

RCNFPP Draft Minutes 12/18/2013 Meeting

Committee Members	
David Asti	Southern California Edison (SCE)
Melissa Jones	California Energy Commission
Mark Krausse	Pacific Gas and Electric (PG&E)
Jim Caldwell	Center for Energy Efficiency and Renewable Technologies
David Barker	San Diego Regional Water Quality Control Board
Sepideh Khosrowjah	California Public Utilities Commission
Tom Luster	California Coastal Commission
Rochelle Becker	Alliance for Nuclear Responsibility (A4NR)
Peter Von Langen (on the phone)	Central Coast Regional Water Quality Control Board
Staff in Attendance	
Jonathan Bishop	State Water Resources Control Board (SWRCB)
Shuka Rastegarpour	SWRCB
Marleigh Wood	SWRCB
Mariela Carpio-Obeso	SWRCB
Paul Hann	SWRCB
Public in Attendance	
Dan Williams	Bechtel Power Corp.
Doug Dismukes	Bechtel Power Corp.
Robert Preston	Bechtel Power Corp.
Natasha Jones	Bechtel Power Corp.
Bryan Cunningham	PG&E
Joan Walter	California Energy Commission
John Geesman	A4NR
Kathy Jones	PG&E
Perf Peterson	Diablo Canyon Independent Safety Committee
Joan Walter	California Energy Commission
Daniel Hirsch	College Ten University of California, Santa Cruz
Robert Budnitz	Diablo Canyon Independent Safety Committee
Damon Moslen (on the phone)	Friends of the Earth

Bill Powers (on the phone)	Powers Engineering
Sean Bothwell (on the phone)	California Coastkeeper Alliance
Eric Wilkins (on the phone)	California Dept. of Fish & Wildlife

Welcome, Introductions and Updates -

Rochelle Becker: Was a follow up made to the Chumash Tribe letter?

Shuka Rastegarpour: An internal Water Board staff meeting was held with the Chumash Tribe representatives to make sure they were looking at the correct maps and that they understood that Bechtel has set aside funding for additional archeological review to be performed. The Chumash Tribe does not endorse the construction on the North side of the site since there are additional Architectural areas in the area that are not necessarily on the maps.

Review and approve Meeting Notes -

August 13, 2013 minutes **approved**

November 21, 2013 minutes **approved**

Bechtel discussion of current technology location -

Doug Dismukes: We picked the locations that follow supplier's recommendation for placing towers. We did not use square towers because suppliers recommended against it. It takes less space and is less subject to recirculation. It was determined that there was not enough space in the south parking lot area to accommodate the towers without significant excavation, the majority of the existing plant infrastructure would have to be relocated, and access to the plant by the staff would be severely impacted during and after construction.

Jonathon Bishop: How often do you take the supplier's recommendation?

Natasha: If we have spacing available, we always take the supplier's recommendation since the performance of the towers is the responsibility of the suppliers, this decision was made in Phase I.

Bechtel alternative technology location assessment -

Jonathon Bishop: How will we perform placement of the cooling towers on the south side?

Doug Dismukes: A lot of excavation would be required on the south side (30-60% of the north side). The main entrance of the plant will be disrupted. NOTE: Bechtel has worked with the suppliers to size the towers with a focus on maintaining the DCP output at a value as close to the design value as is possible.

Mark Krausse: Given that Bechtel's answer is that it is feasible to construct the towers in the southern location, we will need to do the cost and assessment.

Doug Dismukes: If the committee thinks alternative analysis need to be done, we'll do it. Keep in mind that this study was done for the current operation of the plant for this

particular location. The estimate of the south will be according to the same criteria for the North side unless directed otherwise. Would we want to perform an analysis of all 5 technologies in the southern location?

Daniel Hirsch: I don't think that's going to make a difference because it is our opinion that there has been unnecessary cost elevation for the north end and the assessment itself is not credible. I suggest you take this to the Board to determine if the report that Bechtel has produced is credible, and have them decide whether or not to exempt Diablo Canyon.

Mark Krausse: Friends of the Earth's suggestion at the last meeting was to assess placing the towers at the southern end of the facility because it is a more appropriate site, and now you are taking it back and suggesting that it is not necessary anymore? We are trying to determine the best approach to take for addressing Friends of the Earth's comments.

Tom Luster: Let's perform a reasonable range of feasible alternatives and what the implications are of moving forward with the south alternative.

Mark Krausse: We can choose the option that will be the least expensive, or throw out the options that we know are going to be the most expensive. This will provide a complete cost range analysis to present to the board.

6 options based on freshwater cooling towers (with a desalination plant):

1. Revisit each of the 2 tower options for the south; same conceptual design and cost estimates as the north
2. Same as 1 but with rectilinear towers instead of cylindrical
3. Check if Clear Sky technology is technically feasible
4. If yes to 3, an estimate will be done for this also.
5. See if there's an advantage to a combo cooling tower design
6. Finding and quantify relocation (for all above alternatives)

Doug Dismukes: At the direction of the Committee, Bechtel will research the opportunity and availability for salt water cooling towers so that it eliminates the desalination plant option. We will need to investigate if we can obtain PM 10 offsets. If not constraint to PM 10, this may be a cheaper option. The Committee directed that for the purposes of the South lot study, Bechtel should assume that offsets would be available and proceed considering salt water towers. This should result in the least cost option.

- Lunch -

Timeline of Final Report -

Dan Williams: We are projecting a 6 month timing effort plus the cost estimates. Suggestion is to not do the rectilinear towers. Engineering needs to provide detailed designs in order to get the estimate of the costs, this is the critical path.

Committee: Didn't expect it to take 6 months. Should we move forward? This process may generate more questions once we have so many alternative options.

Daniel Hirsch: You must look at the credibility of the report. This process is not going to solve the problem. There are many things contingent on whether permits are obtained. It's better to submit to the Board what Bechtel did. Must consider reduced plant energy output as an option that would allow lower impact. Cost of replacement power would ultimately be less than the capital costs to install large cooling towers.

Jonathon Bishop: There is an option to bring to the Board Bechtel's Report, but considering that the Board has received a letter with a recommendation to perform the southern location, it is in our best interest to do it. We know that the cost is based on excavation, desalination facility, and contingencies factors.

Dan Williams: Recommend to just look at one option and figure out where to go from there.

Jonathon Bishop: Maybe we can look at the hybrid option with saltwater towers. We can go to the Board to present this option too and then see whether we should move forward with other analysis.

Committee: Maybe have a public meeting to have these concerns addressed to the Board publicly? Have them decide what types of analysis to perform?

Bill Powers: I don't believe this option will be much cheaper. You have to look at the range of cells (30, 44, 60) and provide the capital costs and consider increasing the condenser back pressure in order to reduce the tower sizes.

Doug Dismukes: Increasing the condenser back pressure and reducing the number of cells will in fact reduce the number of cells required but it will also severely impact the plant output which is not the premise that Bechtel used for the Phase 1 and 2 efforts.

Committee: The committee may accept an impact on plant output if the cost benefit warrants it. The Committee recognizes that the Bechtel approach was to maximize the output which is consistent with the original task but the resulting cost may require that this approach be revisited.

Dan Williams: We looked at feasibility with current operation of the plant. Should we look at how big of a tower we can put with the most minimal excavation? That will probably be the lowest cost project.

Jonathon Bishop: I will have a briefing with the Board to inform them that the Committee has asked for analysis of these alternatives. I will let them know that I have directed Bechtel to look at what appears to be the lowest cost alternative and ask whether Board members want to move forward with more detailed analysis of low cost option and hold January Board meeting to hear concerns, or, do a full analysis that will take 6+ months. I would like Bechtel and Bill Powers to talk and see if there are additional options that could be considered that evaluate the tradeoff between power generation and cooling tower capital costs.

Doug Dismukes: I would appreciate if Jon is on the call as well.

Next meeting – Sometime in January