V. C. Summer - Units 2 & 3  
**Santee Cooper Recommendations**

As changes are occurring to the ownership and management of the Consortium, the Owners have an opportunity to make significant correction to the course of the nuclear construction Project. During the transition, there is a window for the Owners to impose Project changes designed to offset current critical path material delays and poor construction performance attributed to inadequate project integration and management, incomplete engineering, and rework associated with ongoing design alteration.

Over the past seven years, the Consortium’s inability to coordinate itself and complete the engineering, procurement, and construction work necessary to deliver this project on a schedule has come at a high cost to the Owners. For each month of project delay, Santee Cooper estimates its share of project cost to be approximately $35 million.\(^1\) New project management and leadership are needed to overcome these challenges.

The engineering and procurement challenges that continue to face Westinghouse (WEC) have significant impacts upon the Owners. In 2015, only 3.7% direct craft progress (0.31% per month) was earned towards completion of the combined units. The year closed with overall direct craft construction at 18.7% complete. With 81% of the work to go, the monthly construction progress must increase to around 2.5% if contract dates are to be achieved. Failure to realize a significant and sustained increase on this metric over the next six months will invariably result in more project delay.

Considering the Consortium’s record, nearly three years of delays, and the risk associated with not achieving the production tax credits, it is incumbent upon the Owners to employ increased and magnified oversight to ensure that

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\(^1\) Based on a Santee Cooper internal estimate completed Nov 2014 for a 27 month delay on Unit 2 (delay from March 2017 to June 2019) and a 25 month delay on Unit 3 (delay from May 2018 to June 2020). Estimate includes added costs associated with fuel & replacement power, owners cost, and debt service.
WEC and Fluor will properly coordinate efforts to resolve the challenges facing the Project. Intrusive verification of the work by trained project management professionals would help hold the Consortium accountable, and provide more timely and accurate Project status information for the Owners going forward. For this purpose, Santee Cooper makes the following recommendations:

1. Construction Milestone Payment Schedule

Development of the construction milestone payment schedule is vitally important to the Owners to drive schedule adherence and Consortium accountability, to be accomplished in the following way:

- Advise all parties that future payments for work will be made according to the milestone payment schedule without exception
- For avoidance of confusion, payment for construction work will not occur until satisfactory completion of each milestone
- Retain a third party engineering, procurement, and construction firm with personnel experienced in large construction project scheduling and controls by March 31, 2016 to advise and assist Owners with the development of an effective milestone payment schedule.

2. Project Evaluation and Assessment by Owners

- The Owners will take steps to obtain stakeholder and interested party assessments with observations and recommendations on issues impacting all Project functional areas including: project management, engineering and licensing, procurement, construction and project controls, and startup by March 15, 2016.
- Owners' management will complete a detailed review of the assessments and develop an action plan and schedule to implement valid recommendations by April 30, 2016.
3. **Quarterly Meetings with Toshiba / WEC / Fluor**
   - Schedule and hold quarterly meetings with Toshiba, WEC, and Fluor management to gauge executive commitment to Project and to discuss progress and issues. Owners’ executive management will develop and publish a meeting agenda one week in advance of each quarterly meeting. Hold first meeting prior to Owners joint meeting on March 21, 2016.

4. **Evaluation of Fixed Price Option**
   - Evaluate Fixed Price Option on a schedule that will support a Public Service Commission (PSC) ruling by October 1, 2016. This schedule will allow time for the Santee Cooper Board to make a determination following the PSC ruling and prior to the November 1, 2016 deadline.

5. **Professional Oversight of EPC Agreement**
   - EPC manager: Retain EPC managerial and project controls expertise responsible for independently measuring and analyzing contract performance and for making recommendations to best influence Consortium behavior, accountability and the successful outcome of the Project. On-board EPC managerial staff by June 15, 2016.

There are multiple ways to fulfill this need. The following suggestions are offered for discussion:

   - **Suggestion 1**: SCE&G hire an executive EPC professional, reporting directly to the SCE&G CEO but also answering to the Santee Cooper CEO, responsible for this work. The new executive would be a career professional with extensive experience in complex, new-build generation projects and be responsible for hiring other EPC and project controls expertise as needed. The new executive’s compensation would be based solely on project performance and would include performance based incentives and penalties to promote effectiveness of leadership. The CEOs would meet at a
minimum every other week to receive a report from the EPC professional.

- Suggestion 2: Retain a qualified EPC firm, including executive leadership and support personnel, to provide the needed services. EPC executive to report to Owners’ CEOs in a manner similar to above. Contract for EPC firm should include performance based incentives to promote effectiveness of the firm.

- Engineering: EPC manager to obtain clear visibility of the maturity and completeness of all project engineering and make practitioner recommendations to best influence the Consortium’s performance. Work should begin with analyzing the following:
  - WEC engineering scope
  - Stone & Webster engineering scope
  - Design constructability / change issues


- Procurement: EPC manager to obtain clear visibility of all project procurement issues including critical path material deliveries, analyze supply-chain performance, and make practitioner recommendations that would best influence delivery of material by scheduled need dates. Work should begin with analyzing the following:
  - Structural modules – domestic supply
  - Structural modules – foreign supply
  - Shield building wall panels
  - Shield building - air inlet, tension ring, roof structure
  - General procurement issues – equipment and commodities

  Provide initial report by Sep 30, 2016.

- Construction: EPC manager to independently review and assess construction performance by plant functional areas including productivity factors, labor ratios and all issues affecting direct craft progress. EPC
manager to make practitioner recommendations that would best influence the monthly progress rate needed to achieve contract completion dates. Provide initial report by Sep 30, 2016.

- Project Schedule: EPC manager to independently review and assess the achievability of the Project Schedule including integration of all engineering, procurement, and construction inputs, assumptions, constraints and logic ties by Sep 30, 2016.

- Project Metrics: EPC manager to evaluate current project metrics and work with Consortium to develop accurate and consistent industry standard metrics to track actual vs planned completion of each generating unit by functional area and major plant system. EPC manager to develop an executive level dashboard for monthly tracking of all key project metrics by Oct 15, 2016.

- Quarterly Meetings with Toshiba / WEC / Fluor: EPC manager to attend meetings and provide independent assessment of Consortium’s progress towards resolving the issues that face the Project beginning Q4 2016.