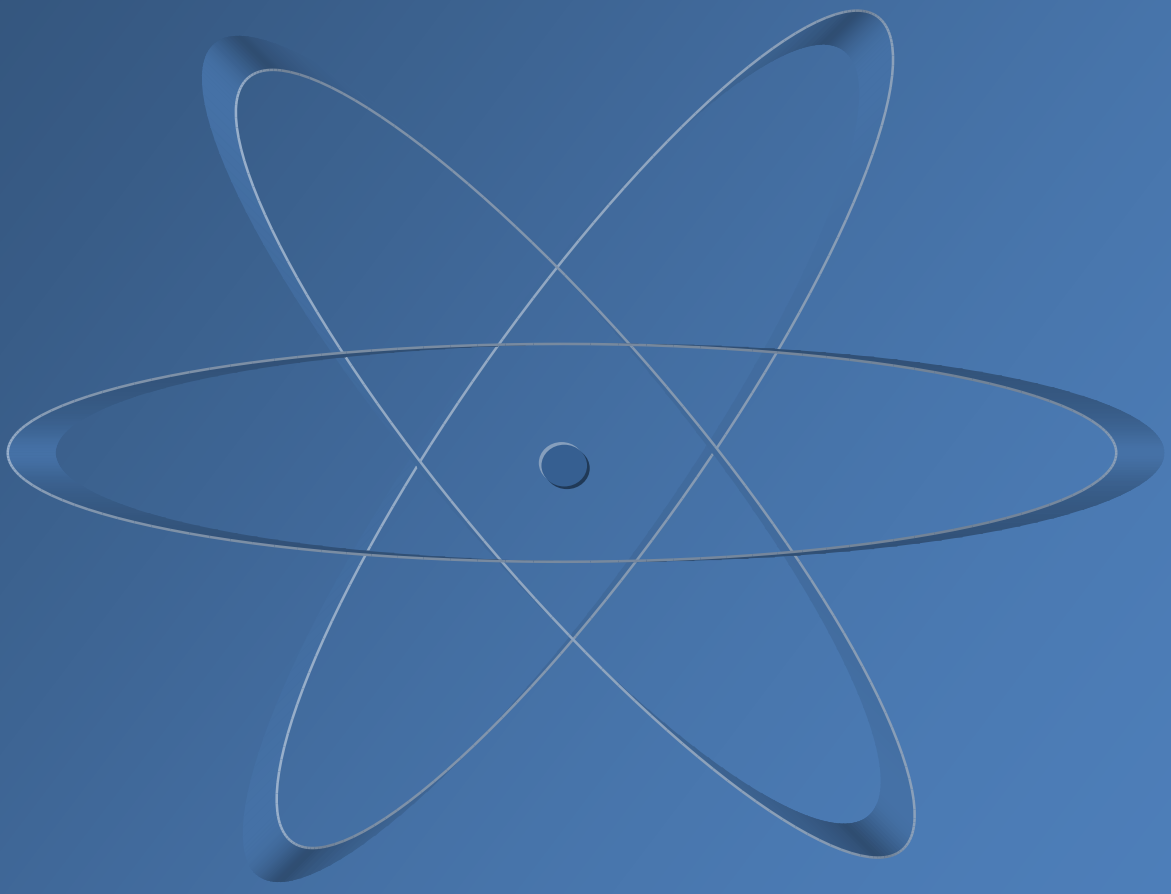
South Carolina Office of Regulatory Staff

Review of South Carolina Electric & Gas Company's 2010 4th Quarter Report on V. C. Summer Units 2 and 3 Status of Construction



April 21, 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. Subsequently, on January 22, 2010, the Commission approved updated capital cost estimates and construction schedules in Order No. 2010-12, which is filed in Docket 2009-293-E.

SCE&G and the South Carolina Public Service Authority ("Santee Cooper") are co-owners of the project at 55% and 45%, respectively. The South Carolina Office of Regulatory Staff ("ORS") has no regulatory oversight of Santee Cooper. The two companies continue to operate jointly to construct the Units under the terms established in their Bridge Agreement. Negotiations continue between the two utilities to establish the terms of a final joint ownership contract. As previously reported in ORS reviews, 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, which is attached as Appendix A, 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 ownership interest.

On February 14, 2011, SCE&G submitted its 2010 4th Quarter Report ("Report") related to its construction of the Units. The Report is filed in Commission Docket No. 2008-196-E and covers the quarter ending December 31, 2010. The Company submitted its Report pursuant to S.C. Code Ann. § 58-33-277 (Supp. 2009) 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 estimates.

Approved Schedule Review

Milestone Schedule

As of December 31, 2010, ORS verified that of the Milestone Schedule's 146 activities:

- 58 milestone activities are complete (includes 57 historical and 1 future milestones)
- 88 milestone activities remain to be completed (includes 4 delayed historical and 84 future milestones)

ORS also verified that during the 4th quarter of 2010:

- Six (6) milestone activities were scheduled to be completed
  - Three (3) of these milestones were completed
  - Three (3) of these milestones remain to be completed
- One (1) historical milestone was completed

As of the end of the 4th quarter of 2010, ORS verified that:

- None (0) of the milestones fall outside the deviation standards of being accelerated up to 24 months or being delayed up to 18 months.

In ORS's 3rd quarter 2010 review, there were two (2) Caution Milestones identified. Caution Milestones are those that have been delayed ten (10) months or greater. Below is the current status of these milestones:

- **Milestone Activity No. 55 –** *Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion – Unit 2.*
  Status: Completed.

  This activity was scheduled to be completed on February 28, 2010. It was completed on December 30, 2010. This milestone was delayed to correct a distortion in the upper shell and has been impacted by work scheduling conflicts.

- **Milestone Activity No. 80** – *Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2.*
  Status: Delayed 9 months.

  This activity is scheduled to be completed on January 31, 2011. The revised target completion date is October 31, 2011. Mangiarotti, located in Italy, is the manufacturer for the heat exchanger and associated tubing.

  The Company reports to ORS that a manufacturing hold was placed on Mangiarotti. This hold caused the delay and has since been lifted. The Company does not anticipate the delay to impact the receipt of this major component at the site.

ORS has not identified any Caution Milestones during its 4th quarter review. Appendix B shows details of the Milestone Schedule as of December 31, 2010.

SCE&G's Milestone Schedule attached to the Report indicates that overall construction is on schedule. ORS's review of the current Milestone Schedule does not identify any impact to Unit 2 and Unit 3's substantial completion dates of April 1, 2016 and January 1, 2019, respectively.

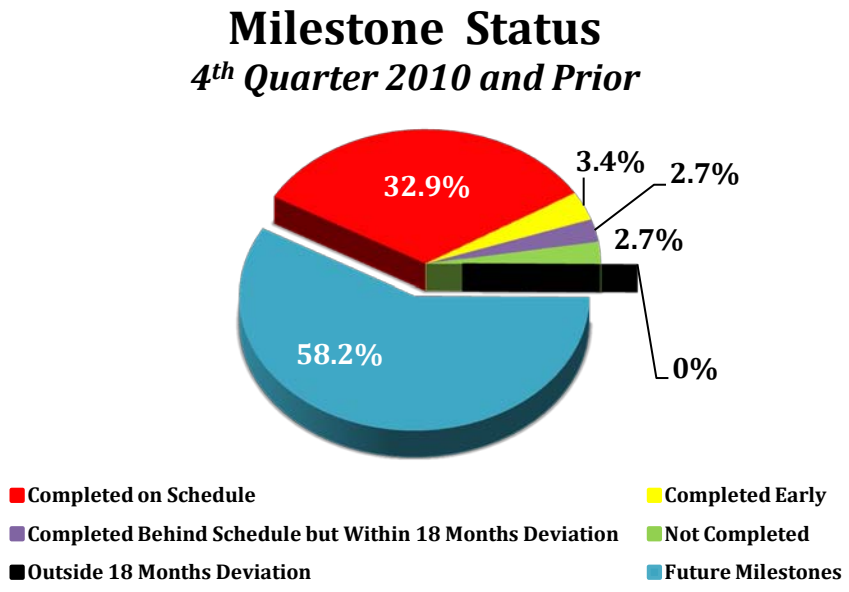
ORS reviewed four (4) invoices associated with milestones that were paid during the 4th quarter and found the invoice amounts to be consistent with the EPC payment schedules.

Table 1 shows the status of the 61 historical milestones and Chart 1 shows the status of all 146 milestones for the 4th quarter of 2010 and prior.[1]

Table1:

Historical Milestones *4th Quarter 2010 and Prior* ***61 of 146 Total Milestones***	# of Milestones	% of All Milestones[2]
Completed on Schedule	48	32.9%
Completed Early	5	3.4%
Completed Behind Schedule but Within 18 Months Deviation	4	2.7%
Not Completed	4	2.7%
Outside 18 Months Deviation	0	0%
Total Historical Milestones	**61**	**41.8%**

Chart 1:



[1] The numbers reported by ORS and SCE&G will 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 July 2, 2010 and the actual completion date is June 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 done on schedule since it was completed within 30 days of the scheduled completion date.

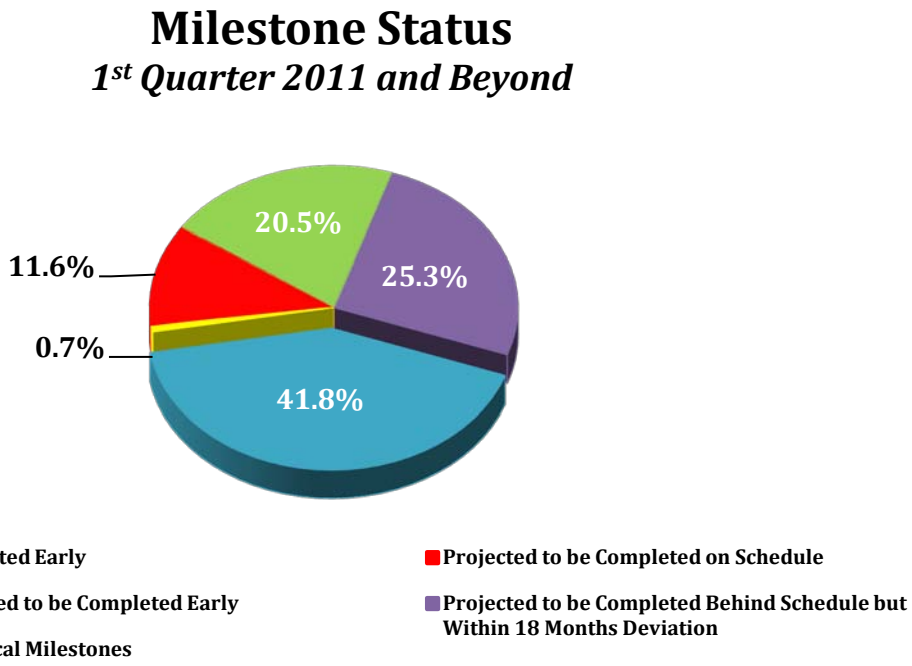
[2] There will be slight variances in these numbers due to rounding.

Table 2 shows the status of the 85 future milestones and Chart 2 shows the status of all 146 milestones for the 4th quarter 2010 and beyond.[3]

Table 2:

Future Milestones *1st Quarter 2011 and Beyond* ***85 of 146 Total Milestones***	# of Milestones	% of All Milestones[4]
Completed Early	1	0.7%
Projected to be Completed on Schedule	17	11.6%
Projected to be Completed Early	30	20.5%
Projected to be Completed Behind Schedule but Within 18 Months Deviation	37	25.3%
Total Future Milestones	**85**	**58.2%**

Chart 2:



[3] The numbers reported by ORS and SCE&G will 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 July 2, 2010 and the actual completion date is June 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 done on schedule since it was completed within 30 days of the scheduled completion date.

[4] There will be slight variances in these numbers due to rounding.

Specific Construction Activities

The overall site construction activities are progressing well. The construction workforce consists of approximately 900 contract personnel and 140 SCE&G personnel. Some of the major construction activities during the 4th quarter of 2010 are listed below:

- Excavation of the Nuclear Island for Unit 2, which provides the foundation for the reactor, continued. This is the first critical path activity. ORS closely monitors all critical path activities.

- Testing of safety-related concrete mixes continues. Concrete is being produced on-site at the first batch plant for the Heavy Lift Derrick ("Bigge Crane") foundation, switchyard foundations and pads, and electrical duct banks.

- Preparation for the Bigge Crane continues. The second of three levels of concrete was placed into the counterweight. A stone lay down area for the boom assembly was also installed.

- The second on-site batch plant arrived at the site with assembly scheduled for the first quarter of 2011.

- The Yard Fire Service tank was completed.

- The three concrete pads on which the Containment Vessels will be fabricated were completed.

- A 330 ton crane and a 150 ton crane were assembled near the concrete pads to support receipt of Containment Vessel Bottom Head ("CVBH") material.

- All of the CVBH material has been received and stored on site. The shipment and receipt of the Bottom Head material is a critical path activity. ORS closely monitors all critical path activities.

- The renovation of the Nuclear Learning Center was completed.

- Installation of the Storm Drain System piping around the Tabletop continues.

- Earthwork on the table top area – where the AP1000 units will be located – was nearing completion.

- The Module Assembly Building installation of permanent electrical power continues with scheduled completion in the first quarter of 2011.

Photographs of 4th quarter construction activities are shown in Appendix C.

Change Orders

During the 4th quarter of 2010, Change Order No. 8 was still under development. Change Order Nos. 9 and 10 were approved by the Company. Change Order No. 11 was executed subsequent to the 4th quarter of 2010.

Change Order No. 8 – On August 10, 2010, SCE&G entered into an agreement with the consortium consisting of Westinghouse Electric Company ("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.

Change Order. No. 9 – This Change Order was executed on November 30, 2010 to reconfigure certain outgoing transmission lines within the Unit 2 Switchyard.

Change Order No. 10 – Approved on December 16, 2010, this Change Order provides licenses and software to allow SCE&G direct digital access to WEC's Primavera "live" integrated project schedule without incurring periodic software update costs.

Change Order No. 11 – 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 Combined License ("COL") from the Nuclear Regulatory Commission ("NRC"). This Change Order and COL Delay Study ("Study") are described in more detail in the Section "Notable Activities Occurring After December 31, 2010."

Table 3 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 [5]	Owner Directed	7/22/2009	Approved
2	Limited Scope Simulator	Firm	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	**Addition to Change Order #1** Increased training by two weeks	Fixed Price with 0% escalation	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	Entitlement	7/13/2010	Approved
8	Target to Firm/Fixed Shift	Target, Firm and Fixed Price Categories	Owner Directed	Pending	Under Development
9	Switchyard Lines Reconfiguration	Target and Firm 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 [6]	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

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

[6] This Change Order was approved in the 1st Quarter 2011.

Federal Licensing Activities

The NRC issued a Revised Review Schedule to SCE&G on October 29, 2010. The revised NRC schedule supports issuance of the final safety evaluation report in June 2011 and the final environmental impact statement in April 2011.

On December 13, 2010, the NRC Advisory Committee on Reactor Safeguards ("ACRS") reported to the NRC stating: "we conclude that there is reasonable assurance that the revised design can be built and operated without undue risk to the health and safety of the public." This conclusion was contingent upon the results of the ACRS' review of the aircraft impact assessment. The ACRS provides reputable – but nonbinding – input to the NRC. The NRC will consider the ACRS findings before deciding whether to approve the rulemaking for the revised AP1000 design. The ACRS report is attached as Appendix D.

On January 19, 2011, the ACRS supplemented its December 13, 2010 findings and issued a report on the safety aspects of the Aircraft Impact assessment of the AP1000. Additionally, 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. This report and NOPR are described in more detail in the Section "Notable Activities Occurring After December 31, 2010."

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 December 31, 2010."

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 Milestone		**Completion Date**
Application		
Application Submitted		Completed – 3/27/2008
Safety Review		
Phase A	Requests for Additional Information ("RAIs") and Supplemental RAIs	Completed – 9/10/2009
Phase B	Advanced Final Safety Evaluation Report ("SER") without Open Items	Completed – 12/10/2010
Phase C	ACRS Review of Advanced Final SER	Completed – 3/26/2011
Phase D	Final SER Issued	**Target – June 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 – 4/19/11
Hearing		
NRC holds Mandatory hearing		**Target – August 2011**
License		
NRC Rulemaking Decision		**Target – September 2011**
NRC Issuance of Combined License		**Target – December 2011**

Approved Budget Review

As reported in ORS's 3rd Quarter 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 removes 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) is 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 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 billion[7] to $5.787 billion, which is an overall reduction of approximately $400 million in the total cost to construct the Units. SCE&G's Report reflects the removal of the $438.293 million (in 2007 dollars) in contingency dollars, the request to include approximately $174 million (in 2007 dollars) in capital costs and the corresponding updated gross construction cost of the project.

ORS reviewed the Company's Filing for revised capital costs and during the April 4, 2011 hearing on the Filing, ORS witness Mark Crisp stated in his direct testimony that, "based on our review of the Company's filing, the supporting documentation, in-depth review of each modification, and discussions with SCE&G, we recommend granting the Company's request." This testimony is consistent with the Settlement Agreement ORS reached with SCE&G prior to the hearing. A Commission Order on this Filing is pending.

ORS's budget review includes an analysis of the 4th quarter 2010 cost estimates, project cash flow, escalation and AFUDC.

[7] $6.188 billion reflects the removal of the contingency dollars. The gross construction cost per Commission Order No. 2010-12 is $6.875 billion.

Cost Estimates

To determine how closely the Company adheres to the budget approved by the Commission in Order No. 2010-12, 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 found multiple variances which were due to various project changes (e.g., shifts in work scopes, payment timetables, construction schedule adjustments, change orders). As of the end of the 4th quarter of 2010, the cumulative impact of these changes increases the total base project cost[8] (in 2007 dollars) from the approved $4.096 billion to $4.270 billion, which is an increase of approximately $174 million – the amount SCE&G seeks to include in its Filing.

Project Cash Flow

In its Report, the Company also compares its current project cash flow to the cash flow schedule approved by the Commission in Order 2010-12. To produce a common basis for the comparison, SCE&G adjusts the approved cash flow schedule to reflect the current escalation rates. As of December 31, 2010, 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 roughly $28.639 million under budget at the end of 2010. Also, at the end of the project in 2018, the cumulative project cash flow is forecasted to be approximately $185 million over budget.

Table 5 shows the annual and cumulative project cash flows as compared to those approved in Order No. 2010-12.

[8] Base project cost does not include contingency dollars.

Table 5:

Project Cash Flow Comparison *$'s in Thousands* [9]			
		Annual Over/(Under)	**Cumulative Over/(Under)**
Actual	**2007**	-	-
	2008	$0	$0
	2009	($4,282)	($4,282)
	2010	($24,357)	($28,639)
Projected	**2011**	($13,909)	($42,548)
	2012	**$93,929**	**$51,381**
	2013	**$61,231**	**$112,613**
	2014	($14,346)	**$98,267**
	2015	**$30,280**	**$128,547**
	2016	**$29,623**	**$158,170**
	2017	**$4,519**	**$162,689**
	2018	**$22,448**	**$185,137**

In summary, the Report shows an increase in the total base project cost of approximately $174 million (in 2007 dollars) resulting in an additional project cash flow requirement of approximately $185 million necessary to complete the project in 2018. The Company seeks to reconcile the base project cost requirements and the project cash flow deficiency in its Filing.

[9] There will be slight variances in these numbers due to rounding.

AFUDC and Escalation

The forecasted AFUDC for the project through the 4th quarter of 2010 is $255.684 million and is based on a forecasted 5.87% AFUDC rate. This is a decrease of approximately $47.091 million from the Company's 2010 3rd Quarter Report.

As reported by ORS in its review of SCE&G's 2010 3rd Quarter Report, the decline in the five-year average escalation rates reduce the projected project cash flow. Current worldwide economic conditions continue to reduce the projected cost escalation of the project. Primarily due to the decrease in escalation rates, the overall project is considered under budget. More specifically, as of December 31, 2010, the forecast of gross construction cost of the plant is $5.787 billion as compared to the approved gross construction cost of $6.188 billion which reflects an approximate $400 million overall reduction in the cost of the project.

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
- 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
- Attends NRC Public Meetings regarding SCE&G Combined License Application
- Participates in ACRS conference calls

Notable Activities Occurring after December 31, 2010

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 4th quarter are reported below.

Change Order No. 8

As mentioned in previous ORS reviews of the Company's Quarterly Reports, SCE&G has negotiated with Shaw to use a single, large Bigge Crane as opposed to two smaller cranes contemplated in the EPC Contract. SCE&G reports to ORS that Change Order No. 8 satisfies the Company's concerns regarding the use of a single large crane. During the April 4, 2011 hearing, Company witness Carlette Walker stated in her direct testimony that, "SCE&G's customers benefit because the project will have the use of the HLD at the current price of the two smaller Lampson cranes."

The dollars associated with Change Order No. 8 are included in the Company's Filing. ORS determined these costs to be reasonable and recommended the Commission approve the Company's request.

Change Order No. 11

SCE&G executed this Change Order and agreed for WEC and Shaw to perform a study to evaluate the construction schedule impact of a probable delay in the receipt of the COL from the NRC. The Study will consider two alternative construction plans.

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. Under both scenarios the Substantial Completion date of Unit 3 would remain as scheduled for January 1, 2019. The Company reports to ORS that it expects to make a decision on which scenario to select by July 2011.

ORS will defer its position on the costs incurred by SCE&G as a result of Change Order No. 11 until those costs are presented in a revised rates filing.

Aircraft Impact Assessment

On January 19, 2011, the 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 D.

A NOPR was published on February 24, 2011 in Vol. 76, No. 37 of the Federal Register. This NOPR pertains to the NRC's proposal to amend its regulations to certify an amendment to the AP1000 standard plant design. 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 are due by May 10, 2011.

Shaw Modular Solutions (SMS)

In the Report, SCE&G noted deficiencies in SMS' quality assurance programs involving procedures and documentation, which resulted in manufacturing holds. The NRC scheduled a vendor inspection at the SMS facility in Lake Charles, LA on January 10 – 14, 2011, but this inspection was terminated two days early due to limited fabrication activities at SMS. In response to this inspection, the NRC sent a letter to SMS on January 24, 2011 documenting the outcome of this inspection and requesting additional information from SMS. On February 22, 2011, SMS responded to the NRC and addressed the challenges SMS identified and their proposed corrective actions. SMS stated it expects to be at a high level of production of structural modules in early June 2011 and to ship the first structural sub-module at the end of June 2011. SMS will provide an update when the schedule for the modules is finalized.

In a letter dated March 8, 2011, the NRC stated that SMS was responsive to the NRC's request and there were no further questions or comments at this time. The NRC also noted that NRC staff may review SMS' implementation of their corrective actions during a future inspection. This correspondence is attached as Appendix E. SCE&G notified ORS that SMS recently revised their module off-site and on-site fabrication schedules. ORS will continue to follow and report on the status of SMS.

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 the four lines needed to serve the Units. This project will consist of two phases. Phase 1 will construct two transmission lines. Line 1 will connect the existing Switchyard at V.C. Summer Unit 1 to the Company's existing Killian Road Substation. Line 2 will be connecting the newly constructed Switchyard ("Switchyard 2") to the Company's existing Lake Murray Substation. Phase 2 will construct two additional transmission lines which will connect Switchyard 2 and the to-be-constructed St. George Substation. The four new transmission lines will occupy existing transmission right of way corridors except for approximately six miles of the Line 1 corridor.

Final Environmental Impact Statement

On April 19, 2011, the NRC and USACE issued the FEIS for the Units. The FEIS states that the NRC and USACE concluded that there are no environmental impacts that would prevent issuing the COL for construction and operation of the Units. The issuance of the FEIS is only part of the COL review. USACE will use the information in the FEIS in making its decision to issue a 404 Wetland Permit, which is required before SCE&G can proceed with construction activities in areas on the site designated as a wetland.

The NRC continues its COL review with a focus on the final safety evaluation report ("SER"). The SER will include recommendations from the ACRS. The final licensing decision will incorporate the FEIS and SER findings, and requires a ruling from the five-member Commission that heads the NRC. A copy of the press release from the NRC is attached as Appendix F.

SCE&G's 2011 1st Quarter Report is due 45 days after March 31, 2011. ORS expects to continue publishing a review evaluating SCE&G's quarterly report.

Appendix A

Santee Cooper Press Release

NEWS RELEASE

March 21, 2011

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Santee Cooper, OUC enter into letter of intent for share of planned V.C. Summer Station units 2 and 3

MONCKS CORNER, S.C. – Santee Cooper, which joined with SCE&G and filed an application in 2008 to build two new nuclear reactors at the V.C. Summer Nuclear Generating Station, announced today it has signed a letter of intent to negotiate a purchase power agreement with Orlando Utilities Commission (OUC) for a portion of its share of the planned new nuclear project.

Santee Cooper owns 45 percent of the V.C. Summer expansion, and SCE&G owns 55 percent. In 2010, Santee Cooper began evaluating its level of ownership percentage in the new nuclear facilities, a review that continues and has been disclosed with rating agencies and other key stakeholders. V.C. Summer units 2 and 3 are projected to come online in 2016 and 2019.

The letter of intent with OUC is for 5-10 percent of the capacity and output from Santee Cooper's ownership interest in the two new units. The letter of intent also includes as part of the potential transaction an option for OUC's future acquisition of a portion of Santee Cooper's ownership interest.

Established in 1923 by a special act of the Florida Legislature, OUC—The *Reliable* One is the second largest municipal utility in Florida. OUC provides electric and water services to more than 221,000 customers in Orlando, St. Cloud and parts of unincorporated Orange and Osceola counties.

Santee Cooper is South Carolina's state-owned electric and water utility, and the state's largest power producer. The ultimate source of electricity for 2 million South Carolinians, Santee Cooper is dedicated to being the state's leading resource for improving the quality of life for the people of South Carolina. For more information, visit www.santeecooper.com.

Appendix B

Detailed Milestone Schedule as of December 31, 2010

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	6/30/2008	

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
11	Reactor Vessel Internals – Issue Long Lead Material P.O. to Fabricator Units 2 & 3	11/21/2008		No	No	11/21/2008	
12	Contractor Issue Long Lead Material - P.O. to Reactor Vessel Fabricator - Units 2 & 3	6/30/2008		No	No	5/29/2008	1 Month Early
13	Contractor Issue P.O. to Integrated Head Package Fabricator - Units 2 & 3	7/31/2009		No	No	7/31/2009	
14	Control Rod Drive Mechanism – Issue P.O. for Long Lead Material to Fabricator - Units 2 & 3 - First Payment	6/21/2008		No	No	6/21/2008	
15	Issue P.O.s to Nuclear Component Fabricators for Nuclear Island Structural CA20 Modules	7/31/2009		No	No	8/28/2009	
16	Start Site Specific and Balance of Plant Detailed Design	9/11/2007		No	No	9/11/2007	
17	Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3	10/31/2008		No	No	10/31/2008	
18	Stream Generator - Issue Final P.O. to Fabricator for Units 2 & 3	6/30/2008		No	No	6/30/2008	
19	Reactor Vessel Internals - Contractor Issue P.O. for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3	1/31/2010		No	No	1/29/2010	
20	Contractor Issue Final P.O. to Reactor Vessel Fabricator - Units 2 & 3	9/30/2008		No	No	9/30/2008	

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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 Exchanger Fabricator - Second Payment - Units 2 & 3	10/31/2008		No	No	10/31/2008	
30	Start Parr Road Intersection Work	2/13/2009		No	No	2/13/2009	

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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**	**Completed - Delayed 1 Month**
38	Design Finalization Payment 4	4/30/2009		No	No	4/30/2009	
39	Turbine Generator Fabricator Issue P.O. for Condenser Material - Unit 2	8/31/2009		No	No	8/28/2009	
40	Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3	4/30/2009		No	No	4/30/2009	

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	3/31/2011	No	No		3 Months Early
48	Turbine Generator Fabricator Issue P.O. for Moisture Separator Reheater/Feedwater Heater Material Unit 2	4/30/2010		No	No	4/30/2010	
49	Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2	4/30/2010		No	No	2/18/2010	2 Months Early

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	11/30/2011	No	No		Delayed 1 Month
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**	**Completed - 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:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

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60	**Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2**	**12/31/2010**	**3/31/2011**	**No**	**No**		**Delayed 3 Months**
61	Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2	5/31/2011	11/30/2011	No	No		Delayed 6 Months
62	Polar Crane Fabricator Issue P.O. for Main Hoist Drum and Wire Rope - Units 2 & 3	2/28/2011	2/28/2011	No	No		
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	10/11/2011	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	4 Months Early
67	**Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2**	**10/31/2010**	**3/31/2011**	**No**	**No**		**Delayed 5 Months**
68	Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3	2/28/2012	2/28/2012	No	No		

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	12/28/2011	No	No		Delayed 3 Months
70	Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2	9/30/2011	9/30/2011	No	No		
71	Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2	6/30/2011	3/31/2011	No	No		3 Months Early
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	7/31/2011	No	No		17 Months Early
74	Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2	12/31/2011	1/31/2012	No	No		Delayed 1 Month
75	**Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2**	**10/31/2010**	**5/31/2011**	**No**	**No**		**Delayed 7 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		

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Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	4/12/2012	No	No		Delayed 2 Months
79	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2	6/30/2010	2/28/2011	No	No		Delayed 8 Months
80	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2	1/31/2011	10/31/2011	No	No		Delayed 9 Months
81	Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2	2/28/2012	10/31/2012	No	No		Delayed 8 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	7/26/2012	No	No		Delayed 4 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	9/30/2012	No	No		

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	12/10/2012	No	No		Delayed 3 Months
89	Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2	5/31/2012	6/30/2012	No	No		Delayed 1 Month
90	Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	12/31/2012	12/31/2012	No	No		
91	Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2	7/31/2012	3/31/2013	No	No		Delayed 8 Months
92	Start Containment Large Bore Pipe Supports for Unit 2	4/9/2012	7/10/2012	No	No		Delayed 3 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	10/31/2012	No	No		1 Month Early
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 Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	6/13/2013	No	No		Delayed 3 Months
98	Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2	4/30/2012	3/31/2012	No	No		1 Month Early
99	Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2	2/28/2013	2/28/2013	No	No		
100	Deliver Reactor Vessel Internals to Port of Export - Unit 2	7/31/2013	8/31/2013	No	No		Delayed 1 Month
101	Set Unit 2 Containment Vessel #3	4/17/2013	7/31/2013	No	No		Delayed 3 Months
102	Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2	3/31/2013	2/28/2013	No	No		1 Month Early
103	Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2	4/30/2013	3/31/2013	No	No		1 Month Early
104	Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	2/28/2014	9/30/2013	No	No		5 Months Early

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	9/5/2013	No	No		Delayed 3 Months
107	Set Unit 2 Reactor Vessel	6/18/2013	10/2/2013	No	No		Delayed 3 Months
108	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3	12/31/2013	11/30/2013	No	No		1 Month Early
109	Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3	8/31/2014	2/28/2014	No	No		6 Months Early
110	Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2	9/30/2013	8/31/2013	No	No		1 Month Early
111	Place First Nuclear Concrete for Unit 3	8/1/2013	8/1/2013	No	No		
112	Set Unit 2 Steam Generator	9/9/2013	1/6/2014	No	No		Delayed 4 Months
113	Main Transformers Ready to Ship - Unit 2	9/30/2013	6/30/2013	No	No		3 Months Early

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	3/2/2012	No	No		Delayed 3 Months
116	Set Unit 2 Pressurizer Vessel	1/24/2014	5/19/2014	No	No		Delayed 4 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	6/30/2015	No	No		
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	7/14/2014	No	No		Delayed 4 Months
121	Steam Generator Contractor Acceptance of Equipment At Port of Entry - Unit 3	4/30/2015	1/31/2015	No	No		3 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	7/18/2014	No	No		Delayed 3 Months

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	Outside 18 - 24 Month Contingency?	Impact to Substantial Completion Date?	Actual Completion Date	Deviation from Order 2010-12
124	Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3	6/30/2015	8/31/2015	No	No		Delayed 2 Months
125	Main Transformers Ready to Ship - Unit 3	9/30/2014	6/30/2015	No	No		Delayed 9 Months
126	Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3	12/31/2014	6/30/2014	No	No		6 Months Early
127	Start Electrical Cable Pulling in Unit 2 Auxiliary Building	12/26/2014	4/23/2015	No	No		Delayed 4 Months
128	Complete Unit 2 Reactor Coolant System Cold Hydro	8/3/2015	6/12/2015	No	No		2 Months Early
129	Activate Class 1E DC Power in Unit 2 Auxiliary Building	3/5/2015	11/13/2014	No	No		4 Months Early
130	Complete Unit 2 Hot Functional Test	9/21/2015	9/21/2015	No	No		
131	Install Unit 3 Ring 3 for Containment Vessel	7/30/2015	4/14/2015	No	No		3 Months Early
132	Load Unit 2 Nuclear Fuel	10/28/2015	12/16/2015	No	No		Delayed 1 Month
133	Unit 2 Substantial Completion	4/1/2016	4/1/2016	No	No		

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	6/15/2015	No	No		3 Months Early
135	Set Unit 3 Steam Generator #2	12/22/2015	9/11/2015	No	No		3 Months Early
136	Set Unit 3 Pressurizer Vessel	5/16/2016	8/1/2016	No	No		Delayed 2 Months
137	Complete Welding of Unit 3 Passive Residual Heat Removal System Piping	6/20/2016	4/20/2016	No	No		2 Months Early
138	Set Unit 3 Polar Crane	7/18/2016	6/5/2016	No	No		1 Month Early
139	Start Unit 3 Shield Building Roof Slab Rebar Placement	1/16/2017	10/15/2016	No	No		3 Months Early
140	Start Unit 3 Auxiliary Building Electrical Cable Pulling	4/6/2017	2/22/2017	No	No		1 Month Early
141	Activate Unit 3 Auxiliary Building Class 1E DC Power	6/9/2017	4/18/2016	No	No		14 Months Early
142	Complete Unit 3 Reactor Coolant System Cold Hydro	1/1/2018	8/23/2017	No	No		4 Months Early
143	Complete Unit 3 Hot Functional Test	2/15/2018	5/17/2018	No	No		Delayed 3 Months

Key:	Milestones Not Completed	Completed Prior to Q4-10	Current Quarter	Scheduled to Be Completed Q1-11

Activity Number	Milestone	Completion Date Approved in Order 2010-12	Scheduled Completion Date as of Q4-10	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	7/19/2018	No	No		
145	Begin Unit 3 Full Power Operation	10/31/2018	10/23/2018	No	No		
146	Unit 3 Substantial Completion	1/1/2019	1/1/2019	No	No		

Notes:

White highligting represents Future or Historical Milestones that have not been completed.
Grey highlighting represents Future or Historical Milestones that were completed prior to the 4th Quarter 2010.
Yellow highlighting represents those Milestones that are scheduled to be or have been completed during the 4th Quarter 2010. 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 1st Quarter 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 C

Construction Site Pictures


CB&I PADS
10/5/10

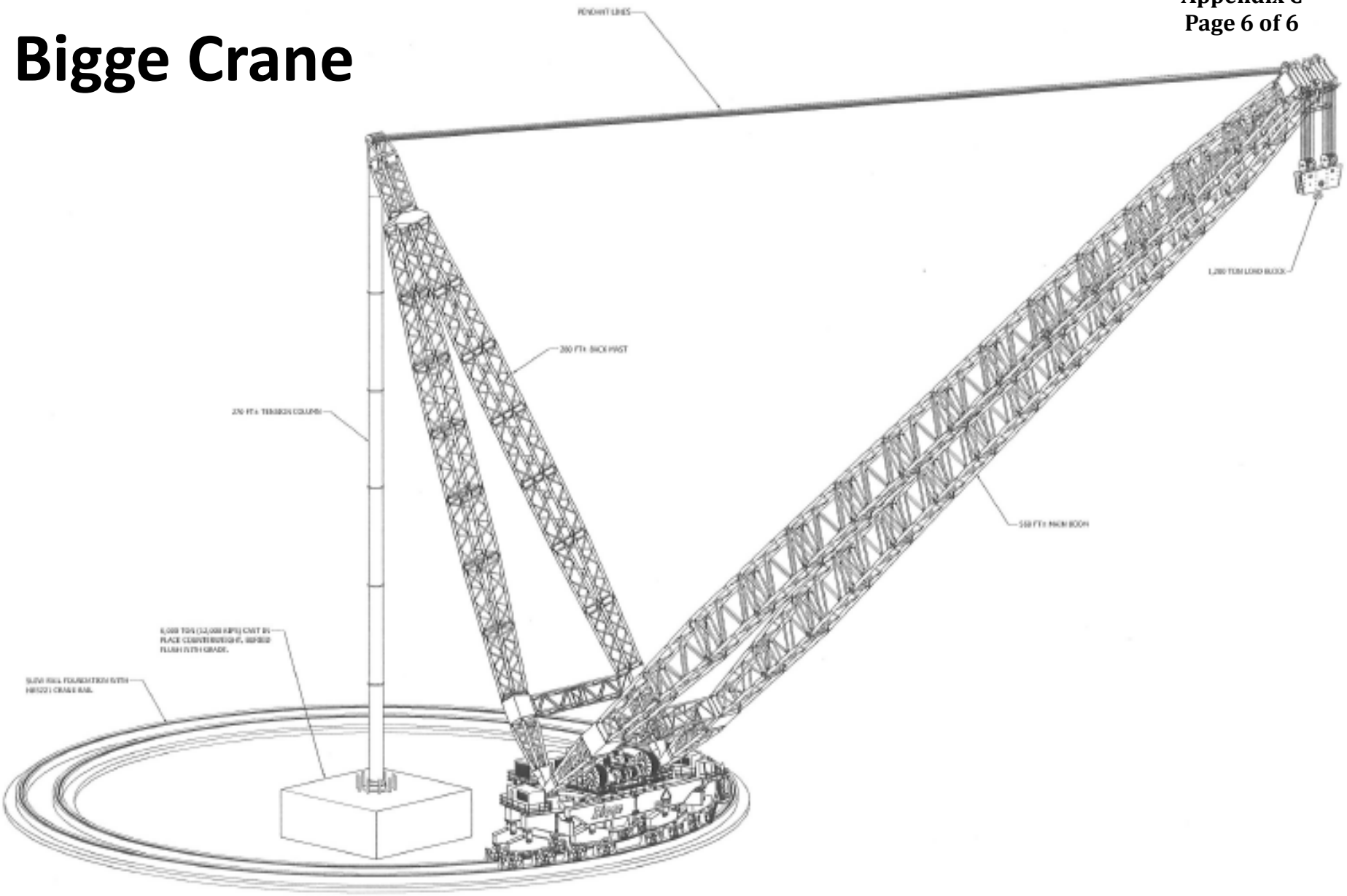

BLDG 9 NORTH SIDE EXTERIOR
10/5/10

TABLE TOP DEVELOPMENT

Switchyard Support Foundations

Switchyard Equipment Staging Area

Bigge Crane


PENDANT LINES
1,200 TON LOAD BLOCK
200 FT± BACK MAST
210 FT± TIMBER COLUMN
510 FT± MAIN BOOM
6,000 TON (12,000 KIPS) CAST IN PLACE COUNTERWEIGHT, SERVED FLUSH WITH GRADE.
SLEW RING FOUNDATION WITH 180'(2) CRANE RAIL

Appendix D

ACRS Correspondence

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

December 13, 2010

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

SUBJECT: REPORT ON THE FINAL SAFETY EVALUATION REPORT ASSOCIATED WITH THE AMENDMENT TO THE AP1000 DESIGN CONTROL DOCUMENT

Dear Chairman Jaczko:

During the 578th meeting of the Advisory Committee on Reactor Safeguards (ACRS), December 2-4, 2010, we reviewed the NRC staff's Advanced Final Safety Evaluation Report (AFSER) for the pending AP1000 Design Certification Amendment (DCA) application. The amendment is to be reflected in a revision to the AP1000 Design Control Document (DCD). The amendment involves changes to Tier 1 information, and its approval will require rulemaking. We had a number of subcommittee and full committee meetings to review the technical aspects of the amendment. During these meetings, we had the benefit of discussions with representatives of the NRC staff, Westinghouse Electric Company (WEC), and members of the public. We also had the benefit of the documents referenced.

CONCLUSION AND RECOMMENDATION

The changes proposed in the AP1000 DCA maintain the robustness of the previously certified design. We conclude that there is reasonable assurance that the revised design can be built and operated without undue risk to the health and safety of the public. This conclusion is contingent on the results of our concurrent reviews of the aircraft impact assessment and long-term core cooling issues which will be discussed in separate letters.

This conclusion relies in part on information and commitments provided by WEC during the course of our meetings which have not yet been confirmed to be included in the DCA application. This information and commitments are noted in the discussion following, and the staff should ensure they are appropriately documented as part of the DCA.

BACKGROUND

For its initial design approval and certification of the AP1000 design, the NRC issued NUREG-1793, "Final Safety Evaluation Report Related to Certification of the AP1000 Design," in September 2004 and published the proposed design certification rule on April 18, 2005. In December 2005, the NRC staff evaluated the conforming Revision 15 to the AP1000 DCD in Supplement 1 to NUREG-1793. The NRC published a final rule certifying the AP1000 standard plant design on January 27, 2006.

Thus, the existing AP1000 certification rule is reflected in DCD Revision 15. Revision 18 was submitted by WEC in a letter dated December 1, 2010, and it includes changes identified in Revision 16, submitted May 26, 2007, and in Revision 17, submitted September 22, 2008, as well as those changes made subsequent to submittal of Revision 17 which are identified in the AFSER, Chapter 23.

In addition, WEC submitted letters to supplement its DCA application dated October 26, November 2, and December 12, 2007, as well as January 11, and 14, 2008. Finally, NuStart Energy Development, LLC and WEC submitted a number of technical reports (TRs) for review. TRs typically address a topical area, such as the design of a component, structure, or process, in support of the AP1000 design.

The DCA application proposes to incorporate changes in the AP1000 certification rule reflecting the following:

- Design standardization, which was enhanced by elimination of numerous combined license (COL) open items currently in the existing rule.
- New regulatory requirements, including requirements related to aircraft impact. (As previously noted, review of compliance with the aircraft impact requirements will be discussed in a separate letter).
- Design finalization, which was required to produce construction drawings and procurement specifications. This includes reduced reliance on design acceptance criteria (DAC).

Significant changes proposed in the DCA application include the following:

- Redesign of the shield building to use a modular, steel concrete composite (SC) structure, replacing the existing reinforced concrete (RC) design. The redesign reduces passive heat removal air flow and affects seismic, aircraft impact, and other loading analyses.
- Redesign of the Reactor Vessel Support System to increase stiffness.
- Increase in the range of foundation soil conditions considered.
- Closure of four digital instrumentation and control (DI&C) DAC, with only one remaining open. Numerous I&C changes were made to reflect design evolution, such as addition of a reactor trip function, implementation of a rod withdrawal prohibit, and modification of the containment isolation logic for the Component Cooling System.
- Closure of four human factors engineering (HFE) DAC, with none remaining open.
- Modification of the reactor coolant pump (RCP) design, including an increase in its rotational inertia.
- Addition of a flow skirt at the inlet to the reactor vessel lower plenum.
- Redesign of the Steam and Power Conversion Systems.

Our review of the DCA application began with a status review by the Full Committee during the 562nd meeting in May 2009. Subsequently, our AP1000 subcommittee held 12 meetings, totaling 21 days of meetings, as listed in the appendix to this letter.

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.

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 impact[1]; 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.

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.

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)

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)

-6-

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)

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Appendix E

Shaw Modular Solutions Correspondence

January 24, 2011

Mr. Jack H. Martin
Senior Vice President, North American Operations
Shaw Fabrication & Manufacturing Group, Shaw Modular Solutions, LLC
3191 West Lincoln Road
Lake Charles, LA 70605

SUBJECT: NRC VENDOR INSPECTION OF SHAW MODULAR SOLUTIONS (SMS) APPENDIX B TO 10 CFR PART 50 QUALITY ASSURANCE AND 10 CFR PART 21 PROGRAMS AT THE SMS LAKE CHARLES, LA, FACILITY

Dear Mr. Martin:

This letter documents the outcome of an NRC vendor inspection conducted on January 10 through January 12, 2011, at the Shaw Modular Solutions (SMS) facility in Lake Charles, LA. The NRC inspection was terminated early due to the current status of activities at SMS. Therefore, an inspection of the effective implementation of the Appendix B to 10 CFR Part 50 (Appendix B) and 10 CFR Part 21 programs was not feasible. An inspection report will not be issued.

Although the inspection ended prematurely, the NRC inspection team gained valuable insights regarding the technical and programmatic challenges that SMS is currently facing. Accordingly, we request that SMS respond to this letter addressing the following:

1. a description of the technical and programmatic challenges that SMS has identified during its self-assessment conducted in December 2010;

2. the proposed corrective actions that SMS plans on implementing to address the technical and programmatic challenges;

3. the date SMS expects to be in full production of structural and mechanical AP1000 sub-modules and;

4. the expectant date of the first shipment of AP1000 sub-module(s).

Based on your letter, the NRC will plan a future inspection at your facility to verify the implementation of the SMS Appendix B and 10 CFR Part 21 programs and to assess the effectiveness of your corrective actions.

Please provide a written response within 30 days from the date of this letter in accordance with the instructions specified below. We will consider extending the response time if you show good cause for us to do so.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response, (if applicable), should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request that such material is withheld from public disclosure, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If Safeguards Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

Sincerely,
/RA/

Juan D. Peralta, Chief
Quality and Vendor Branch 1
Division of Construction Inspection and
Operational Programs
Office of New Reactors

Docket No. 99901401

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The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions

February 22, 2011

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Shaw Modular Solutions (SMS) response to NRC letter to SMS dated January 24, 2011; regarding NRC Vendor Inspection of SMS conducted from January 10 to 12, 2011

Reference: Docket number 99901-401

This letter and its Enclosure provide the SMS response to the subject letter. As requested, information is provided regarding the technical and programmatic challenges that SMS has identified, plus the proposed corrective actions that SMS plans on implementing to address those challenges.

The technical and programmatic challenges that SMS has identified since initiation of fabrication activities in May 2010 are in the areas of:

- Quality Assurance
- Training
- Corrective Action
- Management Oversight
- Welding
- Material and Nonconforming Material Control

Actions have been taken to assemble and trend the challenges that have been identified, plus the feedback received from Shaw Nuclear Services (SNS) and their AP1000 clients. Analysis of the feedback identified a commonality of issues which facilitated the development of an action plan to address the challenges. The actions are related to the following general topics:

- Nuclear Safety Culture
- Quality Assurance
- Nuclear Fundamentals
  - Corrective Action Program
  - Procedure Quality, Use and Adherence
  - Human Performance
  - Training
  - Management Oversight

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The Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions

February 22, 2011

Subject: SMS response to NRC letter dated January 24, 2011, cont'd

- Process Improvement
  - General
  - Welding
  - Work Control
  - Material Control

SMS is committed to enhancing and maintaining a sustainable nuclear safety culture and regulatory compliance program that demonstrates our understanding of regulatory compliance and meets or exceeds the appropriate regulations.

In addition to the above-requested information, the subject letter requested that SMS provide dates regarding when SMS expects to be in full production of structural and mechanical AP1000 sub-modules, and the expected date of the first shipment of AP1000 modules.

SMS expects to be at a high level of production of structural modules in early June 2011. SMS expects that shipment of the first structural sub-module will occur the end of June 2011. Fabrication of mechanical modules will follow the structural modules. SMS will provide an update when the schedule for the mechanical modules is finalized. If schedule changes are necessary, SMS will promptly notify the NRC.

Several challenge areas have been identified as a result of recent assessments, audits and program implementation. SMS is committed to the establishment and maintenance of a nuclear safety culture and regulatory compliance program that demonstrates our understanding of regulatory compliance and meets or exceeds the appropriate regulations.

SMS appreciates the resources necessary to establish, and the efforts required to implement, a regulatory compliance program that demonstrates the level of effectiveness expected for the scope of supply we are providing to the nuclear industry. We recognize the importance of having a management team that possesses nuclear industry experience, and/or is supplemented by other experienced individuals until such time as that experience is acquired internally. We are taking, and will continue to take, actions in that area. We recognize and embrace an environment of continuously rising standards and process improvement. We have taken, are taking and will continue to take those actions needed to elevate our program implementation to the level of effectiveness appropriate to the fabrication of AP1000 modules.

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February 22, 2011

Subject: SMS response to NRC letter dated January 24, 2011, cont'd.

SMS regrets that the status of activities at the time of the NRC inspection did not facilitate completion of the inspection as planned. We trust that the information provided in this letter and its Enclosure is satisfactory. If any further information or clarification is needed, please do not hesitate to contact me.

Very truly yours,

Joseph L. Ernst
Executive Vice President
Shaw Modular Solutions

Enclosure

C: D. Chapman
J. H. Martin
M. Moser
R. Rehkugler
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Enclosure to SMS response to NRC letter dated January 24, 2011

This Enclosure provides the Shaw Modular Solutions (SMS) reply to items 1 and 2 of the United States Nuclear Regulatory Commission (NRC) letter dated January 24, 2011. NRC Request items 3 and 4 are addressed in the letter transmitting this enclosure.

NRC REQUEST

1. (Provide) a description of the technical and programmatic challenges that SMS has identified during its self-assessment conducted in December 2010.

SMS RESPONSE

In addition to the self-assessments conducted in December 2010, multiple audits and assessments were performed in 2010, pertinent conclusions of which are included in this response for completeness. SMS identified one issue related to welding capabilities as a technical challenge area. All other challenge areas are considered to be programmatic in nature. The corresponding corrective actions for each issue are addressed in the response to NRC Request item 2.

A) Quality Assurance

Through various self-assessments and external reviews, SMS has determined that the Quality Assurance (QA) organization was not sufficiently independent from the execution of program activities. Members of the QA organization were frequently relied on to develop and implement processes and procedures. The skills and knowledge level of some members of the QA organization require improvement.

B) Training

Assessments, Corrective Action Reports (CAR) and other sources of input identified weaknesses in the SMS training program. Effectiveness improvement in several areas, including QA, Quality Control (QC), welding and material control, are needed.

C) Corrective Action Program (CAP)

The CAP had not been effectively implemented with regard to timely issue identification and resolution, resolution adequacy, and determination of the cause(s) for significant conditions adverse to quality.

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Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

D) Management Oversight

The level and effectiveness of management oversight of daily activities was determined to be inadequate based on the quality of work, including fabrication and process development activities, performed to date.

E) Welding capabilities

A self-assessment concluded that improvement was needed with regard to the welding skills and technical knowledge of a number of SMS welding personnel.

F) Material and Nonconforming Material Controls

An internal audit identified that material storage areas were not clearly marked, including differentiation of nonconforming materials. Additionally, controls for tracking receipt and use of materials needed improvement.

NRC REQUEST

2. (Provide) the proposed corrective actions that SMS plans on implementing to address the technical and programmatic challenges.

SMS RESPONSE

After the recent NRC inspection at SMS, actions were taken to assemble and trend the challenges that had been self-identified or raised by other entities. These analyses resulted in the development of an action plan to address the challenges. The following topics are the focus of the plan.

- Nuclear Safety Culture
- Quality Assurance
- Nuclear Fundamentals
  - Corrective Action Program
  - Procedure Quality, Use and Adherence
  - Human Performance
  - Training
  - Management Oversight

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Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

- Process Improvement
  - General
  - Welding
  - Work Control
  - Material Control

The goal of the action plan is to ingrain nuclear industry expectations and high standards into the workforce and processes. The plan is designed to ensure regulatory margin above minimum compliance. The status of this plan is updated routinely, with periodic status reports to SNS and its AP1000 clients.

A comprehensive listing of actions related to each of these categories has been developed and populated with owners and specific due dates. The action items have been prioritized to support the production and shipment dates referenced in this letter. The actions provided below are correlated to the challenge areas identified in the response to NRC Request item 1 above.

A) Quality Assurance

1. Establish independence of the QA and QC organizations by realigning organizational responsibilities.
2. Revise the SMS QA Manual and implementing procedures to reflect organization and process changes.
3. Determine the need for additional resources.

B) Training

1. Establish training standards and expectations for each department.
2. Ensure SMS management is familiar with the relevant lessons learned that are identified in NUREG-1055, "Improving Quality and the Assurance of Quality in the Design and Construction of Nuclear Power Plants", and is committed to avoiding the concerns raised in NUREG-1055.
3. Improve the process and tools in place to ensure ongoing personnel training effectiveness.
4. Enhance SMS personnel understanding of the importance of training and ensure that they are fully capable of and committed to effectively administering the training.
5. Develop performance metrics to assess the effectiveness of SMS training.
6. Improve the technical process/procedural knowledge and welding skills of SMS welding personnel.

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Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

7. Improve the methods by which requisite skills and knowledge are identified, evaluated, imparted and measured for existing and future/incoming welding personnel.
8. Conduct additional training to improve the skills and knowledge of existing and future/incoming QA management and staff personnel.
9. Reinforce and confirm QC personnel understanding of the expectations and standards applicable to working in a nuclear safety related work environment.
10. Train all employees on expectations and use of the CAP.

C) Corrective Action Program (CAP)

1. Transfer "ownership" and administration of the CAP from the Independent Oversight organization to the Operations organization.
2. Deploy new CAP process attributes (e.g., electronic tracking, trending program, Corrective Action Review board, performance metrics) to improve the level of CAP sophistication and effectiveness.
3. Resolve the Significant Conditions Adverse to Quality (SCAQ) that have been previously identified.
4. Perform a common cause evaluation related to current and past SCAQs.
5. Implement the CAP in a manner to ensure that SMS work processes receive ongoing scrutiny to identify and implement identified improvements, contributing to identifying potential problems before they manifest themselves.
6. Revise the CAP process to allow entry of conditions by any employee.

D) Management Oversight

1. Reinforce, on an ongoing basis, the expectations of a nuclear safety related work environment and the need to utilize and adhere to established procedural requirements.
2. Enhance the amount and quality of SMS management/supervisory oversight of daily work activities.
3. Develop, issue and use a procedure for pre-job briefings, including standard criteria, actions, responsibilities, schedule, communication and quality expectations.

E) Welding capabilities

1. Develop, issue, and use a SMS Welding Manual that addresses applicable Code requirements.

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Enclosure to SMS response to NRC letter dated January 24, 2010, cont'd.

2. Develop, issue, and use a listing of fabrication standards and acceptance criteria for welders, fitters and supervisors.
3. Update the Weld Log portion of the Shop Traveler to include documentation of all weld-related activities.
4. Develop, issue, and use a Standard Repair procedure for welding activities.

F) Material and Nonconforming Material Controls

1. Revise labeling, signage, and access controls in material storage locations to support differentiation of accepted and nonconforming material and revise governing procedures accordingly.
2. Revise marking and tagging requirements of materials comprised of multiple parts to assure effective accountability and traceability.

Shaw Group Inc F&M SMS FRE
Shaw Modular Solutions
3191 W. Lincoln Rd.
Lake Charles, LA 70605
337-562-3439 Main 337-562-3490 Fax

March 8, 2011

Mr. Joseph L. Ernst, Executive Vice President
Shaw Modular Solutions
3191 W. Lincoln Rd.
Lake Charles, LA
70605

SUBJECT: SHAW MODULAR SOLUTIONS RESPONSE TO NRC LETTER DATED JANUARY 24, 2011 (NUCLEAR REGULARTORY COMMISSION INSPECTION 99901401/2011-201)

Dear Mr. Ernst:

Thank you for your February 22, 2011, letter in response to the U.S. Nuclear Regulatory Commission (NRC) request for information. The NRC conducted a vendor inspection on January 10 through January 12, 2011 at the Shaw Modular Solutions (SMS) facility in Lake Charles, LA. As stated in the NRC letter dated January 24, 2011, the NRC did not issue an inspection report based on the early inspection exit, but rather requested information on some of the technical and programmatic challenges that SMS is currently working to correct.

We have reviewed your letter and find that it is responsive to our request for information. We have no further questions or comments at this time and may review the implementation of your corrective actions during a future NRC staff inspection to determine whether full compliance has been achieved and maintained.

Please contact Ms. Kerri Kavanagh at (301) 415-3743 or via electronic mail at Kerri.Kavanagh@nrc.gov, if you have any questions or need assistance regarding this matter.

Sincerely,
/RA/

Juan D Peralta, Chief
Quality and Vendor Branch A
Division of Construction Inspection
& Operational Programs
Office of New Reactors

Docket No. 99901401

DISTRIBUTION:

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OFFICE	NRO/DCIP/CQVA	NRO/DCIP/CQVA:BC
NAME	KKavanagh	JPeralta
DATE	03/8/2011	03/8/2011

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Appendix F

NRC Press Release

NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION
Office of Public Affairs Telephone: 301/415-8200
Washington, D.C. 20555-0001
E-mail: opa.resource@nrc.gov 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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