



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

FILED

04-25-08

04:59 PM

Order Instituting Rulemaking to Consider
Revisions to the Planning Reserve
Margin for Reliable and Cost-Effective
Electric Service.

R.08-04-012
(April 10, 2008)

**PREHEARING CONFERENCE STATEMENT
OF THE DIVISION OF RATEPAYER ADVOCATES**

Charlyn Hook, Attorney
Frank Ghazzagh, Analyst
Division of Ratepayer Advocates
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-3050
Fax: (415) 703-2262

Frank Ghazzagh
Senior Analyst
Division of Ratepayer Advocates
California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102
Phone: (415) 703-3050
Fax: (415) 703-2262

April 25, 2008

Order Instituting Rulemaking to Consider
Revisions to the Planning Reserve
Margin for Reliable and Cost-Effective
Electric Service.

R.08-04-012
(April 10, 2008)

**PREHEARING CONFERENCE STATEMENT
OF THE DIVISION OF RATEPAYER ADVOCATES**

I. INTRODUCTION

Pursuant to the schedule issued in the Order Instituting Rulemaking (OIR), the Division of Ratepayer Advocates (DRA) submits this PreHearing Conference Statement to provide suggestions for the scope and priorities to be addressed in this proceeding. DRA has an interest in this proceeding as the division of the Commission mandated by state law to advocate on behalf of public utility ratepayers to obtain the lowest possible rates consistent with reliable and safe service levels.

DRA intends to participate in all phases of this proceeding to ensure that the impact on rates (and other impacts on end-use customers) are considered in decisions concerning the Planning Reserve Margin (PRM). The Commission should balance the need for reliability with the costs. If the Commission decides to decrease or increase the PRM level, it must also address the cost impacts of these changes on customer rates.

The OIR determined that this proceeding should be categorized as ratesetting, as defined in Rule 1.3(3). DRA agrees with this determination. Although the ultimate decision may involve policy considerations, the determination of the appropriate PRM will impact rates. It necessarily involves many factual issues, and will require hearings.

With respect to the schedule, DRA suggests some scheduling modifications to better coordinate with the CAISO's related Planning Reserve Requirements Study (PRRS) process. In addition, DRA recommends that hearings be held after August 2008 to avoid summer vacation scheduling conflicts.

The remainder of DRA's PHC statement will address the scope and priorities of issues to be addressed, and offers some additional topics for consideration in this proceeding.

II. PHASE 1 ISSUES

A. DRA's Preliminary Comments and Additional Considerations for Reexamining Planning Reserve Requirements

1. Basic Definition of Planning Reserves

At their most basic, planning reserves are long-term in nature and forward looking. They are intended to ensure that control area operators have capacity resources well in advance of need. Operating reserves are short-term, e.g., for tomorrow, today, this minute, and are intended to maintain reliable operation except under the most severe contingencies. The type and quality of reserves is important today, i.e., with respect to ramping ability, quick start, regulation, and so on as load factors in California are typically low, around 50% or less in summer in some areas, meaning that the operators need considerable cycling ability available and reserve units to back that up. In determining the PRM needed for the future, the bottom line is that the margin of generation has to be of the right type and quality, and in the right place in order to ensure that the system has adequate operating reserves as it gets closer to real time.

The CAISO plans to examine its ancillary services markets and products with an eye toward ensuring its ability in the future to obtain the type, quantity, and quality of reserves it will need. The CAISO as well as many other entities across the west are looking seriously at system integration issues, especially with respect to wind generation. The environment is dynamic and requires the CAISO and CPUC to consider much more than the overall level of planning reserves, but also to recognize the changing environment around operating reserves.

a) Penetration of intermittent resources

As renewables, particularly intermittent resources such as wind, increasingly penetrate the market, the quantity, quality and type of flexible resources needed will

change commensurately to deal with a resource that can fluctuate between very low output and maximum output in a matter of minutes. Thus, the ramping ability thermal units have today will have to be even better tomorrow. This underscores the notion that it is not just the *level* of PRM that is important, it is the ability of generation to meet the new demands that intermittent resources will place on the system that is increasingly important.

b) Operating reserve requirements are changing and should be considered in thinking about planning reserves

The Western Electricity Coordinating Council (WECC) recently adopted a new permanent contingency reserve standard which is described below, and its Operating Committee is going to undertake a potential further modification by examining a Frequency Responsive Reserve Standard (FRR). An FRR standard, if adopted after going through what will be a fairly lengthy WECC standard setting process would then go to NERC and FERC with the intent of replacing this new permanent standard.

To date, the WECC Minimum Operating Reliability Criteria (MORC) has required that Balancing Authorities such as the CAISO carry contingency reserves sufficient to cover *at least* the greater of the Most Severe Single Contingency (MSSC), or 5% of the load served by hydro generation plus 7% of the load served by thermal generation. Another way to put the 5/7 requirement is that the CAISO needs spinning and non-spinning operating reserves necessary to meet the WECC MORC.

The WECC on April 16, 2008 adopted a new permanent standard BAL-002-WECC-1 to replace the 5/7 requirement. It will be forwarded to NERC and FERC and presumably be effective this coming June. The new standard is that each reserve sharing group or balancing authority must maintain a minimum contingency reserve that is the *greater* of the following: an amount of reserve equal to the loss of the MSSC, or an amount equal to the sum of 3% of load (generation minus station service minus net interchange) and 3% of net generation (generation minus station service).

An FRR will identify capacity that responds to deterioration of frequency and will constitute part of operating reserves. A balancing authority's operating reserves would consist of a quantity component constituted of spinning reserves measured in MW that respond to frequency. This will be in proportion to a balancing authority's size. In addition, a quality characteristic will be required that is a function of the system's ability to respond to frequency drop. A Frequency Response Standard would measure the aggregate response of all frequency responsive devices (generation and/or load) under the balancing authority's jurisdiction.

B. General Phase 1 Comments

As outlined in the OIR, Phase 1 will focus on the methodology for evaluating and adopting the PRM, the proper sources of data to be considered, and will evaluate a probabilistic methodology for establishing the PRM level. DRA agrees that the Commission must coordinate closely with the CAISO's PRRS stakeholder process to avoid duplication or conflicting efforts. DRA also anticipates that hearings and/or workshops will be required. The target date of December 2008 for a Phase I decision on methodology appears reasonable, but may need to be moved up, given that the Case 1 Study of the CAISO's PRRS will be 70% completed by approximately this time. (further discussion and proposed schedule, below.)

C. Detailed Issues Anticipated for Phase I

1. How will the Commission interact with the CAISO's PRRS? How will the IOUs interact with the PRRS?

DRA recommends that the CPUC's PRM proceeding be closely coordinated with the CAISO's Planning Reserve Requirements Study (PRRS). These studies are very technical, complex, time-consuming and expensive to perform, and will require the use of consultants with specialized expertise. DRA believes that there is no need to duplicate efforts at the CPUC and the CAISO in the PRM studies and the development of Loss of Load Expectation (LOLE) modeling. It is better to rely on one study, developed collaboratively between the two agencies. It is important that the Commission's Energy

Division staff, CEC, and other stakeholders be involved in the determination of LOLE, and that there be a high degree of transparency as to what CAISO's consultant is developing in the PRRS.

With such a cooperative effort, the results from the CAISO's PRRS can be used by the Commission in establishing the PRM for entities under the CPUC's jurisdiction. It should be understood that the CPUC is the authority for setting the PRM for entities under its jurisdiction. However, as is the case in Local Capacity Requirements (LCR) study process relied upon by the Commission, the CAISO should be primarily responsible for performing the underlying technical analysis for LOLE in its PRRS, for review and adoption (or modification) by the Commission.

DRA emphasizes that these processes should not be conducted independent of one another. For example, it would be counter-productive for the CAISO to carry out the LOLE analysis and determine the PRR without ample stakeholder participation and input. Phase 1 of the Commission's PRM proceeding provides a forum for parties to challenge the input assumptions, generation/transmission expansion scenarios, and other parameters used in the CAISO's study, and therefore should be coordinated with the CAISO's process, both to allow stakeholder input into the CAISO PRRS study process before it is too far along to consider this input.

The CAISO began its PRRS in the fall of 2007. In its PRRS study, the CAISO will investigate the long-term planning reserve requirements, and has already hired a consultant to determine LOLE for the entire CAISO Controlled Grid and the three intra-regional areas (Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric service areas). Using the results from LOLE, the Planning Reserve Requirement (PRR) for the entire CAISO Controlled Grid, as well as the three intra-regional areas, will be determined based on one day in ten years LOLE.

The input for CAISO's LOLE analysis will require data on the availability and performance of energy limited resources; information on forced outage of generating units; transmission interface constraints; relationship between transmission and generation facilities; and projected loads and load shapes.

The CAISO's study horizon is for the period of 2009 to 2018, with individual analyses being completed for each of the years 2009, 2013, and 2018. The CAISO plans to develop and consider alternative case scenarios for future generation, retirement of some of the existing generation, future new transmission development, load growth, and demand response programs. Cases may also be developed to investigate the sensitivities of the LOLE due to various load shapes, variation in outage rates, effects of drought, and other factors.

Based on the CAISO's schedule¹ provided at the November 28-29, 2007 CAISO stakeholders meetings, the needed data for the case studies will be collected by approximately July 2008. However, the next stakeholder meeting (30% Technical Review Meeting) is not scheduled until October 2008, when about 30% of the investigation will have been carried out. Because of CAISO's proposed timing for including stakeholder input, DRA is concerned that too much of the study will be completed by the time any additional stakeholder review and input is allowed. To address this problem, DRA recommends two modifications to allow increased participation and transparency. First, at the workshops tentatively scheduled for May in this proceeding, the Commission should invite the CAISO and/or its PRRS consultant to present an update on the progress made so far in the PRRS. Second, after the data collection is completed in early to mid-summer, there should be an additional meeting at the CAISO for stakeholders to review and discuss all parameters, inputs and assumptions, scenarios and sensitivity analyses for the PRRS. This additional stakeholder meeting should occur prior to the one the CAISO has planned for October 2008 to vet publically all assumptions, inputs, and scenarios to be used by the CAISO's consultant. Every effort should be made to come to as much agreement as possible on input data, parameters, scenarios, and sensitivity analysis for PRRS at an early enough point in the

¹ CAISO Planning Reserve Requirements Study (PRRS) Study Scope and Work Plan, p. 15 (November 2007).

process to accommodate any necessary changes in direction. If there are any significant disagreements on these issues, they should be clearly noted for the Commission's benefit.

In summary, DRA recommends that:

- a. The Commission and the CAISO work collaboratively on the PRM; the Commission is responsible for setting the PRM, and the CAISO should take the lead on conducting the PRRS for consideration and possible adoption in the this proceeding.
- b. The CAISO be invited to participate and present a progress report on its PRRS study at the May 2008 workshops at the Commission;
- c. The CAISO hold an additional stakeholder meeting to discuss the parameters for the LOLE analyses after the consultant has collected all the necessary data for the case studies, in June or July of 2008, well before 30% Technical Review which is tentatively scheduled for October 2008.

2. How is the decision about an appropriate PRM to be made (i.e., how is the Commission to evaluate one PRM option over another)?

a) Reliability Metrics:

The frequency, duration, time of occurrence, and size of outages will all influence consumer costs due to outages. In California, outages due to lack of sufficient generation usually happen in the summer during super peak hours (noon to 6 p.m.), causing some customers to be curtailed by as much as 100%.

For the time being, DRA recommends using a simple metric, i.e., Expected Unserved Energy (EUE), until there is information obtained by using surveys on customer's value of service for residential, commercial, and industrial customers. Once a value of service is determined, a more complex reliability matrix can be developed and the cost of unserved energy can be balanced against the cost of increasing the system reliability to determine the optimum planning reserve margin.

DRA also notes that many outages are caused by problems with distribution system, rather than by a power shortage. As part of this proceeding, the Commission

should conduct a study to determine the impact of distribution system outages on customers, and how it compares to generation and transmission level outages. This information would help the Commission better understand the effect of the PRM on customer service reliability, and to determine what level of PRM truly increases reliability.

b) Data Sources:

DRA recommends that data sources relied upon by the Commission be the same as the final set of data to be used in the CAISO's PRRS. As recommended above, there should be an additional stakeholder meeting at CAISO this June or July to publicly vet the data to ensure that reasonable data are being utilized in determining LOLE.

c) Base Case Scenario:

The most recent CEC IEPR and investor-owned utilities Long Term Procurement Plan results should be used to determine the Base Case Scenario for load and resources. Policy objectives such as the 33% renewable resources goal by 2020 should be reflected in the future generation portfolio.

d) Change Case Resource Build out Scenarios

The Base Case Scenario should be first utilized to calculate LOLE. Then, using CEC's IEPR scenarios, additional analysis should be carried out to find out the sensitivity of LOLE to changes in load, generation mix, and other input assumptions. DRA's understanding is that these kinds of analyses will be carried out in CAISO's PRRS. DRA recommends that in the stakeholder meetings at the CAISO, these scenarios should be fully discussed. Energy Division and others should provide the necessary inputs to the CAISO in the early stages of PRRS. DRA hopes that this early input as the study parameters are set up will reduce the need for extensive discussion on these issues after the CAISO has completed its LOLE investigation.

e) Study Timeframe:

The timeframe for the CAISO's PRRS is 10-years forward (2009-2019). There will also be a study of LOLE for 2009, 2013, and 2019. DRA believes that this time frame and the years selected for full studies are reasonable.

3. Interaction with other Commission proceedings:

In addition to coordinating with other agencies, the interaction with other Commission proceedings must be considered in adopting the PRM. Currently the LTTP (R.08-02-007) is the umbrella proceeding under which the Commission coordinates all of the procurement and resource planning related proceedings, and will determine the amount of resources necessary to meet the State's needs for the next 10 years. The IOUs are required to submit their LTTP plans by May of 2009, for 2010. The OIR in this PRM proceeding estimates that the Phase 2 Decision, which would set the PRM for the compliance years 2010 and 2011, would be due in June 2009. The CAISO's PRRS is expected to be delivered on or about June of 2009.² Although these three events are roughly coordinated, DRA suggests that if possible, the CAISO's PRRS study be moved up by a month or so, in order to allow parties and the Commission time to review the Final PRRS before it is considered and possibly, adopted in this PRM proceeding. In addition, the IOUs may need additional time of a month or two to submit their plans in the LTTP proceeding, after the PRM Final Decision is issued.

In addition, as mentioned earlier in these comments, in order to better coordinate this proceeding with the CAISO's PRRS process and ensure timely input before the 30% Technical Review Study, DRA recommends that the CAISO push back part of its schedule. If the workshops in this PRM proceeding are to

² DRA recommends that the CAISO not perform the Case 2 study, as it is not needed, and will merely involve additional consultant time and expense to produce, and will complicate and delay the timing for establishing and implementing the PRM at the Commission.

have any effect on the CAISO’s PRRS study process, more time is needed for stakeholder review and comments.

A possible scheduling scenario is as follows (new dates/items in bold):

CAISO begins PRRS	Fall 2007
CAISO Data Collection for Case 1	February – July 2008
CPUC PHC on PRM	May 2008
CPUC Workshops/ CAISO Update On PRRS	May/June 2008
CAISO Additional Stakeholder Meeting	August 2008 (new)
CPUC PRM Hearings	September 2008 (+1 mo.)
CPUC Phase 1 Final Decision on Methodology	November 2008 (-1 mo.)
CAISO Scheduled 30% Technical Review Stakeholder Meeting	December 2008 (+ 2 mo.)
CAISO 70% Technical Review Meeting	February 2009 (+ 1 mo.)
CAISO 100% Technical Review Meeting	April 2009 (+ 1 mo.)
CAISO Final Case 1 PRR Study	May 2009 (-1 mo.)
CPUC Final Phase 2 PRM Decision	July 2009 (+1 mo.)
IOUs Submit LTPP Plans for 2010-11	August 2009 (+3 mo.)

a) Definition of Policy Preferred Scenarios:

Determination of the Policy Preferred Scenarios should occur in the LTPP and IEPR proceedings rather than in the PRM. The “loading order” favoring energy efficiency, demand response, combined heat and power, renewables, and clean conventional resources should be followed in determining the best portfolios. The outcome of the GHG proceeding will put all these policy choices into perspective in terms of real costs of these resources.

4. Periodic reassessment in a formal Commission proceeding:

DRA supports a periodic reassessment of the reliability levels on an as needed basis. This reassessment can be accomplished in a separate formal proceeding similar to

the current PRM proceeding. This work may turn out to be a time-consuming and complicated process. It would not be very efficient to include this periodic reassessment of the PRM in either LTPP proceeding or the IEPR process. These processes have many complicated issues to deal with. In the future, if the need for reassessment of the PRM is identified, a new proceeding can be opened to address the issues. Therein, the involved parties could allocate sufficient time and resources allocated.

5. Long-Term RA and Capacity market alternatives:

DRA believes that either the CCM or bilateral market structure the Commission adopts in Track 2 of R.05-12-013, would not impact the level of the PRM. Either choice would require reserves for reliability purposes. However, to be compatible with the State's other programs, (e.g. AMI and demand response), the role of the capacity market should eventually be reduced and the state should transition to an energy-based market.

6. Variability in PRM:

CAISO, in its PRRS, will conduct two different case study scenarios. Case 1 includes the CAISO entire grid plus one for each IOU service area; Case 2 would involve a Ten Area Study, for each of the Local Areas identified by CAISO. A number of participants at the November 28-29, 2007 stakeholder meeting at CAISO did not support Case 2 study. DRA recommends that the PRRS should be limited to Case 1. The results from Case 1 will indicate if there is any significant differences in load shape, generation mix, and other factors that would result in different LOLE and PRM among the three IOUs. DRA recommends that the issue of PRM variability and the use of a single PRM set for all IOUs or service area-specific or even load pocket – specific PRMs be discussed after the CAISO PRRS results become available.

7. Interaction with other LSEs and balancing authorities:

DRA believes that the support provided by non-Commission-jurisdictional entities in California to the three IOUs is not significant, with the exception of the hydro power

and interruptible pumping requirements of Department of Water Resources State Water Project and Metropolitan Water District. These elements are usually taken into consideration in load/resources analysis and, therefore, in LOLE and PRM analysis. The surplus generation and pump storage hydro of LADWP may also support SCE's system in emergency cases.

The Pacific Northwest's hydro capacity also provides important support. In the past, this support from non-firm, non-committed resources in Northwest during extreme load situation in California was assumed to be over 1,000 MW. However, it seems that CAISO's PRRS will only model firm and participation transactions with areas outside the CAISO to be available to California. There is no mention of non-firm support from Pacific Northwest in PRRS. This assumption should be reviewed and discussed in CAISO's stakeholder meetings.

III. PHASE 2 AND OPTIONAL PHASE 3 ISSUES, AND PERIODIC REASSESSMENTS OF THE PRM.

The overall structure of Phases 1 and 2 makes sense, and the DRA has no issues with the scope of Phase 2. DRA does recommend that if the PRM is to going to be reassessed in the future, it should be coordinated with LTPP.

With respect to the Optional Phase III, DRA does not recommend that the PRM be integrated into the modeling methodology for the LCR process. One of the reasons that many parties objected to the CAISO's Case 2 Study, is that it would be overly complicated, and would result in establishing different PRMs for the 10 different Local Areas in California. For the same reasons, DRA objects to having different PRMs established for the different Local Areas.

DRA is not opposed to Commission staff performing future reassessments based on the model developed in this OIR. However, as the OIR points out, this would require developing the in-house expertise. DRA also wants to ensure that we do not have multiple state agencies performing the same study in the future, which would be an unnecessary and imprudent duplication of functions.

Respectfully submitted,

/s/ CHARLYN HOOK

Charlyn Hook
Staff Counsel
Division of Ratepayer Advocates
California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102
Phone: (415) 703-3050
Fax: (415) 703-2262

April 25, 2008

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of “**PREHEARING CONFERENCE STATEMENT OF THE DIVISION OF RATEPAYER ADVOCATES**” in **R.08-04-012** by using the following service:

E-Mail Service: sending the entire document as an attachment to all known parties of record who provided electronic mail addresses.

U.S. Mail Service: mailing by first-class mail with postage prepaid to all known parties of record who did not provide electronic mail addresses, if any.

Executed on **April 25 2008**, at San Francisco, California.

/s/ HALINA MARCINKOWSKI

HALINA MARCINKOWSKI

N O T I C E

Parties should notify the Process Office, Public Utilities Commission, 505 Van Ness Avenue, Room 2000, San Francisco, CA 94102, of any change of address and/or e-mail address to insure that they continue to receive documents. You must indicate the proceeding number on the service list on which your name appears.

* * * * *

SERVICE LIST FOR R. 08-04-012

jmcmahon@crai.com;

Kathryn.Wig@nrgenergy.com;
ron.cerniglia@directenergy.com;
rick_noger@praxair.com;

keith.mccrea@sablaw.com;
ajkatz@mwe.com;
myuffee@mwe.com;
bblair@thompsoncoburn.com;
mmcnaul@thompsoncoburn.com;
dbandera@reliant.com;
Bob_Anderson@apses.com;
Cynthia.A.Fonner@constellation.com;
ahendrickson@commerceenergy.com;
gschott@reliant.com;
cbanks@complete-energy.com;
ej_wright@oxy.com;
sisser@goodcompanyassociates.com;

stacy.aguayo@apses.com;

chilen@sppc.com;
jgreco@terra-genpower.com;

curtis.kebler@gs.com;
dehling@klnq.com;

klatt@energyattorney.com;
douglass@energyattorney.com;

allwazeready@aol.com;
akbar.jazayeri@sce.com;
berj.parseghian@sce.com;
laura.genao@sce.com;
michael.backstrom@sce.com;
rkmoore@gswater.com;
kswitzer@gswater.com;
daking@sempra.com;
fortlieb@sandiego.gov;
lurick@sempra.com;
DGarber@sempra.com;
gbass@semprasolutions.com;

skeehn@sempra.com;
troberts@sempra.com;
tcorr@sempraglobal.com;
tbrill@sempra.com;
tbrill@sempra.com;
liddell@energyattorney.com;
rwinthrop@pilotpowergroup.com;
tdarton@pilotpowergroup.com;
tdarton@pilotpowergroup.com;
wkeilani@semprautilities.com;
dpapapostolou@semprautilities.com;
srahon@semprautilities.com;

cneedham@edisonmission.com;

kerry.eden@ci.corona.ca.us;
kurt.duvall@ci.corona.ca.us;
thunt@cecmail.org;
dorth@krcd.org;
mflorio@turn.org;
chh@cpuc.ca.gov;
kpp@cpuc.ca.gov;
nao@cpuc.ca.gov;
stephen.morrison@sfgov.org;
jhendry@sfwater.org;
achang@nrdc.org;
ek@a-klaw.com;
sls@a-klaw.com;
bill.chen@constellation.com;
evk1@pge.com;
sara.oneill@constellation.com;
bcragg@goodinmacbride.com;
jsqueri@goodinmacbride.com;
jarmstrong@goodinmacbride.com;
jwiedman@goodinmacbride.com;
jkarp@winston.com;
lcottle@winston.com;
mday@goodinmacbride.com;
edwardoneill@dwt.com;
jeffgray@dwt.com;
irene@igc.org;
crmd@pge.com;
ssmyers@att.net;
l_brown246@hotmail.com;
ALHJ@pge.com;
bkc7@pge.com;

cmmw@pge.com;
aweller@sel.com;
jchamberlin@strategicenergy.com;
ralf1241a@cs.com;
joe.paul@dynegy.com;

rfreeh123@sbcglobal.net;
alexm@calpine.com;
linda.sherif@calpine.com;
gmorris@emf.net;
cchen@ucsusa.org;
philm@scdenergy.com;
wem@igc.org;
janreid@coastecon.com;
michaelboyd@sbcglobal.net;
bmcc@mccarthylaw.com;
joyw@mid.org;

johnrredding@earthlink.net;

jweil@aglet.org;
bdicapo@caiso.com;
cmicsa@caiso.com;
CHinman@caiso.com;
grosenblum@caiso.com;
jsanders@caiso.com;
mgillette@enernoc.com;
wamer@kirkwood.com;

mary.lynych@constellation.com;
cmkehrein@ems-ca.com;
abb@eslawfirm.com;
jjg@eslawfirm.com;
jdj@eslawfirm.com;
brian.theaker@dynegy.com;
mclaughlin@braunlegal.com;
braun@braunlegal.com;
cholmes@energy.state.ca.us;
dsandino@water.ca.gov;
jluckhardt@downeybrand.com;
kdw@woodruff-expert-services.com;
kris.chisholm@eob.ca.gov;
mdoughto@energy.state.ca.us;
lterry@water.ca.gov;
hcronin@water.ca.gov;

atrowbridge@daycartermurphy.com;
jbaker@daycartermurphy.com;
dansvec@hdo.net;
notice@psrec.coop;

deb@a-klaw.com;
mpa@a-klaw.com;
alan.comnes@nrgenergy.com;
ryan.flynn@pacificorp.com;
jeff.lam@powerex.com;
RStoddard@crai.com;
chris.ohara@nrgenergy.com;
steven.schleimer@barclayscapital.com;
steven.huhman@morganstanley.com;
michael.gergen@lw.com;
jmorrissey@cgsh.com;
perlism@dicksteinshapiro.com;
lisa.decker@constellation.com;
jim.mayhew@mirant.com;
dmcfarlan@mwgen.com;
jimross@r-c-s-inc.com;
cweddington@commerceenergy.com;
tcarlson@reliant.com;
htarpley@complete-energy.com;
ptellegen@complete-energy.com;
julie.martin@bp.com;
steve.koerner@elpaso.com;
william.tomlinson@elpaso.com;
kesposito@cbcatalysts.com;
kjsimonsen@ems-ca.com;
jenine.schenk@apses.com;
mvillar@nevp.com;
emello@sppc.com;
tdillard@sppc.com;
HYao@SempraUtilities.com;
gustavo.luna@aes.com;
vitaly.lee@aes.com;
gbawa@cityofpasadena.net;
btang@ci.azusa.ca.us;
btang@ci.azusa.ca.us;
MtenEyck@ci.rancho-cucamonga.ca.us;
annette.gilliam@sce.com;
Case.Admin@sce.com;
deana.white@sce.com;
karen.lee@sce.com;
david.lloyd@nrgenergy.com;
mshames@ucan.org;
kmkiener@cox.net;
marcie.milner@shell.com;
michael.evans@shell.com;
centralfiles@semprautilities.com;
jennifer.porter@energycenter.org;
pmills@semprautilities.com;
RNicholson@Semprautilities.com;
sephra.ninow@energycenter.org;
tblair@sandiego.gov;
centralfiles@semprautilities.com;

dniehaus@semprautilities.com;
centralfiles@semprautilities.com;
jleslie@luce.com;
fmason@ci.banning.ca.us;
traceydrabant@bves.com;
jolko@ci.colton.ca.us;
luhler@riversideca.gov;
cmartin@calpine.com;
Dkolk@compenergy.com;
lkostrzewa@edisonmission.com;
pherrington@edisonmission.com;
llund@commerceenergy.com;
mfraze@anaheim.net;
ssciertino@anaheim.net;
sue.mara@rtoadvisors.com;
mdjoseph@adamsbroadwell.com;
diane_fellman@fpl.com;
rcosta@turn.org;
theresa.mueller@sfgov.org;
mramirez@sflower.org;
filings@a-klaw.com;
nes@a-klaw.com;
rsa@a-klaw.com;
sdhilton@stoel.com;
brbc@pge.com;
cbasket@enernoc.com;
rcounihan@enernoc.com;
sara.oneill@constellation.com;
TAJ8@pge.com;
vjw3@pge.com;
epoole@adplaw.com;
CEM@newsdata.com;
joshdavidson@dwt.com;
jscancarelli@flk.com;
jfieber@flk.com;
koconnor@winston.com;
tmcaster@flk.com;
vprabhakaran@goodinmacbride.com;
judyau@dwt.com;
hilary@newsdata.com;
cem@newsdata.com;
cem@newsdata.com;
lisa_weinzimer@platts.com;
alho@pge.com;
ELL5@pge.com;
GXL2@pge.com;
pcg8@pge.com;
sscb@pge.com;
SEHC@pge.com;
svs6@pge.com;
S1L7@pge.com;
debra.lloyd@cityofpaloalto.org;

rwalther@pacbell.net;
lex@consumercal.org;
c.greif@comcast.net;
k.abreu@sbcglobal.net;
mark_j_smith@fpl.com;
brflyn@flynnrci.com;
beth@beth411.com;
jak@gepllc.com;
kerry.hattevik@mirant.com;
gblue@enxco.com;
kowaleskia@calpine.com;
kowalewskia@calpine.com;
duggank@calpine.com;
wbooth@booth-law.com;
pthompson@summitblue.com;
philha@astound.net;
ted@energy-solution.com;
dirk.vanulden@ucop.edu;
george.getgen@ucop.edu;
john.rolle@ucop.edu;
mrw@mrwassoc.com;
mrw@mrwassoc.com;
dmarcus2@sbcglobal.net;
rschmidt@bartlewells.com;
nrader@calwea.org;
carla.peterman@gmail.com;
gbarbose@lbl.gov;
rhwisner@lbl.gov;
oren@ieor.berkeley.edu;
ksims@siliconvalleypower.com;
cpechman@powereconomics.com;
sberlin@mccarthylaw.com;
rogerv@mid.org;
tomk@mid.org;
brbarkovich@earthlink.net;
demorse@omsoft.com;
martinhomec@gmail.com;
aivancovich@caiso.com;
bburns@caiso.com;
remmert@caiso.com;
dwithrow@caiso.com;
jderosa@ces-ltd.com;
jmclain@caiso.com;
jgoodin@caiso.com;
kjohnson@caiso.com;
kalmeida@caiso.com;
Lkristov@caiso.com;
ppeatingill@caiso.com;
rsmutny-jones@caiso.com;
saeed.farrokhpay@ferc.gov;
SLiu@caiso.com;
e-recipient@caiso.com;

dennis@ddecuir.com;
david@branchcomb.com;
kenneth.swain@navigantconsulting.com;
kdusel@navigantconsulting.com;
eolson@navigantconsulting.com;
pmaxwell@navigantconsulting.com;
Les.Pereira@ncpa.com;
scott.tomashefsky@ncpa.com;
Tony.Zimmer@ncpa.com;
edchang@flynnrci.com;
gdeshazo@caiso.com;
Audra.Hartmann@Dynergy.com;
dcarroll@downeybrand.com;
wynne@braunlegal.com;
pduvair@energy.state.ca.us;
rachel@ceert.org;
blaising@braunlegal.com;
steven@iepa.com;
ferguson@braunlegal.com;
lmh@eslawfirm.com;
hcronin@water.ca.gov;
mniroula@water.ca.gov;
kmills@cfbf.com;
kmills@cfbf.com;
katie@iesolutionsllc.net;
karen@klindh.com;
californiadockets@pacificcorp.com;
dws@r-c-s-inc.com;
jesus.arredondo@nrgenergy.com;
gifford.jung@powerex.com;
fmobasheri@aol.com;
agc@cpuc.ca.gov;
sap@cpuc.ca.gov;
bbc@cpuc.ca.gov;
cab@cpuc.ca.gov;
dbr@cpuc.ca.gov;
djh@cpuc.ca.gov;
edd@cpuc.ca.gov;
eks@cpuc.ca.gov;
fxg@cpuc.ca.gov;
jk1@cpuc.ca.gov;
joc@cpuc.ca.gov;
jw6@cpuc.ca.gov;
kdw@cpuc.ca.gov;
kql@cpuc.ca.gov;
kd1@cpuc.ca.gov;
lau@cpuc.ca.gov;
msw@cpuc.ca.gov;
mjd@cpuc.ca.gov;
unc@cpuc.ca.gov;
ner@cpuc.ca.gov;
ska@cpuc.ca.gov;

rmm@cpuc.ca.gov;
rls@cpuc.ca.gov;
rmt@cpuc.ca.gov;
skh@cpuc.ca.gov;
seb@cpuc.ca.gov;
skg@cpuc.ca.gov;
tbo@cpuc.ca.gov;
amckenna@caiso.com;
Claufenb@energy.state.ca.us;
Cleni@energy.state.ca.us;
dvidaver@energy.state.ca.us;
jdiamond@eob.ca.gov;
kgriffin@energy.state.ca.us;

lwong@energy.state.ca.us;
Imarshal@energy.state.ca.us;
mpryor@energy.state.ca.us;
mjaske@energy.state.ca.us;
mringer@energy.state.ca.us;
rmiller@energy.state.ca.us;
jwoodwar@energy.state.ca.us;
ntronaas@energy.state.ca.us;
dbeck@energy.state.ca.us;
cmee@water.ca.gov;

ikwasny@water.ca.gov;
jgeorge@water.ca.gov;
jpacheco@water.ca.gov;