



California Energy Commission

Inter-Agency Analysis of Generation and Transmission Options for OTC Mitigation

2009 Integrated Energy Policy Report Workshop
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Purpose of Workshop

- Purpose: Present joint energy agency proposal to stakeholders and begin to gather information from stakeholders to refine implementation details not yet resolved.



Background for Workshop

- The energy agencies (CEC, CPUC, and CAISO) have been actively participating to assist SWRCB staff on OTC mitigation.
- A specific proposal was made to SWRCB staff on May 19, 2009.
- SWRCB published:
 - a draft OTC mitigation policy on June 30, 2009,
 - a substitute environmental document and a notice for a September 16 public hearing on July 15.



Context for Workshop

- SWRCB's June 30, 2009 draft policy established wet cooling towers with sea water make up as the benchmark for power plants.
- Staff believes that installation of wet cooling towers in most older OTC plants is too expensive or infeasible.
- Most OTC plants will retire, or repower, rather than refit cooling technologies for the existing power generation equipment.



Reliability Objective

- Assure that “sufficient” OTC capacity remains on line until replacement infrastructure is developed and becomes operational.
- Sufficient means that resource adequacy requirements for capacity are satisfied:
 - Total resources meet system requirements
 - Local areas meet LCR needs.
- Assure that the mix of existing and new resources has the necessary operational flexibility forward through time as the resource mix evolves.



General Approach

- Improve analytic, planning and permitting coordination among energy agencies.
- Build upon existing processes to develop necessary information and make appropriate decisions.
- Pursue a mix of infrastructure development compatible with state's preferred resource policies, environmental licensing constraints, and GHG emission reduction goals.



General Approach, cont'd

- Provide a preliminary schedule for when OTC plants may no longer be needed as a result of projects in the pipeline and anticipated outcomes of planning and procurement processes.
- Update the Plan periodically as better information becomes available or circumstances change.



Overview of Eleven Steps

- 1) Identify existing studies informing the need for specific OTC power plants to satisfy local reliability.
- 2) Conduct enhanced LCR analyses and other studies to determine OTC plant replacement options
- 3) Energy Agencies review results of steps 1) and 2), devise a “Plan” identifying solutions, and periodically update such a Plan.



Overview of Eleven Steps, cont'd

- 4) SWRCB and regional boards use the Plan
- 5) Energy Commission facilitates allocation of AQMD air credits to facilities that are part of the Plan.
- 6) CPUC modifies IOU procurement guidance to solicit OTC replacements
- 7) ISO modifies its annual transmission planning process to incorporate Plan elements, and identify transmission solutions



Overview of Eleven Steps, cont'd

- 8) Energy agencies update the Plan to encompass proposed projects and provide updated Plan to SWRCB for use in permit revisions.
- 9) Energy agencies monitor progress, keep SWRCB up to speed on changes.
- 10) Energy agencies update the Plan.
- 11) SWRCB updates water discharge permits to be consistent with the Plan.



Step 1- Using Existing Information

- South Bay is an illustration
 - When Otay Mesa is operational (circa Q4 2009), then a portion of South Bay capacity no longer is needed for local reliability
 - When Sunrise Powerlink is energized (circa Q3 2012) then the balance of South Bay is not needed for local reliability
 - Q3 2012 can be the expiration date for South Bay's water permit from reliability perspective



Step 2 – New Analyses

- Sub-step a
 - CEC and CPUC develop scenarios of alternative resource buildouts
 - Start from 33% renewable studies and adapt to encompass all preferred resource additions
 - Match to CEC 2009 IEPR demand forecasts
 - Agency staff jointly determine which scenarios to evaluate more completely through more sophisticated studies



Step 2 – New Analyses, cont'd

- Sub-steps b and c
 - CAISO conducts 10-year enhanced LCR studies for various transmission system configurations to determine LCR needs
 - Enhanced LCR means 10 years out, multiple scenarios, alternative transmission configurations
 - Joint agency staff determine feasible/realistic set of OTC plant retirements in light of likely resource buildouts and LCR needs



Step 2 – New Analyses, cont'd

- Sub-step d
 - ISO identifies amount and type of specific operating capacity needed assuming OTC retirements
 - Types include: ramping, minimum load, regulation, etc.
 - 33% renewables integration study is likely to be a useful source, and there may be other sources



Step 2 – New Analyses, cont'd

- Sub-step e
 - determine the amount and timing of additional system capacity needed along with LCA capacity additions
 - Results of sub-steps c and d integrated



Step 2 – New Analyses, cont'd

- Sub-steps e, f and g
 - Enhanced LCR analyses conducted annually
 - CEC facilitates an analysis of LADWP OTC mitigation options
 - Comprehensive analysis of replacement schedule for all OTC capacity is developed initially and updated periodically, taking into account new planning assumptions and progress on specific projects



Step 3 – The Plan

- Tracking progress on previous decisions via construction of specific projects (Step 1) and new analyses (Step 2) are the inputs into development of a Plan.
- Energy agencies make choices from among options for replacement of each OTC plant.
- Units lose reliability designations once replacement capacity is expected to be operational.



Step 4 – NPDES Permits

- SWRCB and its regional boards do not allow NPDES permits beyond the point that a power plant is no longer needed for reliability.
- [Note: It is unclear whether the June 30, 2009 draft OTC policy issued by SWRCB staff for comment actually follows this specific part of the joint energy agency proposal.]



Step 5 – Air Credits & Licensing

- CEC works with AQMDs to assure that needed power plants can get air credits
- Inserting AQMD feedback about access to and cost of air credits into analyses
- Special issues associated with ISO Los Angeles LCA and LADWP balancing authority sharing an air basin, with common air credit limitations, but lack of coordinated planning
- Does CEC licensing process change?
- **Panel 3 will look into these issues**



Step 6 – Procurement Changes

- How should IOU procurement processes change to pursue narrowly targeted generation requirements?
- How costly will these resources be?
- What market power issues stem from reducing existing surpluses in some load pockets or sub-areas?
- 2010/11 LTPP will examine these issues.
- **Panels 1 and 2 will look into these issues.**



Step 7 – Transmission Planning

- How will transmission planning be refocused to examine OTC replacement issues?
- What are the constraints on developing new transmission lines and major substations in highly urbanized locales?
- How is market power affected by changes in capacity resulting from the joint proposal?
- What topics are appropriate for joint planning studies between ISO and LADWP?
- **Panel 4 will discuss these issues.**



Steps 8-11

- Updating the initial Plan based on results from actual RFO efforts, generator compliance plans, etc.
- Monitoring developments in the industry.
- Updating analyses when needed.
- Updating Plans and communicating broad planning information and issues for specific OTC plants to SWRCB



Unresolved Issues

- Availability of air pollution credits in SCAQMD for new power plants, or existing plant repowers.
- Sequencing of bidding into utility request for offers (RFOs) versus permitting of a facility.
- To what extent can system needs for various operating characteristics be satisfied with preferred generating technologies.
- Further analyses of nuclear generating units.
- Development of a comprehensive plan and preferential licensing treatment for Plan elements.



What Comes Next?

- Stakeholders comment on the joint staff paper and workshop discussion items by August 11.
- Energy agency staff reviews comments and makes recommendation to management.
- Energy agencies update proposal to SWRCB, if warranted.
- Energy agencies begin implementation of the proposal.