

## OTC Nuclear Review Committee 8-15-2012 Meeting Summary

<b>Committee Chair</b>	
Dominic Gregorio (Acting)	SWRCB
<b>Committee Members</b>	
David Asti	Southern California Edison
David Barker	San Diego Regional Water Board
Melissa Jones	CEC
Jim Caldwell	CEERT
Mark Krausse	Pacific Gas and Electric
Peter Von Langen	Central Coast Regional Water Board
Rochelle Becker	Alliance for Nuclear Responsibility
Tom Luster	California Coastal Commission
<b>Staff in Attendance</b>	
Laurel Warddrip	SWRCB
Marleigh Wood	SWRCB
Joanna Jensen	SWRCB
<b>Public in Attendance</b>	
Robert J Budnitz	LBNL (DCISC)
Partho Raysircar	Bechtel Power Corp
Doug Dismukes	Bechtel Power Corp
Bryan Cunningham	Pacific Gas and Electric
Peter Wilkens	SCE
Robert Heckler	SCE
Sean Bothwell	CCKA
John Geesman	A4NR

**1. Welcome Introductions and Updates**  
No Updates

**2. Overview of agenda**  
Remove review and approval of meeting notes - July 26<sup>th</sup> minutes to be circulated, posted and then approved with comments from Committee, any further revisions to minutes can be addressed at the September meeting.

**3. Diablo Canyon Independent Safety Committee (DCISC) Discussion**  
Have a 23 year charter to review operation and safety at Diablo Canyon Nuclear Power Plant. Reports are public and the committee consists of 3 members with overlapping 3 year terms each appointed by State of California. DCISC will be reviewing the outcomes from the Committee and is available to provide input on specific questions that may arise about DCP, if sent to them by the utilities (SCE and PG&E).

**4. Discussion on the Comments from the Committee**

**Closed Cycle Cooling Water Technologies (CCCWT)**

DCPP does not have enough recycle water for wet cooling, SONGS has enough sources potentially but no commitment yet from the suppliers (not guaranteed). Local wastewater plants may provide water, but would also need to be treated at the nuclear plant, if this is considered/feasible as a source of reclaimed water for CCCWT.

Desalination Solutions – Bechtel was not required to evaluate desalination as a stand-alone technology in the Scope of Work. CCCWT were disqualified for DCPD and for SONGS due to lack of steady water supply (absent of using desalination technologies). Desalination could provide the makeup water for DCPD/SONGS, thereby allowing some form of CCCWT to go to Phase 2 for evaluation. Desalination could use less water than what the nuclear plants intake right now if designed to provide water with the highest [pm] allowable for the nuclear plant operation, not to a drinking standard.

Technology options need to be evaluated for 100% desalination for make-up water and for a percentage of desalination water used in combination with reclaimed water.

Brine disposal from a desalination operation would also need to be considered by Bechtel, since this may be a permitting issue. The brine would have to be discharged in compliance with current permitting for such operations.

Condenser pressure could be a safety issue with water management in the event of a power outage. Bob Heckler: cooling tower options for SONGS using more land from Camp Pendleton (Northern) discussed, currently this land is not leased to SONGS from Camp Pendleton and goes beyond the current property boundary. Some issues discussed were the vernal pools (fairy shrimp)/protected areas and the use of this land. Camp Pendleton voiced that leasing of more land would be unlikely when it was discussed with Bechtel. SONGS could relocate some buildings, and not need more land added to the lease. Bryan Cunningham stated that mountains potentially could be altered to accommodate cooling structures, but this would be an elaborate solution.

### **Offshore Wedge Wire Screens**

Issue with biofouling for screens smaller than 6-8mm screen, but Impingement and Entrainment (I&E) requirements in the Policy may not be reduced if mesh not the sized for 1-2mm. Bechtel described that I&E may be decreased with screens at 6-8mm if the current/velocities are reduced enough coming across the screening devices. Bechtel needs to consider screen sizes of 1-2mm, and discuss what they did evaluate on the various screen sizes. The committee would like to see an effectiveness curve on the reduction of I&E vs the screen sizes evaluated. Studies also have shown that biofouling does not occur at the smaller (1-2mm) screen sizes (John Steinbeck, Tenera research 805-541-0310) Bechtel needs to discuss this technology with John at Tenera and evaluate smaller screen sizes for Phase 2.

- **Lunch** -

### **Offshore Wedge Wire Screens (cont)**

Bryan Cunningham – Is encrustacean/cropping an issue? It is sure to occur. Intake tunnels are oversized to include this issue in the final intake volume, this (cropping) can decrease survivability in the intake structures though.

Dominic – The Policy assumes zero survivability upon entrainment/entrance into the intake structure so encrustacean/cropping does not affect the mortality rates that the Policy accounts for (Policy assumes 100% mortality at intake).

Issues with Kelp deposition on screens from Kelp beds. Bechtel will look into further.

## **Analysis of Safety in Phase 2**

Reliability is a huge issue when considering different technologies, concerns with the secondary heat sink. This is a Phase 2 topic that will be discussed in great detail in the upcoming months, David Asti did not initiate the discussion on the ultimate heat sink.

Coastal Commission Comments: necessary changes to public access may be requires since current permit does not allow access to the public being blocked, not fatal but needs to be discussed.

## **Source Water Substrate Filtering Collection Systems**

Investigation still going on, outlook is that this will not be feasible for direct cooling at projected flow rates, may be feasible to provide make-up water. This would also be a first of a kind with the operability and maintenance associated with these Ranney Wells. Ranney wells will be discussed in Phase 2 (esp. for SONGS), however Bechtel recommends this technology stays in Phase 1.

## **Variable Speed Cooling Water Pumping Systems**

This technology does not come close to meeting the Policy as a standalone technology. This could be considered along with other technologies, but cannot go lower than a Drating of 80%.

## **Deep Water Intakes and Offshore Intakes**

Bryan Cunningham: Report conflicts - Near offshore intakes and deep water intakes, not going to Phase 2, however the Phase 1 report needs to reflect that does not meet Entrainment and is a fatal design flaw for both types of intakes (both infeasible for Entrainment design).

Committee agrees that for both DCPD and SONGS both intake relocation options (deep water intakes and offshore intakes) stop at Phase 1.

## **Other Major Comments from Committee**

David Asti: feels like Bechtel may of not met the Scope of Work entirely

## **5. Closing/next Meeting**

### **Timeline/Next Steps**

Bechtel respond to comments by end of August ► provide response to comments to utilities ► utilities send to SWRCB ► SWRCB send to the Committee ► SWRCB post the responses ► ► Final Report from Bechtel September 7, 2012 ► September meeting provide final resolution to outstanding issues ► November meeting kick off Phase 2.

## **Technologies Summary**

CCCWT – **Yes** viable technologies in this category going to Phase 2

Operational Strategies to Reduce I & E – **No** this technology stays in Phase 1

Deep Water Offshore Intakes - **No** (technology stays in Phase 1)

Source Water Substrate Filtering Collection Systems - **No** (technology stays in Phase 1)  
Inshore Fine Mesh - **Yes** technology goes to Phase 2  
Offshore Wedge Wire Screens – being re-evaluated for feasibility of 1-2mm screen size  
(**pending** for Phase 2)  
Intake Relcoation - **No** (technology stays in Phase 1)  
Variable Speed Cooling Water Pumping Systems - **No** (technology stays in Phase 1)

**Next Meeting**

September 18, 2012 1-4 pm to discuss final Phase 1 Issues. Meeting in November (TBD)  
to kickoff Phase 2.

(Meeting date cancelled for September)

6. Adjourn