

STATE OF CALIFORNIA
Energy Resources Conservation
and Development Commission

DOCKET

07-AFC-6

DATE DEC 08 2011

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In the Matter of:

**The Application for Certification for the
CARLSBAD ENERGY CENTER
PROJECT**

Docket No. 07-AFC-6

**CARLSBAD ENERGY CENTER LLC'S
REBUTTAL TESTIMONY RELATED TO THE
DECEMBER 12, 2011 EVIDENTIARY HEARING**

December 8, 2011

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I. INTRODUCTION

Pursuant to the Committee's November 9, 2011 Scheduling Order (the "November 9th Order") Applicant Carlsbad Energy Center LLC, submits the following rebuttal testimony as such relates to the December 12, 2011 evidentiary hearing for the Carlsbad Energy Center Project ("CECP") application for certification proceeding. Applicant has not provided rebuttal testimony for all topics identified in the November 9th Order. Nevertheless, if additional rebuttal testimony is warranted during the evidentiary hearing, Applicant reserves the right to make such rebuttal at that time.

II. REBUTTAL TESTIMONY

In its direct testimony, Applicant indicated that Staff's testimony on the impact of the three new SDG&E PPA projects on the existing cumulative impacts and alternatives analysis was sufficient. In light of the testimony filed by various parties on December 5, 2011, and by the City on December 7, 2011, Applicant herein provides rebuttal testimony sponsored by Robert Mason, Gary Rubenstein, and Brian Theaker. In addition, due to the City's untimely filing of Mr. Zinn's testimony regarding PSD issues on December 7, 2011, Applicant reserves the right to present additional rebuttal testimony and to cross-examine Mr. Zinn on December 12, 2011.

Furthermore, Applicant provides the testimony of Brian Theaker, who provides additional testimony related to grid reliability and the PPA projects and impacts related thereto.

A. Testimony Sponsored by Robert Mason

The California Energy Commission, San Diego Air Pollution Control District, and/or the California Public Utilities Commission have not given the appropriate approvals for any of the three PPA projects to begin construction, let alone operate, within the San Diego Region. Moreover, the City's "testimony" regarding the three PPA projects being environmentally superior to CECP, without any legal basis or analysis of the same, is misplaced and is yet another attempt by the City to prevent CECP from receiving this Committee's approval. Mr. Garuba's conclusion tells the story of the sole purpose of his testimony:

My conclusion is that SDG&E, as the regional planner for San Diego's energy needs, is the responsible entity for determining what the region's needs are/ SDG&E's selection of other projects in lieu of the CECP confirms the City's contention that the CECP is unnecessary. Over the past several years SDG&E has moved forward and provided a clear signal that it does not need another coastal power plant and that other, more viable alternatives exist that better meet the requirements of the region.

[Garuba, A.12.] It is apparent that the City believes that SDG&E, not the CEC, that has the authority to determine whether power plants will be licensed in the State of California – a view that is contrary to the express language of the Warren-Alquist Act. Moreover, the Warren-Alquist Act expressly mandates that "need" not be established:

It is necessary that California both protect environmental quality and site new powerplants to ensure electricity reliability, improve the environmental performance of the current electricity industry and reduce consumer costs. The success of California's restructured electricity industry depends upon the willingness of private capital to invest in new powerplants. Therefore, it is necessary to modify the need for determination requirements of the state's powerplant siting and licensing process to reflect the economics of the restructured electricity industry and ensure the timely construction of new electricity generation capacity.

(Pub. Resources Code § 25009.)

The CEC's powerplant siting procedure is a certified functional equivalent process to the environmental review required by California Environmental Quality Act. As set forth in the AFC, FSA, and PMPD, under the No Project alternative the CECP site would not be redeveloped and existing Units 1-3 at the Encina Power Station would continue to operate into the foreseeable future. The electrical energy that would have been produced by the CECP would partially be produced from the existing Encina Power Station and could also be generated by another source or sources and/or imported to San Diego County. However, because of the limited availability of repowering potential, such new sources of electrical energy would not likely be "brownfield" redevelopment projects like CECP and would thus involve greater environmental and community impacts than CECP. That is exactly the case for 400MW of the 445MW proposed in the three PPA projects – they are not brownfield redevelopment or repowering projects. Moreover, a CEC license does not guarantee that a project will become operational, nor does a load serving entity's PPA. The fact that there are three projects in the San Diego Region that have PPAs (which have not been approved by the CPUC, and two of which have not received the requisite licenses from the CEC) does not change the conclusions reached in the AFC, FSA, or the PMPD regarding the No Project alternative.

Even if the CPUC were to approve the PPAs, and assuming such projects are licensed and built, as Staff's August 12, 2011 testimony noted, the three PPA projects "all have higher heat rates than CECP and will thus produce more GHG emissions on a per-MWh basis. As such, this alternative may entail a higher-emission dispatch of the system to integrate any given set of renewable resources that meet a 33% renewable energy requirement." (Staff's Supplemental Testimony at 5 (Aug. 12, 2011).)

Lastly, nothing in the Warren-Alquist Act or the CEC's regulations requires that projects have executed PPAs prior to receiving a CEC license. The fact that CECP does not have a PPA is irrelevant to this proceeding.

B. Testimony Sponsored by Brian Theaker

Question 1: Should the three peaker projects that are in the process of seeking approval of their power purchase agreements with San Diego Gas & Electric Company be considered as an alternative to the Carlsbad Energy Center Project?

Response 1: No. Considering them as an “alternative” implies that they could substitute for (i.e., be constructed and operated in lieu of) the Carlsbad Energy Center Project. In fact, it is reasonable to consider that the Carlsbad Energy Center Project and the three peaker projects are necessary for grid reliability.

On December 6, 2011, the California Independent System Operator Corporation (“CAISO”) issued a report entitled “California ISO Report on Basis and Need for CPM Designation for Sutter Energy Center” (“CAISO Report”). This report is available on the CAISO website.¹ In this report, the CAISO is proposing providing the Sutter Energy Center, a combined cycle plant located in the Balancing Authority Area but providing power to the CAISO Balancing Authority through a “pseudo-tie” arrangement, with a “risk of retirement” Capacity Procurement Mechanism (“CPM”) designation. The CAISO is seeking to provide Sutter Energy Center with a risk-of-retirement CPM designation (and associated compensation) to keep Sutter Energy Center from retiring after 2012 because it projects that Sutter's operational characteristics (e.g., its ability to flexibly ramp from one output level to another) will be required to maintain system reliability in the 2017-2018 time frame. Specifically, the CAISO projects that Sutter Energy Center’s approximately 525 MW of flexible ramping capacity will be required to help meet a project 2,535 MW deficiency in “flexible” ramping capacity in the 2017-2018 time frame. The flexible ramping characteristics are needed to maintain reliable operations as the make-up of bulk power generation changes in response to the implementation of the requirement that California load serving entities provide 33 percent of the energy that serves their demand come from renewable resources. (CAISO Report at p. 6.)

¹http://www.caiso.com/Documents/Basis_Need_CapacityProcurementMechanismDesignation_SutterEnergyCenter.pdf

The CAISO report observes that, even with the best available information on projected generation additions, there will not be enough new capacity with the needed flexibility projected to come on-line in order to meet the identified need for flexibility in 2018 (CAISO Report at 10). The CAISO report does not individually identify all of the new generation resources it projects will come on line before 2018. However, it seems reasonable to assume that both the Carlsbad Energy Center Project, which has been in the CAISO's Interconnection queue since 2006² and the California Energy Commission licensing process since 2007, as well as the peaker projects, which were selected in response to SDG&E's 2009 solicitation, are part of the generation the CAISO projects to come on line prior to 2018. From the CAISO's report, it is critical to have the flexibility provided by both the Carlsbad Energy Center Project and the three peaker projects by 2018. Again, even with the projected generation additions, the CAISO anticipates a deficiency in flexible capacity in 2018. Because all of these projects are needed to provide operational flexibility, the peaker projects cannot be considered to be an alternative to the Carlsbad Energy Center Project.

Question 2: Is the Carlsbad Energy Center Project needed for grid reliability?

Response 2: Yes. From the CAISO's analysis regarding the Sutter Energy Center, the Carlsbad Energy Center Project, which provides flexible operating characteristics comparable to the Sutter Energy Center project, is needed to help provide the operational flexibility necessary to reliably integrate renewable resources coming on-line to meet California's 33 Percent Renewable Portfolio Standard.

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² To ensure clear conveyance of this information, CECP is supported by two different interconnection requests, Encina Peaking Project (queue #137), which was submitted in October 2006 and Encina Repower Project (queue #189), which was submitted in March 2007. Each one of these requests is for one train (~280MW) of CECP.

C. Testimony Sponsored by Gary Rubenstein

The City's witness, Mr. Zinn, states that "EPA also adopted the argument that the City had been making since Applicant's initial proposal in 2009." (Zinn Testimony at p. 2.) This assertion simply is not true. In fact, the City's Exhibit 457, which is EPA's July 2011 letter, indicates that EPA's previous applicability determination was in error, without indicating what the error was. In fact, EPA specifically indicates that they have the discretion to consider different periods for purposes of determining baseline emissions, and are not bound to the five-year window that the City apparently believes should be used. In any event, the baseline issue is now moot; a new request will need to be made for a determination of non-applicability, or a PSD permit application will need to be filed with EPA, based on EPA regulations and guidance.

In addition, Mr. Zinn states "[a]lthough these increases do not appear to reflect the emission reductions associated with decommissioning of EPS Units 1, 2, and 3, it is highly unlikely that such decommissioning would reduce the increased GHG emissions associated with the CECP to less than the PSD significance threshold of 75,000 tons/year." (Zinn Testimony at p. 2.) There is no basis for his conclusion that it is "highly unlikely" that the CECP project would result in GHG emission increases below the PSD significance threshold. Mr. Zinn has not performed any calculations of his own, and by his own admission does not know whether the emission values he refers to reflect emission reductions associated with the decommissioning of EPA Units 1, 2 and 3. Applicant's consultant, Gary Rubenstein, also has not yet performed any such calculations and, therefore, Mr. Rubenstein cannot render an opinion at this time as to whether CECP would, in fact, trigger PSD review for GHG emissions.

Further, Mr. Zinn states "[a]lthough Applicant may continue to argue that any PSD permit for the CECP need not incorporate limits on NOX emissions, EPA is also likely to require the permit to include such limits." (Zinn Testimony at p. 3.) Once again, Mr. Zinn has performed no calculations to support his assertion. Whether PSD review will be required for any pollutant, whether GHGs or NOx, will depend on a determination of the net emissions increase from the project, including all contemporaneous increases and decreases in emissions.

Mr. Zinn’s assertion that CECP would not likely comply with GHG BACT requirements because its GHG emission rate is allegedly higher than that of the Palmdale Hybrid Power Project fundamentally misrepresents the nature of a federal BACT analysis. Such an analysis is made on a case-by-case basis, taking into account a variety of factors. Mr. Zinn’s simplistic approach would suggest that any gas-fired power plant with GHG emissions greater than 774 lbs/MWh would not satisfy federal BACT requirements. Such an approach would constrain utilities nationwide to approving only large-scale, base-load, combined cycle power plants fueled by natural gas, an approach that would be completely at odds with the nation’s goal of increasing the use of renewable (and, in many cases, intermittent) energy resources. Mr. Zinn’s assertion becomes completely absurd because there can be only one gas turbine model in the country at any time that can hold the title of “lowest GHG emission rate.” As the Committee is well aware, there is a wide variation in gas turbine (and power plant) heat rates, with variations that depend on ambient and site conditions. For Mr. Zinn to suggest that a strict numerical limit will be established as BACT is absurd on its face from an engineering perspective, and is not supported by EPA guidance documents or practice.

III. APPLICANT’S REVISED WITNESS LIST AND TIME ESTIMATES FOR EXAMINATION

Applicant’s witness list has been revised slightly. The current witness list and estimated time for direct examination is as follows:

<u>Topic</u>	<u>Witness</u>	<u>Time Estimate</u>
LAND-2 & LAND-3 Issues	Scott Valentino	10 mins.
Grid Reliability/PPA Impacts	Brian Theaker	5 mins.
Air Quality, PSD Issues Only	Gary Rubenstein	5 mins.
City Land Use LORS	Ronald Rouse	10 mins.
Alternatives/PPA Impacts	Gary Rubenstein	NA
Alternatives/PPA Impacts	Robert Mason	5 mins.

IV. APPLICANT'S EXHIBIT LIST

The following list identifies Applicant's exhibits as numerated pursuant to the direction of the Hearing Officer. The below list comprises only of those exhibits related to the December 12th Hearing, which includes those submitted with Applicant's testimony dated November 18, 2011, and those identified herein.³

Exhibit #	Document Title	Previously Identified As
199G	Applicant's Testimony dated November 18, 2011	Applicant's Testimony dated 11/18/2011
199H	Declaration of & Professional Qualifications for Scott Valentino	Applicant's Exhibit A to 11/18/2011 Testimony
199I	Letter from Dynegy to San Diego Unified Port District (10/25/2011)	Applicant's Exhibit A1 to 11/18/2011 Testimony
199J	Testimony of Brian Theaker re Grid Reliability	Applicant's Exhibit B to 11/18/2011 Testimony
199K	Declaration of & Professional Qualifications for Brian Theaker	Applicant's Exhibit B1 to 11/18/2011 Testimony
199L	Declaration of Gary Rubenstein	Applicant's Exhibit C to 11/18/2011 Testimony
199M	Palmdale Hybrid Power Project's BACT Analysis	Applicant's Exhibit D to 11/18/2011 Testimony
199N	Palmdale Hybrid Power Project's PSD Permit	Applicant's Exhibit E to 11/18/2011 Testimony
199O	Declaration of Ronald Rouse	Applicant's Exhibit F to 11/18/2011 Testimony
199P	Applicant's Rebuttal Testimony as set forth herein	Applicant's Rebuttal Testimony dated 12/08/2011
199Q	Declaration of Brian Theaker in Support of Rebuttal Testimony	Not previously identified
199R	California ISO Report on Basis and Need for CPM Designation for Sutter Energy Center	Not previously identified

³ Applicant is not including with its Rebuttal Testimony those Exhibits submitted with its November 18th testimony as such have been docketed and served pursuant to the Committee's November 9th Order. Only newly identified Exhibits will be provided to the parties with this submittal.

Exhibit #	Document Title	Previously Identified As
199S	Declaration of Robert Mason in Support of Rebuttal Testimony	Not previously identified
199T	Declaration of Gary Rubenstein in Support of Rebuttal Testimony	Not previously identified

V. CONCLUSION

Applicant believes that the testimony as set forth herein, along with all additional testimony previously presented in this proceeding, allows the Committee to prepare a Revised Presiding Member’s Proposed Decision that sets forth a comprehensive environmental analysis of the proposed Project and will allow the full Commission to make a favorable decision for the Applicant and the citizens of the State of California.

Date: December 8, 2011

Stoel Rives LLP

// ORIGINAL SIGNED\\

John A. McKinsey
Melissa A. Foster
Attorneys for Applicant
CARLSBAD ENERGY CENTER LLC

EXHIBIT 199Q

DECLARATION OF BRIAN THEAKER IN SUPPORT OF APPLICANT'S REBUTTAL TESTIMONY
(DATED DECEMBER 7, 2011)

Declaration of
Brian Theaker
Carlsbad Energy Center Project
(07-AFC-6)

I, Brian Theaker, declare as follows:

1. I am presently employed by NRG Energy, Inc., the entity that wholly owns Carlsbad Energy Center LLC ("Applicant"). I am the Director of Market Affairs and have provided my expertise in that capacity as such relates to the Carlsbad Energy Center Project ("CECP" or the "Project").
2. I caused to be prepared, or prepared the testimony set forth in Applicant's Testimony as such relates to Grid Reliability and Applicant's Rebuttal Testimony related to Grid Reliability and PPA Issues, which is being submitted concurrently herewith. Such testimony is in support of the Application for Certification for CECP and is based on my independent analysis of data from reliable documents and sources and my 25+ years of professional experience and knowledge.
3. It is my professional opinion that the testimony previously provided to the California Energy Commission combined with the Rebuttal Testimony referred to herein is valid and accurate with respect to the issues addressed.
4. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, I could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12-7-11

Date



Brian Theaker

EXHIBIT 199R
CALIFORNIA ISO REPORT ON BASIS AND NEED FOR CPM DESIGNATION
FOR THE SUTTER ENERGY CENTER
(DATED DECEMBER 6, 2011)



California ISO
Shaping a Renewed Future

**California ISO Report on
Basis and Need
for CPM Designation
for Sutter Energy Center**

December 6, 2011

California ISO Report on Basis and Need for CPM Designation for Sutter Energy Center

I. Executive Summary

This report addresses the basis and need for the California ISO (CAISO) to designate the Sutter Energy Center (Sutter plant) as capacity at risk of retirement, pursuant to the provisions of the CAISO Tariff regarding the Capacity Procurement Mechanism (CPM).¹

On November 22, 2011, Calpine submitted to the CAISO a request, and all required supporting documentation, for designation of the Sutter plant as CPM Capacity for 2012 (November 22 Calpine request). The November 22 Calpine request stated that, absent such a CPM designation, the Sutter plant must and will be retired in 2012 and thus will not be available for commercial operations in 2013 and later years.²

Section 43.2.6 of the CAISO Tariff states that the CAISO may issue a CPM designation for capacity at risk of retirement if all five requirements specified in the tariff section are met. In this case, the CAISO has determined that the Sutter plant satisfies four of the five requirements but does not meet the requirement that “the resource will be needed for reliability purposes, either for its locational or operational characteristics, by the end of the calendar year following the current RA Compliance Year.” The CAISO’s analysis shows that the Sutter plant will be needed for reliability purposes for its operational characteristics in the 2017/2018 time frame. As explained below, based on information provided by Calpine, the CAISO has determined that the Sutter plant will not be available to meet reliability needs in the CAISO balancing authority area in the 2017/2018 time frame. In accordance with Section 43.2.6, the CAISO requests that stakeholders provide any written comments on this report to the CAISO by December 16, 2011. Please submit comments to Phil Pettingill at ppettingill@caiso.com.

Because the CAISO analysis shows that the plant will only be needed for reliability and operational requirements as of 2017/18, the CAISO is precluded from procuring the resource under the current tariff authority. The ISO has determined that if the Sutter plant shuts down in 2012, there will be a capacity gap of 3570 by the end of 2017, which will pose significant challenges to the reliable operation of the CAISO grid. The CAISO has determined that it must take immediate action to avoid these reliability

¹ Capitalized terms not otherwise defined in this report have the meanings set forth in the Master Definitions Supplement, Appendix A to the CAISO Tariff. References in this report to numbered sections are references to sections of the CAISO Tariff unless otherwise stated.

² Certain information submitted in support of the November 22 Calpine request is subject to the confidentiality provisions of Section 20.2 of the CAISO Tariff.

and operational issues in the future. Specifically, the CAISO will be making a filing with the Federal Energy Regulatory Commission requesting waiver of existing tariff provisions that currently limit the procurement of capacity at risk of retirement to cases in which such capacity is needed the next resource adequacy compliance year. The waiver if granted will enable the ISO to procure the Sutter capacity for 2012 based on the CAISO's determination of need by the end of 2017.

II. Background

A. Applicable CAISO Tariff Provisions

Section 43.1.2 of the CAISO Tariff authorizes the CAISO to designate Eligible Capacity to provide CPM Capacity services in order to address six listed types of circumstances. One of the CPM categories consists of the procurement of capacity at risk of retirement within the current Resource Adequacy (RA) Compliance Year that will be needed for reliability by the end of the calendar year following the current RA Compliance Year. Section 43.2.6 of the CAISO Tariff states that the CAISO may issue a CPM designation for such capacity at risk of retirement in the event that all of the following requirements apply:

- (1) the resource was not contracted as RA Capacity nor listed as RA Capacity in any Load Serving Entity's (LSE) annual RA Plan during the current RA Compliance Year;
- (2) the CAISO did not identify any deficiency, individual or collective, in an LSE's annual RA Plan for the current RA Compliance Year that resulted in a CPM designation for the resource in the current RA Compliance Year;
- (3) CAISO technical assessments project that the resource will be needed for reliability purposes, either for its locational or operational characteristics, by the end of the calendar year following the current RA Compliance Year;
- (4) no new generation is projected by the CAISO to be in operation by the start of the subsequent RA Compliance Year that will meet the identified reliability need; and
- (5) the resource owner submits to the CAISO and the Department of Market Monitoring (DMM), at least 180 days prior to terminating the resource's Participating Generator Agreement (PGA) or removing the resource from PGA Schedule 1, a request for a CPM designation under Section 43.2.6 and the affidavit of an executive officer of the company who has the legal authority to bind such entity, with the supporting financial information and documentation discussed in the Business Practice Manual (BPM) for Reliability Requirements, that attests that it will be uneconomic for the

resource to remain in service in the current RA Compliance Year and that the decision to retire is definite unless CPM procurement occurs.³

Section 43.2.6 further provides that if the CAISO determines that all five of these requirements have been met, prior to issuing the CPM designation, the CAISO will prepare a report that explains the basis and need for the CPM designation and will provide stakeholders at least seven (7) days to review and submit comments on the report.⁴ Section 43.3.7 of the CAISO Tariff also states that a CPM designation for capacity at risk of retirement under Section 43.2.6 will have a minimum commitment term of one (1) month and a maximum commitment term of one (1) year, based on the number of months for which the capacity is to be procured within the current RA Compliance Year.

B. The Sutter Plant

The Sutter plant is a combined cycle gas turbine (CCGT) generating facility located near Yuba City in Sutter County, California. Calpine Corporation (Calpine) indirectly owns the Sutter plant through its subsidiary, Calpine Construction Finance Company, L.P. (CCFC). The Sutter plant relies on air cooling rather than once-through cooling (OTC) using ocean or lake water.⁵

The Sutter plant has a net qualifying capacity for 2012 of between 500 and 525 MW.⁶ It is interconnected to the transmission system operated by the Western Area Power Administration and operates in the CAISO markets pursuant to a pseudo-tie arrangement with the CAISO.⁷ The Sutter plant can be dispatched by the CAISO and has flexible ramping capability that allows discrete portions of its capacity to be dispatched as needed to satisfy demand.

III. Demonstration of Basis and Need to Designate the Sutter Plant as Capacity at Risk of Retirement

As explained below, Sutter meets four of the five requirements to be issued a CPM designation for capacity at risk of retirement pursuant to Section 43.2.6 and the related provisions of the BPM for Reliability Requirements and will meet the fifth

³ Section II of this report addresses the application of these CAISO Tariff provisions and related provisions of the BPM for Reliability Requirements to the Sutter plant.

⁴ Section 43.2.6 also states that the CAISO will allow no fewer than thirty (30) days for an LSE to procure Capacity from the resource. If an LSE does not, within that period, procure sufficient RA Capacity to keep the resource in operation during the current RA Compliance Year, the CAISO may issue the risk of retirement designation; provided that the CAISO determines that the designation is necessary and that all other available procurement measures have failed to procure the resources needed for reliable operation.

⁵ Because the Sutter plant is air-cooled, it is not subject to the OTC regulations discussed in Section III.C below.

⁶ The Sutter plant's net qualifying capacity is specified for each month and varies based on seasonal factors.

⁷ See Pseudo PGA between the CAISO and CCFC, accepted by FERC letter order issued in Docket No. ER06-58-001 on March 1, 2006.

requirement upon FERC approval of a request to waive the tariff provision requiring the reliability and operational need for the plant to be “by the end of the calendar year following the current RA Compliance Year.” A FERC waiver of this tariff provision will allow the CAISO to designate the Sutter Plant as CPM Capacity at risk of retirement based on longer-term reliability and operational needs.

A. The Sutter Plant Was Not Contracted or Listed as RA Capacity

The CAISO’s review confirms that the Sutter plant was not contracted as RA Capacity nor listed as RA Capacity in any LSE’s annual Resource Adequacy Plan during the current RA Compliance Year, *i.e.*, during 2012.

B. The CAISO Identified No Deficiency in an LSE’s Annual Resource Adequacy Plan that Resulted in a CPM Designation for the Sutter Plant

The CAISO did not identify any deficiency, individual or collective, in an LSE’s annual Resource Adequacy Plan for the current RA Compliance Year (*i.e.*, 2012) that resulted in a CPM designation for the Sutter plant in the current RA Compliance Year.

C. CAISO Technical Assessments Project that the Sutter Plant Will Be Needed for Reliability Purposes

1. Overview of the CAISO’s Analysis and Methodology

The CAISO has conducted analysis, including technical assessments, that project that the Sutter plant will be needed for reliability purposes, specifically for its operational characteristics, in the 2017/2018 time frame.⁸

The CAISO conducted its analysis regarding the Sutter plant in accordance with Section 7.3.5.2 of the BPM for Reliability Requirements, which explains that the CAISO will use a diverse set of tools and follows a multi-step process whereby the generating facility is studied for its impact on local and system reliability and operational flexibility, given the best available information regarding future grid conditions and the assumed availability of RA resources procured for the current RA Compliance Year (including other known generator retirements) and any new generation that will achieve commercial operation to meet future needs. In the case of the 2017/2018 assessment the assumed availability of resources is based on the California Public Utilities Commission (CPUC) Long-Term Procurement Plant (LTPP) planning assumptions rather than the RA resource procurement.

Section 7.3.5.2 of the BPM for Reliability Requirements also explains that the CAISO’s analysis must consist of one several listed types of studies that include a

⁸ The CAISO recognizes that Section 43.2.6 states that the technical assessments are to be conducted for the end of the calendar year following the current RA Compliance Year. That subject is addressed in Section III.C(3) below.

production simulation. As explained below, the CAISO's analysis in this case consists multi-step process that includes quantification of the expected flexibility requirements to meet load and supply variability and uncertainty and an assessment of fleet of resources expected to be available to simultaneously meet the load plus operating reserves requirements, plus flexibility using a production simulation conducted in accordance with the study assumptions and scope of study established by the CPUC/LTPP proceeding, with certain adjustments. Further, pursuant to the BPM requirements, the CAISO's analysis evaluates the adverse effects on the transmission system as well as operational flexibility requirements, and also considers the characteristics of the individual resources in the fleet and will be able to highlight resources that are needed for locational and system reliability or have non-generic resource flexibility required to operate the integrated grid and have not been secured through the procurement process. As explained below, the CAISO's analysis does address operational flexibility requirements with specific consideration to the non-generic operating characteristics of the Sutter plant and how that plant is needed for system reliability.

The CAISO's analysis is based on the study assumptions and scope of study developed for the rulemaking proceeding established in 2010 by the CPUC/LTPP for California.⁹ The LTPP proceeding will determine the future long-term procurement obligations of the state's investor-owned utilities. As part of that proceeding, the CAISO evaluated potential operational and resource capacity needs driven by the requirement of the state of California that LSEs implement the state's 33 percent renewable portfolio standard (RPS) by 2020.¹⁰

In accordance with the parameters established in the LTPP proceeding, the CAISO's analyzed 2020 scenarios. The CPUC authorized several scenarios for analysis in that proceeding. The CAISO has based its analysis of the potential need for the Sutter plant based on the CPUC's 33 percent trajectory high load (high load) scenario, which is intended to reflect future uncertainties in forecast demand. The CAISO determined that use of the high load scenario is appropriate because it reflects plausible uncertainties in which higher load growth and/or demand programs underperform¹¹

⁹ CPUC Rulemaking 10-05-006. Filings, orders, and other documents generated in that proceeding are available at http://www.cpuc.ca.gov/PUC/energy/Procurement/LTPP/LTPP2010/index_2010.htm, http://docs.cpuc.ca.gov/Published/proceedings/R1005006_doc.htm, and http://www.cpuc.ca.gov/PUC/energy/Renewables/100824_workshop.htm.

¹⁰ An overview of the CAISO's evaluation in the LTPP proceeding is provided in a briefing memorandum from Keith Casey, Vice President, Market and Infrastructure Development for the CAISO, to the CAISO Board of Governors dated August 18, 2011 (Board memorandum). The Board memorandum is available at <http://www.caiso.com/Documents/110825BriefingonRenewableIntegration-Memo.pdf>. More detailed information regarding the CAISO's evaluation is provided in the Track I Direct Testimony of Mark Rothleder on behalf of the CAISO, CPUC Rulemaking 10-05-006 (as corrected on August 12, 2011) (Rothleder testimony). The Rothleder testimony is available at http://www.caiso.com/Documents/R1005006_CAISO_LTPP_TestimonyErrata08102011_clean_final.pdf.

¹¹ CPUC Scoping LTPP Scoping Memo Section 3.1.2.3.3 Need: In the sensitivity analysis for demand levels for both gigawatt hour (GWh) and MW, the investor owned utilities shall use high and low demand levels that reflect a 10% variance from the demand forecast value for each year. This value is reflective of any combination of future uncertainties (e.g., increased or decreased load growth or programmatic performance).

consistent with CPUC assumptions. While load forecast and other assumptions may vary over time, the CAISO must plan and account for probable scenarios in its back-stop procurement of capacity to ensure reliable operations of the CAISO grid.

The CAISO's analysis uses the generating resource retirement schedule from the scoping memorandum issued by the CPUC in the LTPP proceeding, in order to determine the extent to which there is the potential for resource flexibility shortages from 2011 to 2020.¹² In particular, the analysis takes into account the MW quantity of generating capacity that is expected to be retired during that time frame due to regulations implemented by the State Water Resources Control Board to curb the use of once-through cooling (OTC) in coastal power plant plants.¹³

2. Results of the CAISO's Analysis

The CAISO's analysis indicates that the Sutter plant will be required for reliability purposes, specifically for its operational characteristics, in the late 2017 or early 2018 time frame.¹⁴ Based on information provided in the CPUC scoping memo, it is expected that plant retirements due to the OTC regulations will amount to 8,099 MW by the end of 2017. An additional 3,980 MW of retirement will occur between from the end of 2017 to 2020.¹⁵ The CAISO's analysis also indicates that, under the high load scenario, the need for new capacity in addition to the expected resource additions will be 4,600 MW by 2020. To project the needs for the 2017/2018 period, 3980 MW of capacity was added to the original 2020 high load scenario to reflect the OTC resources that will not be retired by the end of 2017. Load was not adjusted as the forecast load in 2018 and 2020 remain almost the same due to an assumption that projected load growth will be offset by increased energy efficiency, demand response and demand combined heat and power resources.

Other than the adjustments made to OTC resources expected to be available in 2018 no other supply adjustments were made to the 2020 high load scenario. Renewable supply was adjusted to reflect 2018 capacity levels. No local resources have assumed to be added by 2018 to satisfy local capacity requirement because by 2018, with 3980MW of unretired OTC all reside in SCE area and therefore are assumed to satisfy local capacity requirements. Consistent with the CPUC planning assumptions for the 2020 simulations, the Sutter plant, 525 MW of installed capacity, was assumed

¹² Assigned Commissioner and Administrative Law Judge's Joint Scoping Memo and Ruling, CPUC Rulemaking 10-05-006 (May 6, 2010) (CPUC scoping memo). The CPUC scoping memo and attachments thereto are available at <http://docs.cpuc.ca.gov/EFILE/RULC/127542.htm>.

¹³ See Board memorandum at 2; CPUC scoping memo at 18-19 (setting forth study assumptions regarding OTC retirements). Information regarding the OTC regulations is available at http://www.swrcb.ca.gov/water_issues/programs/ocean/cwa316/.

¹⁴ Because the Sutter plant is a pseudo-tie generating resource and thus is located outside of the CAISO balancing authority area, the Sutter plant will not be needed for its locational characteristics.

¹⁵ The CAISO calculated the 3,980 MW amount based on the difference between the expected retirement or repowering of 8,099 MW of OTC plant by 2018 and 12,079 MW of OTC plant by 2020 (12,079 MW – 8,099 MW = 3980 MW). See Board memorandum at 2.

available in 2017/2018 case. With these assumptions, a production simulation was performed for July to assess whether operational requirements could be met. This simulation identified a 2535 MW deficiency in flexible capacity requirements resulting in an estimated 3,570MW of additional capacity needs. The removal of 525 MW capacity of capacity identified as needed by the study would result in reliability and operational issues on the CAISO grid and would reflect as additional needs to identified 3,570MW as early as the end of 2017. Thus, there will be a need for additional capacity as early as the end of 2017. The absence of Sutter would increase the needed flexible capacity for the 2017/2018 case. Table 1 compares the load, supply and flexibility needs for the 2018 and 2020 case.

	Case Assumptions			Differences	
	2020 LTPP Assumptions (MW)	2018 Sensitivity (Developed from 2020 Case) (MW)	2018 LTPP Assumptions (MW)	2018 Sensitivity-2018 LTPP Assumptions (MW)	2020 LTPP-2018 Sensitivity (MW)
CPUC-LTPP High Load Scenario					
Demand					
CAISO Demand Forecast	62,324	62,324	60,754	1,570	-
Incremental Energy Efficiency (EE)	5,688	5,688	4,167	1,521	-
Load Net EE	56,636	56,636	56,587	49	-
Demand Response (DR)	5,145	5,145	5,051	94	-
Demand Side CHP	819	819	655	164	-
Load net (EE, DR, CHP)	50,672	50,672	50,881	(209)	-
Supply (incremental/decremental)					
OTC	19,292	19,292	19,292	-	-
OTC Retirement	12,079	8,099	8,099	-	3,980
OTC Net OTC Retirements	7,213	11,193	11,193	-	(3,980)
RPS Additions (Note 1)	6,049	Note 1 4,118	4,118	-	1,931
Other Additions	2,797		2,797	-	-
Total Supply Changes	16,059	18,108	18,108	-	(2,049)
Flexibility					
HE15 Load Following Requirements	2,935	2,827	N/A	N/A	108
Upward A/S and load following shortages	Note 3 3,266	2,535	N/A	N/A	731
Need (Note 2)	4,600	Note 2 3,570	N/A	N/A	1,030
Note 1: Renewable production in 2020 scenario was adjusted to reflect expected 2018 RPS capacity					
Note 2: The need of in the 2018 sensitivity was estimated based on the quantity of shortage observed and 2020 observed shortages and needs (2,535MW x 4,600MW/3,266MW = 3,570MW)					
Note 3: 2020 shortages occur both load following and non-spin					

Table 1: Comparison of 2020 and 2018 Case

The CAISO has determined that there is no additional new capacity with needed flexibility projected to come online in time to meet the identified need. In the production simulation, Sutter was observed to have a 69.91% capacity factor. Sutter was observed to provide energy, operating reserves and flexibility in the 2017/2018 production simulation.¹⁶ The retirement of existing capacity that embodies the required flexible characteristics would pose a significant risk to reliability.

¹⁶July energy production 280.89 GWh, spinning reserve = 8.86 GWh, non-spinning reserve = 0.36 GWh, Regulation = 5.20 GWh, load following Up = 30.84 GWh, load following down = 64.38 GWh.21

The Sutter plant is needed to meet these 2017/2018 operational needs identified by the CAISO. The plant provides a significant amount of net qualifying capacity – between 500 and 525 MW. That capacity will not be available to meet system needs in the CAISO balancing authority area if the plant is retired. Moreover, the Sutter plant has valuable flexible ramping capability that allows the CAISO to dispatch discrete portions of its capacity as needed to satisfy demand. This flexible capacity will also be lost if the Sutter plant is retired in 2012.

Based on the information provided to the CAISO in the November 22 Calpine request, the Sutter plant will be unavailable to meet the 2017/2018 operational needs discussed above if the plant does not receive a CPM designation for 2012. Calpine explained that if the Sutter plant is retired in 2012, the plant may not return to commercial operations in future years because, under Environmental Protection Agency policy, the plant would likely need to undergo New Source Review and obtain a new air quality permit. Even if the Sutter plant could meet then-current best available control technology (BACT) requirements and otherwise satisfy all of the new air quality permitting requirements that have gone into effect since the plant was first permitted, the permitting process is often lengthy and subject to an extended and unpredictable appeals process. Further, Calpine stated that future requirements to meet then-current BACT could require substantial new investments, making the return of the Sutter plant to service uneconomic.

3. Planned CAISO Request for Tariff Waiver

Because the Sutter plant is needed to meet the 2017/2018 operational needs discussed above, the CAISO has determined that it is appropriate to file a request with FERC for waiver of the tariff requirement in Section 43.2.6 of the CAISO Tariff that the reliability need for a risk of retirement CPM designation must be shown for “the end of the calendar year following the current RA Compliance Year.” The CAISO plans to file the request for waiver no later than January 2012, after the CAISO receives stakeholder comments on this report.

4. Stakeholder Process on Longer-Term Capacity Procurement Mechanism

The Sutter plant request highlights the benefits of developing a capacity procurement mechanism than address longer-term system needs than the CAISO’s CPM provisions. The CAISO will be initiating a stakeholder process in January 2012 to develop such a longer-term mechanism. The CAISO anticipates that the stakeholder process will take approximately six months to complete. Any requisite filings would be made shortly after the completion of the stakeholder process. Given this schedule, that stakeholder process will not be finalized in time to address the proposed retirement of the Sutter plant during 2012. Because the Sutter plant is uniquely situated as the only

plant with its operating characteristics that has informed the CAISO of its intent to retire in 2012 absent a CPM designation, the CAISO intends to seek a waiver to allow a CPM designation of the Sutter plant in 2012. After 2012, the CAISO expects that continued operation of the Sutter plant and any other resources with similar issues will be assessed under the longer-term capacity procurement mechanism to be developed.

D. The CAISO Projects No New Generation that Will Meet the Identified Reliability Need

The CAISO has reviewed the best available information on projected generation additions to the system and has determined that, even with projected generation additions, there will be insufficient generation in operation by the start of 2017/2018 that have the needed operational characteristics to meet the identified reliability need. In light of Calpine's statement that it definitely will retire the Sutter plant in 2012 if the plant does not receive a CPM designation (or comparable bilateral capacity compensation) it is reasonable for the CAISO to provide a CPM designation to the Sutter plan in 2012 that will allow the Sutter plant to remain in operation in 2017/2018.

E. Calpine Has Submitted the Required Information to the CAISO

The Calpine request, submitted on November 22, 2011, satisfies the CASO Tariff requirements that the resource owner must submit, at least 180 days prior to terminating the PGA for the resource or removing the resource from PGA Schedule 1, a request for a CPM designation and the affidavit of an executive officer of the company who has the legal authority to bind the company, with the supporting financial information and documentation discussed in the BPM for Reliability Requirements, that attests that it will be uneconomic for the resource to remain in service and that the decision to retire is definite unless CPM procurement occurs. The November 22 Calpine request included an affidavit from Alex Makler, Vice President –Strategic Origination and Development, West Region, of Calpine Corporation, stating that Calpine has conducted extensive analyses of whether it would be economic for the Sutter plant to remain in service in the 2012 RA Compliance Year, and the company has made the definite decision to retire Sutter in 2012, unless CPM procurement (or comparable bilateral capacity procurement) occurs.

The supporting financial information and documentation required under Section 7.3.5.2 of the BPM for Reliability Requirements includes the following:

- The expected PGA termination date for the resource. This date must be a least 180 days after submission of the request for a risk of retirement CPM designation. Calpine states that its expected PGA termination date will be at least 180 days after the November 22 Calpine request, bur prior to the end of 2012.
- A description of power purchase agreements and capacity contracts currently in effect (if any), including the term length, volume, and pricing provisions. Calpine states that the Sutter plant has multiple contracts with multiple entities to provide

Resource Adequacy (but not energy), all of which expire no later than December 31, 2011. Calpine further states that the Sutter plant has no Resource Adequacy contracts for 2012 and no power purchase agreements to supply third-parties with energy in 2011, 2012, or later years.

- A description of the term, length, volume, and pricing provisions of existing fuel supply contracts. Calpine states that the Sutter plant has no project-specific fuel supply contracts with non-affiliated third parties. The November 22 Calpine request indicates that Calpine purchases gas and hedges its fuel requirements on a portfolio basis for its plants and that a Calpine affiliate supplies gas to Sutter and other Calpine owned or operated plants on an as-needed basis.
- Any analyses the resource owner performed, or had performed, to determine whether it is economic for the resource to remain in service during the current year including supporting documents. Calpine has provided economic analyses in a confidential attachment submitted in support of the November 22 Calpine request.
- Any documents confirming the formal decision of the Board of Directors, officers, or management of the resource owner, as appropriate, that the resource will be retired unless CPM procurement occurs. Calpine has provided appropriate certificates from its management that reflect the requisite formal decisions.

The CAISO has reviewed the November 22 Calpine request and has determined that the request includes each of these pieces of supporting financial information and documentation.

IV. Proposed Designation of the Sutter Plant as Capacity at Risk of Retirement

Following the receipt of FERC-approval of the requested tariff-waiver, the CAISO anticipates a CPM designation for any of the remaining months of 2012 as necessary. The CAISO has determined that a designation for this period should be sufficient to ensure that the Sutter plant will remain operational through 2012. As noted above, after 2012, the CAISO expects that continued operation of the Sutter plant will be assessed under the longer-term capacity procurement mechanism to be developed in the stakeholder process discussed above.

In accordance with Section 43.6.2 of the CAISO Tariff, the price for the proposed CPM designation for the Sutter plant will be as approved by the Federal Energy Regulatory Commission in Docket ER11-2256, currently pending the outcome of settlement negotiations.

Because the need for the Sutter plant is based on operational needs in all Transmission Access Charge (TAC) Areas rather than any locational needs, the costs of the proposed CPM designation for the Sutter plant will be allocated to all Scheduling

Coordinators for LSEs that serve Load in all CAISO TAC Areas, consistent with Section 43.8.7 of the CAISO Tariff.

In accordance with Section 43.2.6, the CAISO has posted the instant report on its website and will provide stakeholders seven days (*i.e.*, until December 16, 2011) to submit any written comments on the report.

Under Section 43.2.6 of the CAISO Tariff, issuance of this report normally triggers the start of a period of no less than thirty (30) days for an LSE to procure Capacity from a Resource before the CAISO may issue the risk of retirement designation. Because the CAISO's authority to issue a risk of retirement designation for the Sutter plant is dependent upon FERC approval of the planned waiver request defined above, the CAISO does not intend to commence this procurement period until after FERC acts on the waiver request. The CAISO will issue a market notice announcing the start of the time period set forth in Section 43.2.6 for an LSE to procure RA Capacity from the resource after FERC issues an order granting the CAISO's request for a tariff waiver.

EXHIBIT 199S

DECLARATION OF ROBERT MASON IN SUPPORT OF APPLICANT'S REBUTTAL TESTIMONY
(DATED DECEMBER 7, 2011)

Declaration of
Robert C. Mason
Carlsbad Energy Center Project
(07-AFC-6)

I, Robert C. Mason, declare as follows:

1. I am presently employed by CH2M Hill, Inc., under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. I caused to be prepared or prepared information for the Application for Certification ("AFC") for CECP and subsequent information docketed with the California Energy Commission ("CEC") associated with the AFC proceeding for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge.
3. In addition to those documents previously identified by me in this proceeding, I testified at and was sworn by this Committee to testify under penalty of perjury during evidentiary hearings previously held in this proceeding.
4. I prepared the Rebuttal Testimony relating to Alternatives and issues related thereto, which is being filed concurrently herewith and it is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

December 7, 2011
Date

Robert C. Mason
Robert C. Mason

EXHIBIT 199T

DECLARATION OF GARY RUBENSTEIN IN SUPPORT OF APPLICANT'S REBUTTAL TESTIMONY
(DATED DECEMBER 7, 2011)

Declaration of
Gary Rubenstein
Carlsbad Energy Center Project
(07-AFC-6)

I, Gary Rubenstein, declare as follows:

1. I am presently employed by Sierra Research, Inc. under contract with Carlsbad Energy Center LLC to provide environmental consulting services for the Carlsbad Energy Center Project ("CECP").
2. A copy of my professional qualifications and experience has been previously submitted to this Committee for testimony previously presented in this proceeding.
3. I caused to be prepared or prepared testimony set forth in Applicant's Rebuttal Testimony as such relates to the topic of air quality and Federal Prevention of Significant Deterioration Permit issues. My testimony is in support of the Application for Certification for CECP and is based on my independent analysis of data from reliable documents and sources and my professional experience and knowledge. In addition to Applicant's Supplemental Testimony, I presented testimony for this proceeding at prior evidentiary hearings regarding air quality and public health issues.
4. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed herein.
5. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

12/7/2011
Date

Gary Rubenstein
Gary Rubenstein

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APPLICATION FOR CERTIFICATION
FOR THE CARLSBAD ENERGY
CENTER PROJECT

Docket No. 07-AFC-6
PROOF OF SERVICE
(Revised 11/29/2011)

CARLSBAD ENERGY CENTER LLC'S
Applicant's Rebuttal Testimony dated December 8, 2011

CALIFORNIA ENERGY COMMISSION

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