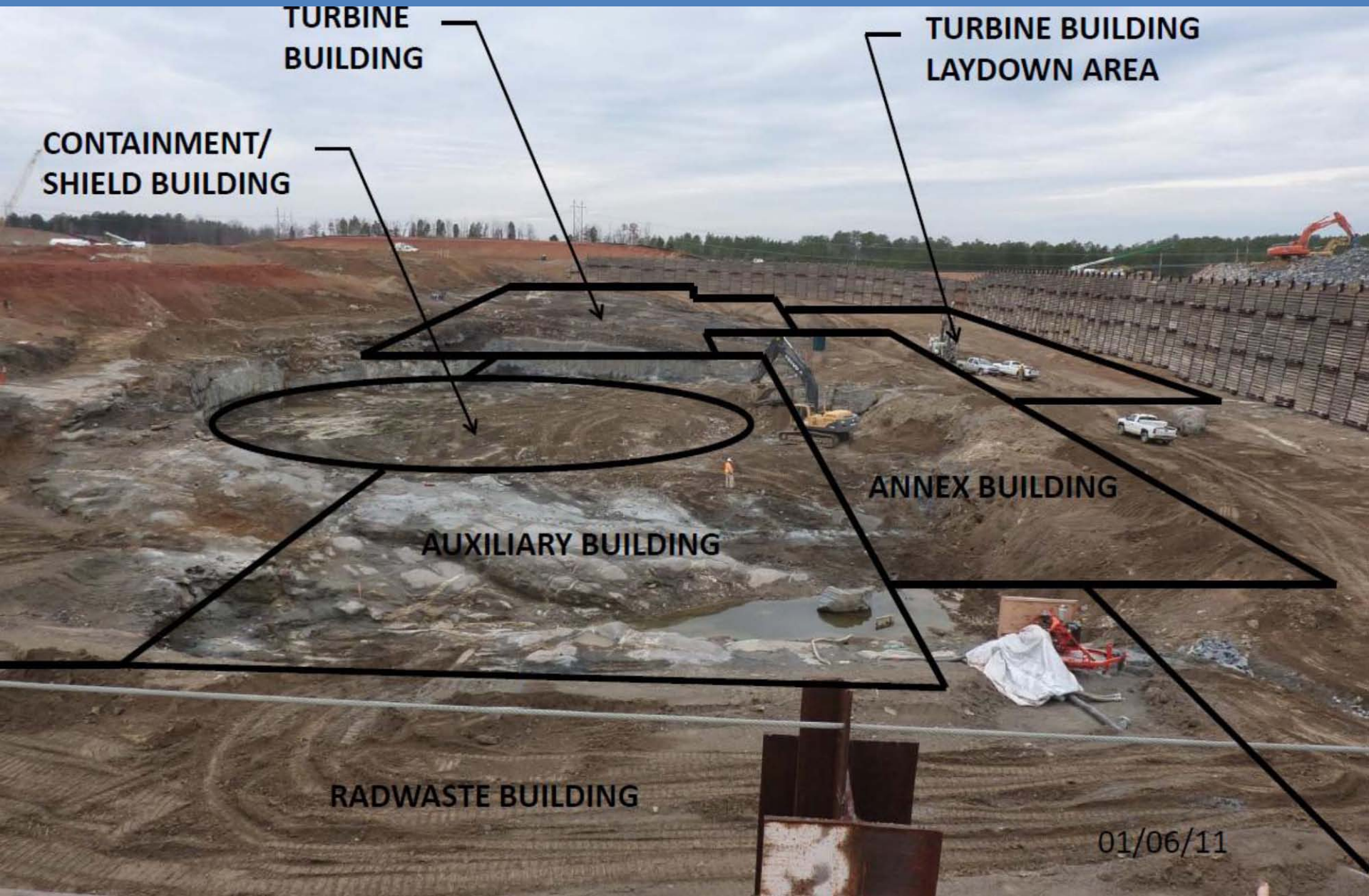
Module Assembly
Bldg

Pads for
Containment
Vessel Ring Fab

VCS #3

Craft change facility

Unit 2 Power Block



TURBINE BUILDING

TURBINE BUILDING LAYDOWN AREA

CONTAINMENT/SHIELD BUILDING

ANNEX BUILDING

AUXILIARY BUILDING

RADWASTE BUILDING

01/06/11

Unit 3 Excavation



01/25/11

Concrete Batch Plants



BACK-UP

PRIMARY

01/25/11

Containment Vessel Bottom Head Plates and Support Structure



03/02/11

Water Tanks



03/02/11

Bigge Crane Components



Appendix C

ACRS Report on Aircraft Impact Assessment



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

January 19, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**SUBJECT: REPORT ON THE SAFETY ASPECTS OF THE AIRCRAFT IMPACT
ASSESSMENT FOR THE WESTINGHOUSE ELECTRIC COMPANY AP1000
DESIGN CERTIFICATION AMENDMENT APPLICATION**

Dear Chairman Jaczko:

During the 579th meeting of the Advisory Committee on Reactor Safeguards, January 13-15, 2011, we reviewed the staff's Safety Evaluation Report (SER) on the Aircraft Impact Assessment (AIA), which is part of the Westinghouse Electric Company (WEC or the Applicant) AP1000 Design Certification Amendment (DCA) application. Our AP1000 subcommittee held meetings on November 2-3, November 17-19, and December 15-16, 2010, and reviewed the staff's SER and AIA inspection report. During these meetings, we had the benefit of discussions with representatives of the NRC staff and WEC. The AIA was made available to us by the applicant for review prior to our AP1000 subcommittee meeting of November 2-3, 2010. We also had the benefit of the documents referenced. This letter fulfills the requirement of 10 CFR 52.53 that the ACRS report on those portions of the application which concern safety.

CONCLUSION AND RECOMMENDATION

The WEC AIA for the design described in the AP1000 DCA application, as modified to resolve NRC inspection findings, complies with the requirements of 10 CFR 50.150. Analyses show that the containment remains intact following the impact of a large commercial aircraft. The reactor core remains cooled, and spent fuel pool integrity is maintained.

The staff should evaluate information and analyses presented to the ACRS, but not subjected to staff review or inspection, to determine if there is a need for further revision of the design control document (DCD), or a need for further inspections.

BACKGROUND

The results of the AP1000 AIA are a part of the AP1000 DCA application. The AP1000 design was previously certified and the existing AP1000 certification rule references DCD Revision 15. DCD Revision 18 was submitted by WEC in a letter dated December 1, 2010, and it incorporates changes in Revision 16, submitted on May 26, 2007; in Revision 17, submitted on September 22, 2008; as well as those changes made subsequent to the submittal of Revision 17, which are identified in Chapter 23 of the Advanced Final Safety Evaluation Report. We held a series of meetings with the NRC staff and the applicant on the AP1000 DCA application. We wrote a letter, dated December 13, 2010, following our review of the amendment. Our assessment of the AP1000 AIA was not included in the letter.

As required by 10 CFR 50.150, applicants for new nuclear power plants must perform an assessment of the effects of the impact of a large, commercial aircraft. Using realistic analyses, applicants must identify and incorporate into the facility those design features and functional capabilities needed to show that, with reduced use of operator action; (1) the reactor core remains cooled or the containment remains intact, and (2) spent fuel cooling or spent fuel pool integrity is maintained (referred to as the acceptance criteria). Applicants are required to submit a description of the design features and functional capabilities relied upon in the AIA and a description of how these features and capabilities ensure that the acceptance criteria are met. Since the impact of a large, commercial aircraft is a beyond-design-basis event, applicants may use non-safety-related features or capabilities to satisfy the requirements of 10 CFR 50.150.

From September 27, 2010, through October 1, 2010, the staff conducted an inspection of the WEC AP1000 AIA. Based on the results of this inspection, the staff determined that NRC requirements had not been fully met. The inspection revealed that WEC did not use realistic analyses for certain aspects of its AIA and did not fully identify and incorporate into the DCD those design features and functional capabilities credited. WEC responded to the inspection report and proposed corrective actions in its letter to the NRC dated November 12, 2010. The staff issued a letter, dated November 23, 2010, stating that the proposed corrective actions were satisfactory. The staff may review the implementation of the corrective actions during a future inspection to determine that full compliance has been achieved and maintained.

DISCUSSION

The AIA performed by the applicant uses the industry guidance in NEI 07-13, Revision 7, endorsed in Draft Regulatory Guide DG-1176. The results of the AIA show that the modified AP1000 design, described in the application, meets the acceptance criteria of the AIA rule by maintaining containment integrity and spent fuel pool integrity.

-3-

The key AP1000 design features identified by WEC to satisfy the requirements of 10 CFR 50.150 include: presenting a small target with a reduced set of safety-related structures, systems, and components (SSCs); a redesigned shield building which protects the steel containment vessel from penetration due to impact¹; simplified, passive safety equipment for core cooling; no active equipment required for spent fuel pool cooling; and redundancy and defense-in-depth in equipment design. In accordance with 10 CFR 50.150, WEC provided an assessment in the respective technical areas of structures, reactor systems, fire, and shock.

For the structural assessment, WEC used the impulse curve supplied by the NRC and the finite element analysis code LS-DYNA. All of the aircraft strikes analyzed using this code was on the shield building. The redesigned shield building, using a modular, steel concrete composite (SC) structure, reduces passive heat removal air flow. The effects of air flow reduction on containment integrity during accidents were analyzed and shown to be acceptable. Based on the results of the assessment, WEC concluded, and the staff agreed, that both the containment and spent fuel pool remain intact and that core and spent fuel cooling are maintained.

During our November 2-3, 2010 AP1000 subcommittee meeting, we questioned whether the worst-case locations for aircraft impact had been considered. WEC addressed this issue during our November 17-19, 2010, AP1000 subcommittee meeting.

The AP1000 shield building includes a 32 ft. diameter opening in the conical roof which is an essential feature of the passive containment cooling design. This opening is surrounded by the Passive Containment Cooling System water storage tank. During our November 2-3, 2010, subcommittee meeting, issues arose concerning the potential for significant aircraft impact debris to pass through the opening and impact the steel containment vessel. WEC conducted appropriate analyses, which we reviewed during our November 17-19, 2010, subcommittee meeting. Using realistic assumptions for the impact locations of concern, these analyses demonstrated that no significant debris would impact the steel Containment Vessel (CV). In addition, WEC performed a more conservative analysis in which a large mass consisting of debris and the shield plate, was assumed to fall on the steel CV. This impact resulted in only a relatively small amount of plastic deformation and no penetration of the CV.

Our December 13, 2010, letter concerning the AP1000 DCA application describes the SC design, including the addition of tie bars between opposite faceplates of the SC modules. The spacing of these tie bars is smaller in areas of higher, out-of-plane, design basis shear demands - i.e., near discontinuities and connections - than it is in the majority of the shield building wall structure where these demands are lower. Aircraft impacts, unlike design basis events, can impart high out-of-plane shear demands in regions of the shield building wall with greater tie bar spacing. As discussed in our letter of December 13, 2010, these areas can fail in

¹ The shield building redesign is discussed in our letter dated December, 13, 2010.

-4-

a non-ductile manner under such loads. In order to assure acceptable realism in the analyses, it must be demonstrated that the finite element models used in the AIA adequately describe this non-ductile behavior under high out-of-plane shear loads. WEC provided comparisons of the predictions of the LS-DYNA model with an experiment on a beam representing a SC structure with greater tie bar spacing under high out-of-plane shear loads. The load-deformation behavior predicted by the model agreed well with the results of the experiment; the comparison adequately supports the use of the model for these analyses.

In addition to the possibility of global structural failure, there is also a potential for local failure due to penetration by hard objects such as an engine or landing gear. The AIA analysis included comparisons of the predictions of the LS-DYNA model with penetration tests conducted in Japan on SC structures. The predictions show adequate agreement with the tests. Although the geometry of the specimens in these tests differs from that of the shield building, the comparisons support the use of the model to predict local failures associated with aircraft impact.

WEC demonstrated that AIA requirements with respect to core and spent fuel cooling are met. This is because the systems required for design basis core cooling are located inside containment, which is protected by the redesigned shield building, and there are no active systems required for cooling of spent fuel. In addition, WEC demonstrated that at least one backup water source is always available for cooling.

Similarly, for the fire aspect of AIA, based on the limited systems required for core cooling in the AP1000, and their location within the intact containment, WEC demonstrated that the requirements of 10 CFR 50.150 are met.

Finally, with regard to the effects of shock associated with aircraft impact, WEC demonstrated that these shock loadings are less than those resulting from a design basis seismic event.

The AP1000 AIA was reviewed in parallel with the development of DCD Revision 18, which was submitted on December 1, 2010. Also, the staff conducted an inspection of the AIA and resolved their findings with WEC, as described in a letter dated November 23, 2010. In parallel with these activities, we conducted subcommittee meetings to review the AIA during which WEC responded with information and analyses, some of which may not be reflected in the DCD, as revised, or within the scope of the staff's inspection. In view of these parallel activities, the staff should evaluate information and analyses presented to the ACRS, but not subjected to staff review or inspection, to determine if there is a need for further revision of the DCD, or a need for further inspections.

-5-

The AIA for the design described in the AP1000 DCA application, as modified to resolve the staff's inspection findings, complies with the requirements of 10 CFR 50.150. Following the impact of a large commercial aircraft, the containment remains intact, the reactor core remains cooled, and spent fuel pool integrity is maintained.

Sincerely,

/RA/

Said Abdel-Khalik
Chairman

REFERENCES

1. U.S. Nuclear Regulatory Commission, "Advanced Copy of the Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design" various dates 2010 (ML103260072)
2. Letter to U.S. Nuclear Regulatory Commission, "Westinghouse Application to Amend the AP1000 Design Certification," APP-GW-GL-700, Revision 16, May 26, 2007 (ML071580757)
3. Letter to U.S. Nuclear Regulatory Commission, "Update to Westinghouse's Application to Amend the AP1000 Design Certification Rule," APP-GW-GL-700, Revision 17, September 22, 2008 (ML083220482)
4. Westinghouse Electric Company, AP1000 Design Control Document (DCD), APP-GW-GL-700, Revision 18, December 1, 2010 (ML103480059 and ML103480572)
5. NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design (NUREG-1793)" September 2004 (ML043450344, ML043450354, ML043450284, ML043450290, and ML043450274)
6. NUREG-1793, Supplement 1, "Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design," December 2005 (ML060330557)
7. ACRS letter to the NRC Chairman on the AP1000 DCD amendment review, December 13, 2010 (ML103410351)
8. NRC Letter to WEC on "Ap1000 Pressurized Water Reactor Design Aircraft Impact Assessment Inspection, NRC Inspection Report No. 05200006/2010-203 and Notice of Violation," October 28, 2010 (ML10298058311)
9. WEC response to NRC on "Reply to Notice of Violation Cited in NRC Inspection Report No.: 05200006/2010-203 dated October 28, 2010," November 12, 2010 (ML1032104091)
10. NRC closure letter on "Westinghouse Electric Company Response To U.S. Nuclear Regulatory Commission (NRC) Inspection Report [05200006/2010-203] and Notice of Violation," November 23, 2010 (ML1032604471)

-6-

11. NRC Letter, "Aircraft Impact Assessment for New Reactor Designs," May 17, 2007 (ML071360212)
12. NRC Letter, "Issuance of Order Imposing Safeguards Information Protection Requirements and Fingerprinting and Criminal History Records Check Requirements for Access to Safeguards Information," September 12, 2007 (ML072220401)

13. NRC Letter, "Aircraft Impact Assessment for New Reactor Designs," May 17, 2007, ML071360212
14. NRC Letter, "Issuance of Order Imposing Safeguards Information Protection Requirements and Fingerprinting and Criminal History Records Check Requirements for Access to Safeguards Information," September 12, 2007, ML072220401)

Accession No: ML110170004

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| DATE | 01/19/11 | 01/19/11 | 01/19/11 | 01/19/11 | 01/19/11 |

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Appendix D

ACRS Report on Safety Aspects of SCE&G's COL Application



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001**

February 17, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: REPORT ON THE SAFETY ASPECTS OF THE SOUTH CAROLINA
ELECTRIC AND GAS COMPANY COMBINED LICENSE APPLICATION
FOR V.C. SUMMER NUCLEAR STATION, UNITS 2 AND 3

Dear Chairman Jaczko:

During the 580th meeting of the Advisory Committee on Reactor Safeguards (ACRS), February 10-12, 2011, we reviewed the NRC staff's Advanced Safety Evaluation Report (ASER) for the pending South Carolina Electric and Gas Company (SCE&G) Combined License Application (COLA) for the V.C. Summer Nuclear Station (VCSNS), Units 2 and 3. This application conforms to the design-centered review approach (DCRA).¹ The DCRA is Commission policy which allows the staff to perform one technical review and reach a decision for each COLA standard issued outside the scope of the design certification and to use this review and decision to support decisions on multiple COLAs.

The first COLA that receives a complete NRC staff review is designated as the reference COLA (RCOLA). Any subsequent application referencing the same design is designated as a subsequent COLA (SCOLA). In September 2008, the Westinghouse Electric Company (WEC) submitted Revision 17 of the design control document (DCD), describing the standard design for the AP1000 advanced pressurized water reactor. We reviewed the application and issued letter reports in December 2010 (for the DCD amendment and long-term core cooling) and in January 2011 (for the Aircraft Impact Assessment). In parallel, we reviewed Southern Nuclear Operating Company's Vogtle Electric Generating Plant (VEGP), Units 3 and 4, RCOLA and issued a letter report on January 24, 2011.

¹ The DCRA is described in Regulatory Issue Summary (RIS) 2006-06, "New Reactor Standardization Needed to Support the Design-Centered Licensing Review Approach," as endorsed by the Commission's Staff Requirements Memorandum in response to SECY-06-0187, "Semiannual Update of the Status of New Reactor Licensing Activities and Future Planning for New Reactors," dated November 16, 2006.

-2-

The VCSNS COLA is an AP1000 SCOLA. Our AP1000 Subcommittee held two meetings (July 21-22, 2010, and January 10-11, 2011) to review various chapters of the SCOLA and the staff's ASER. During these meetings, we met with representatives of the NRC staff, SCE&G and its vendors, and with the public. We also had the benefit of the documents referenced. This report fulfills the requirement of 10 CFR 52.87 that the ACRS report on those portions of the application which concern safety.

CONCLUSIONS AND RECOMMENDATIONS

1. There is reasonable assurance that VCSNS, Units 2 and 3, can be built and operated without undue risk to the health and safety of the public. The SCOLA for VCSNS, Units 2 and 3, should be approved following its final revision.
2. Recommendations 2 through 5 in our January 24, 2011, letter concerning the VEGP, Units 3 and 4, RCOLA are also applicable to the VCSNS, Units 2 and 3, SCOLA.
3. The staff should limit the use of the current version of the HABIT code to neutral density gas dispersion modeling.

BACKGROUND

By letter dated March 27, 2008, SCE&G submitted a combined license application to the NRC for VCSNS, Units 2 and 3, in accordance with the requirements of 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." In the application, SCE&G stated that VCSNS, Units 2 and 3, would be two Westinghouse AP1000 advanced pressurized water reactor units and would be located at the existing VCSNS site.

As an AP1000 SCOLA, SCE&G has organized and annotated its application to identify: a) sections that incorporate by reference the AP1000 DCD; b) sections that are standard for COL applicants in the AP1000 RCOLA; and c) sections that are site-specific and thus only apply to VCSNS, Units 2 and 3.

DISCUSSION

Our review of the VCSNS, Units 2 and 3, SCOLA was conducted in parallel with our review of both the AP1000 Design Certification Amendment application and the VEGP, Units 3 and 4, RCOLA. As a consequence, the RCOLA and SCOLA on which the staff's ASER is based reference Revision 17 of the DCD, whereas the current version is Revision 18, and there may be a further revision prior to certification rulemaking. Similarly, the SCOLA utilizes standard content in the RCOLA which may be revised prior to approval. Since the remaining licensing steps do not provide for further ACRS review of the DCD, RCOLA, or VCSNS Units 2 and 3 SCOLA revisions that incorporate changes in design and commitments made by applicants during our reviews, the staff should review with us any changes and commitments which deviate significantly from those presented during our review.

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Since the VCSNS, Units 2 and 3, SCOLA relies on the standard information found in the RCOLA, the recommendations described in our January 24, 2011, letter concerning the VEGP, Units 3 and 4, RCOLA in the following areas are also applicable to our VCSNS, Units 2 and 3, SCOLA assessment: containment interior debris limitation, in-service inspection/ in-service testing program requirements for squib valves, power uncertainty measurement, and incorporation of DCD or COLA changes. Likewise, the discussion of site-specific probabilistic risk assessment in our January 24, 2011, letter is applicable.

The V. C. Summer Nuclear Station Site

VCSNS is located approximately 30 miles northwest of Columbia, in Jenkinsville, South Carolina. The site location is adjacent to, and elevated about 150 ft. above, the Parr Reservoir which is created by a dam on the Broad River. It is also adjacent to the Monticello Reservoir. A nearby pumped storage facility connects the two reservoirs. VCSNS Unit 1 began commercial operation in 1984. The site location relative to water courses and topography effectively precludes flooding as a hazard to the site. The expanded three-unit nuclear station, in addition to the pumped storage facility, will be served by twelve 230 kV transmission lines.

Offsite Hazards

The review of offsite hazards for VCSNS, Units 2 and 3, included toxic gas that might be released by a transportation accident on the Norfolk Southern rail line located approximately one mile from the plant. SCE&G used a public domain United States Environmental Protection Agency developed computer code, ALOHA, which treats appropriately the modeling of the dispersion of both heavy and neutral-density gases.

Analysis results using ALOHA showed that vapor cloud explosions do not pose a threat to safety-related structures, systems, and components at VCSNS, Units 2 and 3. The analysis was performed using conservative assumptions such as dispersion over flat terrain, whereas the plant is located well above possible release locations on the rail line. Shock pressures were well below 1 psi, which is considered the minimum pressure wave amplitude to cause damage. The analysis also showed that toxic vapor clouds would not lead to control room concentrations that would pose a threat to operators.

For its confirmatory calculations of toxic gas effects, the staff used the HABIT code. However, HABIT only models neutral density gas dispersion and does not consider heavy gas effects. The calculated concentrations are lower than those in the ALOHA analyses, which is to be expected in view of several postulated releases consisting of heavy gases, which disperse more slowly.

In our letter report dated September 16, 1999, we recommended that “the staff should document evidence of the validity and the capability of computer codes endorsed in regulatory guides such as the HABIT code.” During our full committee meeting on February 10, 2011, the staff stated that it is pursuing validation of some aspects of the HABIT code. We recommend that use of the current version of HABIT be limited to neutral density gas dispersion modeling.

Seismic Source Model

SCE&G used source models provided by the Electric Power Research Institute. These were updated in light of more recent data and evolving knowledge, particularly for the Charleston and New Madrid Seismic Source Zones. No modifications to the Eastern Tennessee Seismic Source Zone were required. The VCSNS, Units 2 and 3, site-specific safe shutdown earthquake (SSE) was developed in accordance with Regulatory Guide 1.208, "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion," and information that was used in the VEGP, Units 3 and 4, Early Site Permit review and approval. Following our initial subcommittee meeting in July 2010, the seismic source information was updated.

Seismic Design Parameters

The peak ground acceleration (PGA) values for horizontal and vertical ground motions are 0.23g and 0.22g, respectively. The input seismic design ground motion response spectra (GMRS) for the SSE in the free field at plant grade exceeds the standard AP1000 certified seismic design response spectra (CSDRS) at frequencies of about 15 to 80 Hz (horizontal) and 20 to 80 Hz (vertical). However, the VCSNS site meets the AP1000 DCD criteria for a hard rock site, and the site-specific GMRS is bounded by the AP1000 hard rock high frequency spectrum. The staff concluded that the technical bases described in the AP1000 DCD were applicable to VCSNS, Units 2 and 3, for justifying that high-frequency exceedances of the AP1000 CSDRS are considered to be non-damaging.

Monitoring for Leakage from the Radioactive Waste Discharge Line

Liquid radioactive waste is diluted to below allowable offsite discharge limits by onsite blending with cooling tower blowdown. It then flows offsite through approximately one mile of high density polyethylene (HDPE) pipe downgrade to an outfall at the Parr Reservoir. Piping connections at the onsite blending location will be accessible for inspection, but the downstream portion of the line will be buried along a rail spur and will not be readily accessible for inspection.

Although this material has excellent properties and is acceptable for its intended service, operating experience in nuclear power plants is limited. Localized lack of fusion can occur during the joining of HDPE piping segments in the field. Such defects, if not detected by initial inspection and hydrostatic testing and repaired, can propagate through the pipe wall by slow crack growth. Since many joints will be formed in the field with no provision to inspect them using volumetric (UT) methods, undetected defects may grow and cause leaks during the 60-year service life of the pipe.

Monitoring wells will be relied upon as the only method for detecting groundwater contamination. SCE&G's groundwater monitoring program should be designed to provide for early detection of any leaks that develop in the HDPE waste water discharge line. The monitoring wells should detect contamination close to the pipe along its entire run, before it becomes widespread, and well before compliance with 10 CFR 20.1406 is challenged.

-5-

Deviation from RCOLA Standard Approach

As compared to the VEGP RCOLA, the VCSNS, Units 2 and 3, SCOLA included only one additional departure or exemption of note from the DCD. There is a slight increase in the maximum, safety, non-coincident wet bulb temperature of 1.2°F above the AP1000 DCD value of 86.1°F. The effects of this increase were evaluated by the staff and determined to be acceptable.

In summary, we agree with the staff's conclusions as documented in the staff's ASER regarding the safety issues associated with the SCE&G COLA for VCSNS, Units 2 and 3. We conclude that there is reasonable assurance that VCSNS, Units 2 and 3, can be built and operated without undue risk to the health and safety of the public. The SCE&G COLA for VCSNS, Units 2 and 3, should be approved following its final revision.

Sincerely,

/RA/

Said Abdel-Khalik
Chairman

REFERENCES

1. Southern Carolina Electric and Gas Company (SCE&G) Letter, "Combined License Application for V.C. Summer Nuclear Station Units 2 and 3," dated March 27, 2008 (ML081300460)
2. SCE&G Letter, "Combined License Application for V.C. Summer Nuclear Station Units 2 and 3," Revision 2, dated January 28, 2010 (ML100350739) (Rev. 2 was used as the basis for the staff's ASER)

3. During the course of ACRS review, the staff provided the following ASER chapters:

| Chapter | Chapter Title | Transmittal Memo to ACRS (Accession Numbers) | ASER (Accession Numbers) |
|------------------|--|--|--|
| 1 | Introduction and Interfaces | ML101550427 | ML101370358 |
| 2 | Site Characteristics (without Hydrology) | ML101550273 | ML101390008 |
| | Section 2.4 (Hydrology) | ML102450029 | ML102140255 |
| 3 | Design of Structures, Components, Equipment, and Systems | ML101550236 | ML103070512 |
| 4 | Reactor | ML101450515 | ML100621218 |
| 5 | Reactor Coolant System and Connected Systems | ML101550558 | ML100670055 |
| 6 | Engineered Safety Features | ML102080334 | ML102980694 |
| 7 | Instrumentation and Controls | ML101540411 | ML101370712 |
| 8 | Electric Power | ML101540620 | ML102370262 |
| 9 | Auxiliary Systems | ML101540643 | ML102670044 |
| 10 | Steam and Power Conversion Systems | ML101450456 | ML101020031 |
| 11 | Radioactive Waste Management | ML101550661 | ML100700102 |
| 12 | Radiation Protection | ML101550687 | ML101820007 |
| 13 | Conduct of Operations (without Emergency Planning) | ML103200058 | ML100840174 |
| | Section 13.3 (Emergency Planning) | ML101550691 | ML102020681 |
| 14 | Initial Test Programs | ML101550695 | ML102660181 |
| 15 | Accident Analysis | ML101550697 | ML103070532 |
| 16 | Technical Specifications | ML101550699 | ML101890864 |
| 17 | Quality Assurance | ML101550701 | ML101890606 |
| 18 | Human Factors Engineering | ML101550703 | ML101250016 |
| 19 | Probabilistic Risk Assessment | ML103010338 | ML102950269 |
| 19 Appendix 19.A | Loss of Large Areas of the Plant due to Explosions or Fires (LOLA) | ML101590342 | Public Version ML103350636 Non-Public Version ML103370008 |
| Appendix A | License Conditions, ITAAC, and FSAR Commitments | ML101550427 | ML103360056 |

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4. ACRS Letter, "Report on the Final Safety Evaluation Report Associated with the Amendment to the AP1000 Design Control Document," dated December 13, 2010 (ML103410351)
5. ACRS Letter, "Long-Term Core Cooling for the Westinghouse AP1000 Pressurized Water Reactor," dated December 20, 2010 (ML103410348)
6. ACRS Letter, "Report on the Safety Aspects of the Southern Nuclear Operating Company Combined License Application for Vogtle Electric Generating Plant, Units 3 and 4," January 24, 2011 (ML110170006)

Accession No: **ML110450490** Publicly Available **Y** Sensitive **N**

Viewing Rights: NRC Users or ACRS Only or See Restricted distribution

| | | | | | |
|---------------|----------|--------------|----------|----------|-------------|
| OFFICE | ACRS | SUNSI Review | ACRS | ACRS | ACRS |
| NAME | PWen | PWen | CSantos | EHackett | EMH for SAK |
| DATE | 02/17/11 | 02/17/11 | 02/17/11 | 02/17/11 | 02/17/11 |

OFFICIAL RECORD COPY

Appendix E

SCE&G Letter to the Commission on Community Outreach Costs



K. Chad Burgess
Associate General Counsel

chad.burgess@scana.com

April 25, 2011

VIA ELECTRONIC FILING

The Honorable Jocelyn G. Boyd
Chief Clerk/Administrator
Public Service Commission of South Carolina
101 Executive Center Drive (29210)
Post Office Drawer 11649
Columbia, South Carolina 29211

RE: Petition of South Carolina Electric & Gas Company for Updates and Revisions to Schedules Related to the Construction of a Nuclear Base Load Generation Facility at Jenkinsville, South Carolina
Docket No. 2010-376-E

Dear Ms. Boyd:

Subsequent to the hearing in this matter, the South Carolina Office of Regulatory Staff (“ORS”) raised with South Carolina Electric & Gas Company (“SCE&G”) concerns about the scope of work entitled “Community Support/Outreach” that was one of the scopes of work that was transferred from the Target Price Cost categories to the Firm with Indexed Adjustment cost category as a result of Change Order No. 8 to the Engineering, Procurement and Construction Agreement between SCE&G and Westinghouse/Shaw. In light of the relatively small amount of money involved, and in the interest of compromise, SCE&G has agreed with ORS that SCE&G will voluntarily agree not to include costs associated with this scope of work in future revised rates filings.

This agreement is being made in reliance on Section 58-33-280(B) of the Base Load Review Act which gives utilities the discretion to include less than all costs in such filings. This agreement is intended to resolve any concerns related to these costs.

By copy of this letter, we are notifying the parties of record of this agreement.

(Continued . . .)

The Honorable Jocelyn G. Boyd
April 25, 2011
Page 2

If you have any questions, please advise.

Very truly yours,



K. Chad Burgess

KCB/kms

cc: Nanette S. Edwards, Esquire
Jeffrey M. Nelson, Esquire
Debra Sherman Tedeschi, Esquire
Damon E. Xenopoulos, Esquire
Scott Elliott, Esquire
John Flitter
(all via electronic mail and U.S. First Class Mail)

Appendix F

NRC and WEC Correspondence Regarding Review of AP1000



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: opa_resource@nrc.gov Site: www.nrc.gov

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

No. 11-087

May 20, 2011

NRC CHAIRMAN GREGORY B. JACZKO'S STATEMENT ON AP1000 REVIEW ISSUES

The Nuclear Regulatory Commission's efforts to confirm its review of Westinghouse's amended AP1000 reactor design have resulted in the uncovering of additional technical issues. The NRC will always place its commitment to public safety and a transparent process before any other considerations; Westinghouse must resolve the issues before we can consider finalizing NRC certification of the design. The agency will determine what impact this effort may have on the schedule for the AP1000 design amendment and related license application reviews after the staff examines the company's response on these matters.

When the Commission approved issuance of the proposed certification rule earlier this year, the rule language noted the need for what, at the time, were additional calculations to confirm the staff's technical analysis. That work has led to more questions regarding the AP1000's shield building, as well as the peak accident pressures expected within containment. The agency has made it clear to Westinghouse that it must prove to our satisfaction that the company has appropriately and completely documented the adequacy of the design. NRC staff will examine Westinghouse's quality assurance and corrective actions programs as part of an inspection next week, and we expect the company will submit additional information early next month.

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News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

News Releases

Westinghouse Clarifies Facts Regarding NRC Statements on AP1000

- **Believes statements about discovery and severity of issues are being misinterpreted**
- **Emphasizes high level of testing, analysis and independent endorsements**
- **Will work with NRC and remains confident of final approvals this fall**

PITTSBURGH, May 26, 2011 /PRNewswire/ -- Officials of Westinghouse Electric Company today said they are disappointed that recent U.S. NRC statements regarding the discovery of new issues relating to the approval of design amendments for the AP1000® nuclear power plant are being misinterpreted and sensationalized.

The company also said the NRC statements, including a news release issued May 20, do not reflect Westinghouse's transparent and cooperative approach to the handling of the discovery and severity of the few remaining issues that need to be resolved before receiving approval from the NRC.

"The AP1000 nuclear energy plant is a highly robust and safe plant that has undergone an extremely intensive series of tests and reviews by the NRC, the independent Advisory Committee on Reactor Safeguards, university experts and numerous other independent third parties," said Ric Perez, president of Operations for the company. "The AP1000 is very likely the most closely scrutinized nuclear energy plant in history, now having undergone several years of exhaustive system and component testing, public debates, design reviews and multi-national regulatory oversight. We are confident that it is extremely safe."

The company is aware of only three issues remaining to be validated, none of which are safety significant. The issues involve the final submittal of confirmatory calculation in the areas described below. All three issues have undergone preliminary analyses which have been seen by the NRC for familiarity and clarity. All preliminary analyses results support the positions and bases taken by the staff in their advanced safety evaluation made in February 2011. None of the three issues is anticipated to lead to any design change in the plant as submitted by Westinghouse in December 2010 (DCD-18).

- In December 2010, the NRC and Westinghouse agreed that containment vessel internal pressure calculation would need to be revised. It was determined late in April that documentation of the calculation was required prior to the design certification amendment. The revised calculation will be reviewed with the NRC in a public forum on June 2.
- In April 2011, the NRC challenged the analytical guidelines used by Westinghouse in its comprehensive Shield Building Design Report submitted in May 2010. Specifically, the NRC challenged the position that climatic thermal loads (e.g. sunshine) need not be combined with seismic loads in structural design calculations due to their small impact and based on prior U.S. building code practice. Westinghouse disagreed with the NRC position that the load combination was a strict code compliance issue due to the shield building's steel-composite structure and clear treatment in the design report. Nevertheless, Westinghouse agreed to perform the detailed load combination calculations to provide additional assurances to the NRC. To date, Westinghouse has completed preliminary calculations which, as expected, require no change to the shield building design. This information was presented to the NRC during a public meeting last week

- The third issue relates to what design model was used for the design of the passive containment cooling system (PCS) tank. There are two technically acceptable models but each treat differently the hydrodynamic forces from water in the tank. The May 2010 Shield Building Design Report references the specific model to be used for each structure contacting the PCS tank. However, during the confirmatory work on loads discussed above, Westinghouse self-identified that it did not use the specific model outputs for one corner structure of the tank. The specific model loads and structural analysis have now been used, and Westinghouse is working to verify preliminary conclusions that indicate that there is no reason to change the tank design.

While Westinghouse strongly believes that safety is the utmost priority and that a transparent review process involving the public is critical, it also believes that it has already proven to the NRC that the AP1000 pressurized water reactor is a highly robust design that will take nuclear safety to an even higher level. In any case, the company has pledged to work cooperatively and transparently with the NRC to address any outstanding technical issues.

"We have defended openly our claims of safety for the past six years, starting with the original design certification of the AP1000. We have always reiterated to the staff that getting things right is our first priority. Our behaviors towards these last few issues continue to reinforce that practice." Mr. Perez said. "We are confident that we will resolve any legitimate and objective concerns and receive final approval of the design amendments as planned this fall."

Westinghouse Electric Company, a group company of Toshiba Corporation (TKY:6502), is the world's pioneering nuclear energy company and is a leading supplier of nuclear plant products and technologies to utilities throughout the world. Westinghouse supplied the world's first pressurized water reactor in 1957 in Shippingport, Pa. Today, Westinghouse technology is the basis for approximately one-half of the world's operating nuclear plants, including 60 percent of those in the United States.

www.westinghousenuclear.com

SOURCE Westinghouse Electric Company



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 31, 2011

*****FOR THE RECORD*****

**NRC CHAIRMAN GREGORY B. JACZKO'S STATEMENT ON
NRC'S COMMITMENT TO SAFETY**

The tragic events in Japan have understandably shined a brighter spotlight on the safety of nuclear power in the United States and on the role and actions of the U.S. Nuclear Regulatory Commission. As public servants, we pride ourselves on our transparency and openness and welcome the constructive dialogue about ensuring the facilities we license are operated safely and securely.

For more than six years I have served as a Commissioner and now Chairman of this independent federal government agency and I have personally seen the tremendous job the NRC staff does. Our employees are dedicated public servants who come to work every day to do one thing - ensure that nuclear power plants and nuclear materials are safe and secure. Most of our 4,000 employees make this a lifetime endeavor.

In the last several weeks, however, a skewed picture of the NRC has been painted in some stories -- one of missed opportunities and delayed enforcement suggesting an ineffectual regulator. Nothing could be further from the reality. Here are examples that demonstrate why I strongly disagree with these recent accounts.

First, about 18 months ago the NRC staff acted to resolve a significant design concern they identified with the Westinghouse AP1000 reactor design, proposed for construction in Georgia. This is a multi-billion dollar project, but the NRC's effort and focus has been on determining if the design meets our stringent safety requirements and at one point our staff experts determined that it did not. Consistent with our focus on safety the NRC experts told the plant designer that changes were needed or the staff would not approve the design. It was as simple as that. Because of forceful NRC action, the vendor made significant improvements. This took place in full view of the public, including a dissenting opinion by one of our staff members. Despite this transparency, there was little public recognition that this highlighted the NRC's commitment to safety.

Second, also little noticed was our work on the reactor vessel head, the lid of the metal structure that holds the nuclear fuel, of a plant in Ohio known as Davis Besse. Last year, the licensee identified problems with the interim replacement head. The NRC immediately studied the safety significance of this defective component and made certain the plant owner did the

right thing. Far from being a passive regulator, the agency demanded the plant owner accelerate replacement of the component years before the owner wanted to do so. Although this decision requires considerable cost on the part of plant owner, that had no bearing for the NRC safety experts. They simply put safety above all else, just as they had done in the case of the AP1000 reactor design. This is another example of the agency doing the right thing - something routine for the NRC staff. But unfortunately this attracted limited media attention.

Third, during our Japan nuclear incident response, I approved a courageous safety recommendation by our most senior, expert staffers. As we were monitoring the fluid situation in Japan, NRC staff became concerned that the situation could worsen and impact Americans living there. Using all of their training, the best available data, and centuries of combined nuclear safety experience, the staff recommended to me that we needed to advise American citizens to stay fifty miles away from the troubled nuclear site, recommendations that differed from the advice of the Japanese government. The staff did not focus on what might be popular with the nuclear industry but instead recommended action in the best interest of safety.

These three examples are just a few of the many ways the NRC staff works day-in and day-out to make sure nuclear power plants and nuclear materials will not cause harm to the public. I could fill the entire newspaper with just a fraction of the proactive safety measures taken by the staff in the last year. Yet as with most of our safety actions, these examples received little public attention.

Of course, we are not perfect. There are things we can do better. Among them is the need to better enforce our regulations designed to protect against the risk of fires at nuclear power plants, something the Commission continues to publicly debate. We are always striving to learn lessons and we will look to the tragedy in Japan to improve our programs, even though this event involved no U.S. nuclear facilities. In fact, just 12 days into the Japan incident the Commission created a task force to look at improvements to our regulations and oversight programs. That task force has already participated in one public meeting and is working systematically and methodically to make recommendations by July.

Ensuring nuclear safety is always challenging. We cannot guarantee the prevention of every possible accident and we seem to only make news when there are issues. But that is precisely our job – to find problems and ensure they are resolved. The knowledge that the dedicated women and men of the NRC are there to advise me and my colleagues on the Commission leaves me confident in our ability to continue to successfully protect the health and safety of the American people.

Appendix G

NRC Press Release Regarding the Completion of the FEIS



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: opa_resource@nrc.gov Site: www.nrc.gov

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

No. 11-067

April 19, 2011

NRC, U.S. ARMY CORPS OF ENGINEERS ISSUE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR NEW REACTORS AT VIRGIL C. SUMMER SITE

The Nuclear Regulatory Commission and the U.S. Army Corps of Engineers (USACE), Charleston District, have completed the Final Environmental Impact Statement (FEIS) for the Combined Licenses (COL) for the proposed Summer Units 2 and 3 reactors. The NRC concludes in the FEIS that there are no environmental impacts that would preclude issuing the COLs for construction and operation of the proposed reactors at the site, near Jenkinsville, S.C. USACE will use the information in the FEIS in making its federal permit decision in accordance with the Clean Water Act and Rivers and Harbors Act of 1899.

The FEIS will be available on the NRC website at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1939/>. The NRC staff, in cooperation with USACE, began its environmental review with a scoping process that included public meetings near the site in January 2009. The staff issued a draft EIS for the proposed COLs in April 2010 and held public meetings in May 2010 to gather comments on the draft EIS.

The FEIS, with the NRC's conclusions, is also available via the NRC's electronic document database, ADAMS, by entering accession numbers ML11098A044 and ML11098A057 in the ADAMS search engine at: <http://wba.nrc.gov:8080/ves>. In addition, the Fairfield County Library, at 300 Washington St. in Winnsboro, S.C., will have a hardbound copy of the FEIS available for public inspection.

The NRC's publishing of the FEIS is only part of the overall Summer COL review. The agency staff continues to compile its final safety evaluation report (SER), which will include recommendations from the NRC's Advisory Committee on Reactor Safeguards, an independent group of nuclear safety experts. The NRC's final licensing decision will be based on the FEIS and SER findings, along with a ruling from the five-member Commission that heads the agency.

The applicants, South Carolina Electric & Gas (SCE&G) and Santee Cooper, are applying for licenses to build and operate two Westinghouse AP1000 reactors adjacent to the existing Summer nuclear power plant, approximately 26 miles northwest of Columbia, S.C. The companies submitted the application March 27, 2008, and supplemented the application's environmental report to support their request on Feb. 13, 2009, and July 2, 2010. The AP1000 is a 1,100 MWe pressurized-water reactor design the NRC certified in 2006. The agency is

currently reviewing Westinghouse's May 2007 application to amend the certified design. More information regarding the review is available on the NRC's website at:
<http://www.nrc.gov/reactors/new-reactors/design-cert/amended-ap1000.html>.

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<http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

Appendix H

WEC Letter to the NRC Confirming Submission of the DCD Rev. 19



Westinghouse Electric Company
Nuclear Power Plants
1000 Westinghouse Drive
Cranberry Township, PA 16066
USA

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Direct tel: 412-374-4598
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Your ref: Docket No. 52-006
Our ref: DCP_NRC_003177

June 13, 2011

Subject: Westinghouse Electric Company - Updated Application to Amend the AP1000® Nuclear Power Plant Design Certification Rule

Westinghouse Electric Company is pleased to submit an updated application to amend the AP1000® Design Certification Rule (10 CFR 52 Appendix D). This application update is based on the AP1000 Design Control Document (DCD) Revision 19, and includes necessary changes to address NRC comments raised during the confirmatory review of prior updates submitted in DCD Revision 18. Westinghouse letter dated May 26, 2007 submitted the application to amend the AP1000 Design Certification, which was updated by Westinghouse letters dated September 22, 2008 and December 1, 2010.

This submittal, along with updated Shield Building and Containment Vessel technical reports being provided to the NRC separately, provides the resolution of all known NRC open confirmatory items associated with the pending Final Safety Evaluation Report needed for final rule making.

The changes incorporated into DCD Revision 19 are clarifications and minor corrections. Compared to Revision 18, there are no design changes in Revision 19. The clarifications and minor corrections contained in Revision 19 have no safety significance. Hence, the changes do not warrant an additional public comment period. Westinghouse notes that the NRC has already convened public meetings associated with its review of the changes, and thus the public already has had the opportunity to comment.

This letter and its enclosures provide the prescribed information pursuant to 10 CFR 52. As part of DCD Revision 19, Westinghouse has included a "roadmap" that identifies the appropriate 10 CFR 52.63(a)(1) criteria that justify inclusion of the updated information in DCD Revision 19.

The two enclosures contain the electronic files, pursuant to 10 CFR 50.30(b), providing "AP1000 Design Control Document", Revision 19, for the application under Oath of Affirmation (Attachment 1).

- Enclosure 1, APP-GW-GL-700, contains sensitive unclassified non-safeguards information relative to the physical protection of an AP1000 Nuclear Plant that should be withheld from public disclosure pursuant to 10 CFR 2.390(d).
- Enclosure 2, APP-GW-GL-702, is the redacted version of Enclosure 1.

AP1000, the AP1000 logo, and the tagline, "The Nuclear Renaissance Starts Here," are trademarks or registered trademarks in the United States of Westinghouse Electric Company LLC, its subsidiaries and/or its affiliates. This mark may also be used and/or registered in other countries throughout the world. All rights reserved. Unauthorized use is strictly prohibited. Other names may be trademarks of their respective owners.

The files for the two versions are provided on separate CD-ROMS to facilitate handling by the Document Control Desk. The files and directory structure on the CD-ROMS are intended to satisfy the NRC requirements for electronic submittals.

The "AP1000 Design Control Document" was prepared in accordance with the Westinghouse Quality Management System (QMS) as approved by the NRC. The Westinghouse QMS includes specific procedures for design configuration management, licensing basis configuration management and corrective action processes.

Recognizing the importance of ensuring the quality of the DCD, Westinghouse has performed the following actions to provide assurances of the correctness of the DCD. Specifically, the following actions have been taken:

- Westinghouse performed a systematic assessment of *AP1000* design finalization activities that are in-process to provide assurance that known future design activities would not have a material impact on the DCD or the NRC safety review of the DCD. (Note: Design finalization activities refers to development of detailed design documents needed for procurement and fabrication documents – not for licensing purposes. However, in the course of design finalization, there are occasions where design changes are identified, for example, to enhance the design for operability, constructability or supply base availability. All design changes are evaluated for licensing impact and reportability.)
- Westinghouse performed a systematic assessment of applicable open items in the Westinghouse Corrective Action database to provide assurance that there would be no material impact on the DCD or the NRC safety evaluation.
- Westinghouse performed a systematic assessment of applicable open Part 21 evaluations to provide assurance that there would be no material impact on the DCD or the NRC safety evaluation.

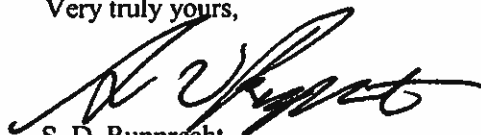
In addition, the AP1000 Design Center Working Group (DCWG) performed an independent audit and assessment of Westinghouse in-process design activities, corrective action items, and finalized calculation documents to provide additional assurances. The DCWG oversight did not identify any issue that would prevent issuance of DCD Revision 19.

Based on the results from these oversight and assessment activities, the "AP1000 Design Control Document", Revision 19 is ready for docketing in support of final rulemaking.

Westinghouse is ready and willing to discuss the actions listed above with the NRC and looks forward to continued NRC progress on the amendment to the *AP1000* Design Certification Rule, as well as the NRC Final Safety Evaluation Report.

Please direct any questions related to this amendment application to R. F. Ziesing, Director, U.S. Licensing at 412-374-2035.

Very truly yours,



S. D. Rupprecht
Vice President
AP1000 Product Delivery Systems

/Attachment

1. "Oath of Affirmation," dated June 13, 2011

/Enclosures

1. CD-ROM Containing APP-GW-GL-700, AP1000 Design Control Document, Revision 19, Sensitive Version
2. CD-ROM Containing APP-GW-GL-702, AP1000 Design Control Document, Revision 19, Public Version

cc: E. McKenna - U.S. NRC
P. Buckberg - U.S. NRC
R. Joshi - U.S. NRC
T. Spink - TVA
P. Hastings - Duke Energy
R. Kitchen - Progress Energy
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