CALIFORNIA ISO

California Independent
System Operator

December 8, 2003

Attn: Commission's Docket Office
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

RE: Docket # R.01-10-024, Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development

Dear Clerk:

Enclosed for filing please find an original and five copies of the Comments of The California Independent System Operator Corporation on the Proposed Decision of Judge Walwyn and the Alternate Proposed Decision of Commissioner Peevey Both Mailed on November 18, 2003 in Docket # R. 01-10-024. Please date stamp one copy and return to California ISO in the self-addressed stamped envelope provided.

Thank you.

Sincerely,

Anthony J. Ivancovich
Senior Regulatory Counsel

Cc: Attached Service List

BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development	R.01-10-024

COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION ON THE PROPOSED DECISION OF JUDGE WALWYN AND THE ALTERNATE PROPOSED DECISION OF COMMISSIONER PEEVEY BOTH MAILED ON NOVEMBER 18, 2003

Anthony J. Ivancovich
Senior Regulatory Counsel
California Independent System Operator
151 Blue Ravine Road
Folsom, CA 95630
Telephone: 916-608-7135
Facsimile: 916-608-7296

Attorney for the
California Independent System Operator

Dated: December 8, 2003

TABLE OF CONTENTS

TABLE OF AUTHORITIES

CPUC Rules

Others

BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development	R.01-10-024

COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION ON THE PROPOSED DECISION OF JUDGE WALWYN AND THE ALTERNATE PROPOSED DECISION OF COMMISSIONER PEEVEY BOTH MAILED ON NOVEMBER 18, 2003

I. INTRODUCTION

In accordance with California Public Utilities Commission ("CPUC") Rules 77.2 and 77.3, the California Independent System Operator Corporation ("ISO") respectfully submits its comments on the Proposed Decision of Judge Walwyn ("Proposed Decision") and the Alternate Proposed decision of Commissioner Peevey ("Alternate") both mailed on November 18, 2003.[1] The ISO submits that the Proposed Decision, the Alternate and the Lynch Alternate constitute major positive steps toward ensuring resource adequacy in California. However, the ISO believes that the Alternate provides a far more comprehensive and effective framework for promoting resource adequacy. Accordingly, the ISO urges the CPUC to adopt the Alternate, along with the limited modifications thereto proposed in these Comments.

The ISO believes that a comprehensive and effective resource adequacy requirement is needed for the following reasons: (1) to provide, in the long-term, a platform for future

[1] On December 4, 2003, Commissioner Lynch issued an Alternate Proposed Decision ("Lynch Alternate"). The instant Comments also will briefly identify the ISO's significant concerns with the Lynch Alternate.

investment in California's electric infrastructure; (2) to support, in the shorter-term, reliable system operations; (3) to mitigate the amount and effect of market power in California's wholesale electricity markets by encouraging utilities to enter into long-term contracts; and (4) to support the Federal Energy Regulatory Commission's ("FERC") approval of more effective market power mitigation measures (including local market power mitigation measures) and more favorable market design elements as part of the ISO's Comprehensive Market Design 2002 Proposal ("MD02"). In particular, a resource adequacy requirement is necessary to assure that sufficient resources are procured in forward markets because the ISO does not have the ability to "create" additional resources in the day-ahead/real-time time frames to provide for reasonable spot market prices and to assure the availability of sufficient resources to meet load.

As the ISO indicated in its testimony filed in this proceeding, an effective resource adequacy requirement should include the following elements: (1) a well-defined requirement that the utilities procure in the forward markets, sufficient resources to meet their projected peak load plus adequate planning reserves,[2] with reasonable limitations on spot market purchases for capacity needs;[3] (2) consistent definitions and counting conventions; (3) a requirement that resources procured by utilities be deliverable to load, and long-term resource plans be specific enough to assess long-term transmission needs; (4) a process to review utility procurement plans, including, an annual process to update them and a monthly reporting requirement to ensure they are on-track; (5) an explicit obligation to procure at least one month ahead of time adequate capacity to meet 100% of the projected peak load, plus the planning reserve level; (6) a process to make the resources procured by the utilities known and available to the ISO for commitment

---

[2] In particular, the ISO argued that the investor owned utilities should be required to procure sufficient capacity in the forward market to serve their forecasted load, plus a planning reserve margin of 17%.

[3] The ISO argued that the utilities should procure sufficient capacity to (1) meet 90-95 percent of their projected peak load plus the applicable planning reserve margin in the year-ahead time frame and (2) meet 100% of their projected peak load plus the applicable planning reserve in the month-ahead time frame.

and use, if needed, in the day-ahead, hour-ahead and real time markets; and (7) well-defined *ex ante* cost recovery provisions and clear *ex ante* consequences for a failure by the utilities to meet their resource adequacy obligations.

The Alternate substantially accomplishes these objectives and will ensure a more effective resource adequacy requirement than will the Proposed Decision and the Lynch Alternate. As such, the CPUC should reject the Proposed Decision and the Lynch Alternate and approve the following elements of the Alternate which the ISO believes are essential for an effective resource adequacy framework in California: (1) a 17 percent planning requirement; (2) an effective date for the reserve requirement of January 1, 2005; (3) a requirement that utilities procure 90% of their capacity requirements, *i.e.*, their load requirement, plus the planning reserve margin, a year ahead, and 100% of their capacity requirements a month ahead; (4) "reasonable consequences" for failure to procure sufficient capacity and *ex ante* cost recovery mechanisms; (5) a deliverability requirement; and (6) a reporting requirement whereby utilities demonstrate on a monthly basis that they have procured sufficient capacity.[4]

The Alternate has left certain other elements of the resource adequacy framework to be resolved via the workshop process without making a threshold declaration that they are essential elements of a resource adequacy plan. These elements include (1) workable counting rules, and (2) standardized load-forecasting procedures. These elements are integral to an effective resource adequacy framework, and the ISO urges the CPUC to issue a final ruling on the details of these elements consistent with the discussion herein. Moreover, the CPUC should, prior to the workshops, declare as a threshold matter that workable and logical counting rules and consistent,

---

[4] The Alternate proposes to adopt the general concepts identified in items (4), (5) and (6) above, but has left the details to be resolved in the workshops. The CPUC should, as a threshold matter, find that deliverability, consequences for non-compliance, and an effective reporting mechanism are essential elements of a resource adequacy plan.

standardized load forecasting guidelines are essential elements of the resource adequacy program the CPUC ultimately will adopt.[5]

One issue that was not addressed in either the Proposed Decision, the Lynch Alternate or the Alternate is the ISO's ability to use resources that the utilities have "locked-up" through the procurement process. Any well-defined resource adequacy plan must provide that resources procured by load serving entities ("LSE's") are made available to the ISO when they are needed to balance supply with load. The CPUC should adopt such a requirement as a threshold matter and permit the details to be worked out in a collaborative and coordinated manner consistent with the discussion herein.

Adoption of the Alternate with the modifications proposed herein, will enable the CPUC to implement a resource adequacy regime that will effectively provide for the forward procurement by the utilities of the resources necessary to serve their loads. This requirement is indispensable to assure reliable and cost effective electric service to consumers. The ISO stands ready to implement the resource adequacy requirements approved by the CPUC on a control area wide basis and will continue to work closely with the CPUC to take whatever steps are necessary assure resource adequacy in the State of California to the maximum extent possible.

Consistent with CPUC Rule 77.3, the ISO has attached hereto in Appendix A its proposed revisions to the respective Findings of Fact and Conclusions of Law in the Alternate.

II. KEY ELEMENTS OF THE ALTERNATE THAT THE CPUC SHOULD ADOPT

A. A 17 Percent Planning Margin Is Appropriate

[5] The Alternate, the Lynch Alternate and the Proposed Decision left these matters for discussion in the workshops and did not make any threshold findings regarding them.

The Proposed Decision (and the Lynch Alternate) found that the utilities should be required to procure a 15% planning reserve. Proposed Decision at 227. The Alternate found that it is appropriate for the utilities to procure a 17% planning reserve +/- 2%, as proposed by the ISO and the California Power Authority ("CPA"). Alternate at 199.

The ISO urges the CPUC to adopt a 17% planning reserve. A 17% planning reserve level is consistent with historical reserve levels in California and other regions. For example, PJM's Installed Reserve Margin requirement is currently 17% (it was 19% during the early months of 2003) and New York has an 18% requirement. These are tried and true reserve levels that have been effective from a reliability standpoint.

Further, in its Final Decision D03-001, issued on January 17, 2003 in Docket No. 2002-07-01, the CPA recommended a 17% reserve margin for the State. The CPA's recommendation was based on a thorough review of historical information. According to CPA witness Mr. Fluckiger, a great deal of analysis and experience went into the CPA's recommendation of a 17% reserve margin. Tr. (Fluckiger) at 5266: 14-28. He indicated "historic outages rates, historic levels of planning reserve and the behavior of market participants during the electricity fiascoes of early 2000, and all of those relevant facts were considered in the recommendation and the rule that was adopted by the board of the Power Authority." Tr. (Fluckiger) at 5266.

In the ISO's opinion, the planning reserve margin is essentially the insurance policy for California consumers. Based on the events in the California market in 2000 and 2001, the ISO believes that more "insurance" is appropriate. California should diligently seek to avoid the problems that occurred during the energy crisis—problems that were caused in large part by a lack of long-term contracting and an over-reliance on the spot market. A 17% planning reserve provides a more appropriate level of insurance than does a 15% reserve margin. In particular, it

will ensure more reliable operation of the transmission grid, promote efficient investment in electric infrastructure and more effectively reduce market volatility. In that regard, from an operational perspective and based on ISO peak load, the loss of a two percent reserve on a 45,000 MW demand requirement, places approximately 900 MW at risk. This 900 MW would be subject to spot market volatility and/or out-of-market purchases by the ISO (if there are inadequate supplies made available to the ISO in the real time energy market). Assuming that the energy is even available, these out-of-market purchases rarely result in desirable prices. Under a worst-case scenario, this is 900 MW of load that would have to be shed if there are not adequate resources lined-up to serve such load. Such an occurrence would be approximately equivalent to the load requirement of the San Francisco peninsula or 675,000 metered customers. Clearly, a small percentage capacity shortage can affect a large number of customers and result in significant economic costs. In terms of direct costs associated with blackouts, estimates in the San Francisco Bay Area run as high as $1 million per minute of lost economic output for high-tech firms. *See* EPRI White Paper, *The Western States Power Crisis. Imperatives and Opportunities* (June 25, 2001).

B. The Reserve Requirement Should Be Effective By January 1, 2005

The Proposed Decision (and the Lynch Alternate) conclude that the utilities should meet the 15% reserve requirement no later than the end of 2008, with interim benchmarks established. Proposed Decision at 23. The Alternate directs the utilities to meet the 17% reserve requirement no later than the beginning of 2005. Alternate at 199. The Alternate also states that "having the ISO implement these provisions for all market participants will assure resource adequacy to the largest degree possible across the State." Alternate at 29.

The ISO submits that the proposal in the Alternate is reasonable and should be adopted by the CPUC. Parties have acknowledged that there currently is a surplus of resources throughout the region. This makes the conditions favorable for the utilities to begin procuring resources on a long-term basis.

The rationale given for a longer phase-in period is the concern that the utilities might be at a competitive disadvantage if they are required to ramp up too quickly from their current resource position to a level that includes a planning reserve margin of 17%. In other words, they might be subject to the exercise of market power by suppliers. The ISO is sympathetic to the concern that utilities should not be placed at a competitive disadvantage vis-à-vis suppliers. However, the ISO believes that the current availability of excess resources argues for a shorter phase-in period. The ISO is very concerned that, by allowing an extended phase-in period, the current resource balance that the utilities claim is favorable will degrade. The result would be that the full planning reserve margin would become effective precisely at the time when supplies become tighter and more expensive. As ISO witness Dr. Sheffrin emphasized, it makes sense to "lock-in" resources during times such as now when, according to the testimony of the Joint Parties, there is considerable excess. Tr. (Sheffrin) at 4473: 7-11. It makes no sense whatsoever to wait until supply margins are tighter to negotiate capacity contracts. If it is expected that supply margins will narrow in the future, it is all the more imperative that the utilities take steps as soon as practicable to procure supplies to serve California.

In particular, the ISO is concerned that unless the utilities take steps in the near term to enter into commitments with existing and potential new resources, the excess that is currently available -- and which many parties expect to be available through 2008 --may narrow considerably well before 2008. In that regard, on October 10, 2003, the ISO published a new

Five Year Assessment (2004-2008). *See www.*caiso.com. The assessment shows that there could be a supply shortage by 2008 under base case conditions for resources and, more importantly, shows that, under certain adverse conditions (*e.g.*, higher than average temperatures, low hydro in the West), there could be supply problems as early as Summer 2004. Further, this assessment was undertaken before the recent "mothballing" of approximately 1,400 MW of generation. The possibility also exists that an additional 3,000-4,000 MW of generation could be "mothballed" or retired. If this were to happen, the supply situation would be significantly more tenuous than that reflected in the Five-Year Assessment. Therefore, requiring a reserve requirement to become effective in 2005 could significantly help minimize the risk of mothballing and/or retirement of existing capacity.

In any event, it is pure speculation at this time whether the utilities would even be subjected to the exercise of market power by suppliers if the reserve requirement is made effective January 1, 2005. The State's long-term contracts already cover approximately 70 percent of the utilities' net short load requirement.[6] This will significantly limit the utilities' exposure to any potential exercise of market power by suppliers and, given that there is an admitted surplus of resources currently – and the utilities only need to procure a limited amount of capacity – it is questionable whether the utilities will be subjected to any market power. If the Alternate is adopted, and the utilities find that they are being subjected to market power, then it would be appropriate for them to bring this matter to the CPUC's attention and for the CPUC to consider extending the phase-in period. Further, the Alternate contemplates a possible 2% deviation from the 17% reserve requirement. Thus, the utilities would have sufficient flexibility to deal with a situation where suppliers are exercising market power. However, the mere

---

[6] *See* California Independent System Operator Corporation, 2002 Annual Report on Market Issues and Performance, p. E-7 (April 2003)

potentiality that suppliers might exercise market power should not deter the CPUC from adopting the proper decision now, *i.e.*, approving a 17% reserve margin effective January 1, 2005, while retaining the flexibility to extend the phase-in period if the utilities encounter the exercise of market power by suppliers.

C. The Utilities Should Be Required To Procure 100% Of Their Capacity Needs A Month In Advance

The Proposed Decision concludes that the utilities should procure 90% of their capacity needs a year in advance; however, the Proposed Decision does not impose a requirement that the utilities procure a specified percentage of their needs a month in advance. Proposed Decision at 218. The Lynch Alternate only establishes a requirement (by 2005) that utilities forward contract 90% of their summer peak needs a year in advance (subject to adjustment if implementation results in either significantly increased costs or fosters collusion and/or the exercise of market power in Western energy markets). Lynch Alternate at 12. The Alternate established a requirement that utilities forward contract 90% of their capacity needs a year in advance and 100% of their capacity needs a month in advance. Alternate at 23-24.

The ISO strongly supports the Alternate on this issue. It is extremely important that utilities procure sufficient capacity to meet 100% of their projected peak load, plus the applicable planning reserve, in the month-ahead time frame. Such a requirement precludes the utilities from placing reliable and reasonably priced service to load at risk, by waiting until the last minute to procure the resources needed to serve load.[7] The ISO emphasizes that procuring 100% of the capacity obligation on a month ahead basis is not the same as purchasing energy to cover the

[7] It is well chronicled that significant contributing factors to the energy crisis in 2000-2001 included over-reliance on spot market purchases and a lack of long-term contracts A 17% reserve requirement, as well as a requirement that LSEs procure100% of their capacity requirements by the month-ahead, will promote adequate forward procurement of capacity, ensure that sufficient, competitively-priced resources are available in real time, and encourage the development of needed infrastructure in California.

peak load a month ahead. The Alternate only requires utilities to procure 100% of their capacity requirement by the month-ahead, it does not require the utilities to purchase 100% (or, for that matter, any specified percentage) of their energy needs by the month ahead.[8] A primary benefit of a liquid spot market for energy is that it provides entities with an opportunity to take advantage of less expensive energy supplies that become available and swap out their more expensive resources. Buying capacity is significantly cheaper than buying energy and should not impose an undue financial burden on the utilities and on consumers. For example, Spin capacity prices in the ISO market during 2002 and 2003 were $4.70 and $6.77, respectively, and Non-Spin prices were $2.14 and $4.39, respectively. On the other hand, energy prices in 2002 and 2003 averaged $52.60/MWh and 68.53/MWh.[9] *See* www.oasis.caiso.com. Certainly, the amounts paid out to "reserve" capacity will not amount to anywhere near the billions of dollars California was forced to spend on over-priced spot market energy during the crisis. California witnessed first hand in 2000-2001 what happens when capacity is not locked-up in advance, and utilities must rely on last minute, expensive purchases to serve load.

California must seek to avoid a reoccurrence of such events by requiring that 100 percent of capacity requirements be procured a month in advance. Waiting until the day ahead or real time frames for firming up capacity, even in the context of excess supplies available in the market, can be problematic. As ISO witness Mr. Pettingill testified, the fact that there are supplies available in the market does not ensure that these will be made available to California. Tr. (Pettingill) at 4363: 22-28; 4364: 1-5; 4408: 9-14. California LSEs are only one of many

---

[8] Adequate capacity (*i e.*, peak load plus 17%) can be lined up a month ahead through a mix of energy purchase contracts, ancillary services purchases, and availability contracts. Under an availability contract, the buyer pays a small sum to the seller to be in the market, but the supplier can bid its energy at any price (subject bid caps and market power mitigation measures such as AMP). The abundance of supply would then put downward pressure on spot market prices

[9] Similarly, the average capacity price in PJM is approximately $45/MW-day which translates into $16.5/kW-year or about $1.88/MWh. *See www pjm com/markets/capacity-credit/market-results html.*

potential purchasers who could be vying for the "excess capacity." As the CPUC is no doubt aware, demand in the remainder of the West is growing at a rapid pace, particularly in the Southwestern states. This demand will be competing with California demand for limited supply resources more and more in the future. An obligation to meet capacity requirements by the month-ahead will ensure that resources are locked up to serve California load.[10]

A month ahead requirement allows for an orderly and timely process of identification by the utilities of the resources they will rely on to meet their load, communication of this information to the ISO and to the CPUC, and an opportunity before the fact to identify any potential deliverability or other concerns. If a utility is short on resources, there would still be time to take more measured actions to procure capacity, rather than rely on resources only potentially available in the day ahead/real-time timeframes. Because all necessary commitments would be made at least a month ahead of time, the risk that either the utilities or the ISO would be scrambling at the last minute to obtain power under adverse conditions will be significantly reduced. *See* Tr. (Sheffrin) at 4423: 22-28.

Moreover, the requirement that utilities purchase 100% of their capacity needs in the month ahead time frame does not limit the ability of utilities to use short-term (*i.e.*, less than one year) capacity purchases. Thus, the utilities will not lose any flexibility in procuring resources for their customers when market conditions are optimal.[11] Moreover, a requirement to procure adequate capacity on a month-ahead basis does not in any way preclude the utilities from purchasing cheap energy that is available after the month ahead because the utilities are not

---

[10] Waiting until the last minute to procure resources creates the risk that at the last minute resources may not be available or may be available only at a very high price Further, as Dr Sheffrin testified, even fairly high levels of excess capacity can quickly evaporate in adverse conditions, such as dry hydro conditions or a West-wide heat wave. Tr. (Sheffrin) at 4412: 22-28, 4413: 1-5.

[11] As Mr. Pettingill and Dr Sheffrin explained, up to the month-ahead deadline, the utilities would have substantial flexibility as to when to make their capacity purchases, and as to the length of time of any commitments they make. Tr. (Pettingill) at 4426: 16-28, 4427: 1-3, tr (Sheffrin) at 4425.

being required to procure 100% of their energy needs a month ahead. Alternate at 13. To the extent that, after the month ahead, the utilities can find energy that is cheaper than the energy they have a right to purchase under their capacity contracts, they are in no way prejudiced or financially harmed by procuring such energy. Thus, the Alternate accords the utilities significant flexibility to go out and find cheaper supplies prior to the ISO's real time market (and make energy purchases when market conditions are optimal), while greatly minimizing the potential for problems in the day ahead and real time frames.

The Lynch Alternate only establishes a requirement that the utilities forward contract for 90% of their summer peak capacity needs. This proposal clearly does not provide sufficient "insurance" to California consumers. While it may be assumed that adequate resources during the summer months would also be available for the remaining months of the year, there is no assurance of such because California utilities would not have "locked them up." This approach is inadequate and could unnecessarily expose consumers to high spot market prices and potential curtailments during non-summer months. As the CPUC is well aware, a number of California blackouts occurred during the off-peak winter months. Further, price spikes regularly can occur during the shoulder months, especially when there are "heat waves," low hydro levels, and/or significant quantities of capacity are on scheduled outages.[12]

D. A Compliance/Enforcement Mechanism Is Necessary

The Proposed Decision and the Lynch Alternate do not contemplate any *ex ante* financial disincentive (*e.g.*, surcharge) for utilities that fail to meet their forward capacity obligations and are able to rely on the available spot market energy before and during any declared staged

---

[12] *See* Motion for Leave to File Answer and Answer of the California Independent System Operator Corporation to Protests, Docket No ER02-1656, p. 27 and Attachment A (June 17, 2002)

emergency. On the other hand, the Alternate recognizes that there should be "reasonable consequences" for utilities that fail to procure sufficient reserves. Specifically, the Alternate suggests that there should be a surcharge on real-time energy purchases for entities that fail to meet the month-ahead capacity obligation, but only in the event of a staged emergency. The Alternate requests that the ISO propose a surcharge that would be applicable during staged emergencies and present such surcharge proposal at the December 10 workshop. Alternate at 33.

The ISO will present a surcharge proposal at the workshop and looks forward to working closely with all parties to develop a fair and effective compliance mechanism. The ISO generally supports the position adopted in the Alternate. In that regard, the ISO believes that financial penalties should apply if a utility fails to procure sufficient capacity on a year ahead and month-ahead basis, and the utility subsequently purchases any energy in the ISO's spot markets (day-ahead, hour-ahead, or real-time)-- whether or not the ISO is in a staged emergency. [13] Moreover, such utilities should be designated for first curtailment in the event of a reserve deficiency. [14] Exh. 87, Pettingill/Sheffrin Opening Testimony at 23. For a resource adequacy framework and a monthly reliability obligation to be meaningful, it is necessary that there be consequences for a failure to meet the obligations. Utilities that fail to procure sufficient capacity far enough ahead of real-time operation should be held accountable in a manner that will adequately deter recurrence of such performance. The Proposed Decision and the Lynch Alternate fail in this respect. Proper incentives are necessary to motivate compliance with the resource adequacy

[13] The Lynch Alternate states that the CPUC has already addressed the issue of penalties. Lynch Alternate at 13 However, the ISO does not believe that the CPUC's previous decisions contemplated this more effective *ex ante* approach.

[14] The Lynch Alternate states that the CPUC has already addressed the issue of penalties Lynch Alternate at 13 However, the ISO does not believe that the CPUC's previous decisions contemplated this more effective *ex ante* approach.

requirement. Otherwise, there is little incentive for utilities to procure, prior to real time, sufficient resources to meet their load obligations.

Moreover, it is important that penalties not just apply to spot market purchases during staged emergencies. The ISO is concerned that in the absence of such an approach, LSEs may be encouraged to take the risk that supplies will be readily available in the spot market and that the ISO will not enter a staged emergency, thereby avoiding having to pay the real-time energy purchase surcharge. In other words, the LSEs could be found "leaning" on other LSEs without having to pay any cost for doing so. This is essentially a form of cross-subsidization. LSEs should be discouraged from playing this type of "Russian Roulette" and effectively "free-riding" on those LSEs that did properly procure sufficient capacity. The Alternate's proposed, but limited, approach is a step in the right direction. However, in the end, it may diminish the value of the "insurance" purchased.

E. A Meaningful Monthly Reporting Requirement Is A Necessary Element Of An Effective Resource Adequacy Program

The Proposed Decision found that the CPUC should work with the ISO and others to develop reporting requirements for the utilities so they can demonstrate to the ISO and the CPUC that they have procured sufficient reserves. Proposed Decision at 12. The Alternate found that "LSEs should demonstrate on a monthly basis that they have procured sufficient capacity." Alternate at 34. The Alternate also concluded that the monthly reporting should not be burdensome or duplicative. Accordingly, the Alternate directed the utilities to propose a process for demonstrating to the ISO and the CPUC on a monthly basis that they have adequate reserves. *Id.*

The ISO supports the principle enunciated in the Alternate that there should be a monthly reporting requirement for the utilities to demonstrate that they have procured sufficient reserves. The ISO looks forward to receiving a proposal from the utilities and working with them to develop an effective reporting mechanism that is not unduly burdensome. As the Alternate recognizes, "[i]n order to be able to assure grid reliability and minimize costly and inefficient mechanisms to assure adequate capacity, it is reasonable that the ISO knows what resources will be available and that the LSEs have met their capacity requirements." Alternate at 34. Accordingly, the CPUC should approve an adequate monthly reporting requirement. As described in the testimony of Mr. Pettingill and Dr. Sheffrin, "the utilities should be required to provide to the CPUC a monthly compliance report setting forth a calculation of their monthly reliability obligation (based on their monthly peak load, along with the applicable target reserve level), and the resources that the utilities have procured to meet their obligation " Exh. 87, Pettingill/Sheffrin Opening at 23. The ISO believes that the report should be provided to both the CPUC and to the ISO in order to monitor compliance. *Id.*

The monthly report serves two purposes. First, it provides a mechanism for enforcing the monthly reliability obligation. In addition, the report provides important information to the ISO and provides a basis for the "hand-off" of resources to the ISO. Making available to the ISO information regarding the resources that the utilities have procured to meet their loads will significantly assist the ISO in operating its markets and maintaining grid reliability, without the current guess work as to how many resources the utilities will in fact bring to the table in real time, and what level of additional resources will be required to operate the system reliably. To meet these objectives, the monthly reporting mechanism must allow for accurate and timely assessment during each reporting period.

The ISO is sensitive to the fact that the utilities should not be overly and unnecessarily burdened with reporting requirements and supports steps that will make the reporting requirement less burdensome on the utilities, as well as the CPUC and the ISO. For example, to the extent these reports are providing the same information, the ISO would accept integrating this proposed monthly report with other reports that are already prepared by the utilities to avoid a duplication of efforts as recommended by Mr. Alvarez on behalf of PG&E. Exh. 29, Pacific Gas and Electric Company's Rebuttal Testimony PG&E's Long-Term Procurement Plan and 2004 Short-Term Procurement Plan at 7-16.

F. A Well-Designed Resource Adequacy Requirement Must Adequately Address Deliverability Issues

Deliverability standards should be one of the issues set for discussion in the workshop. The Proposed Decision and Lynch Alternate do not propose to discuss the issue of deliverability in the December 10 workshop; however, the Proposed Decision suggested working on deliverability after the December 10 workshop. Proposed Decision at 47. On the other hand, the Alternate concluded that "Deliverability is an essential criteria for IOU capacity contracts." Alternate at 31. The Alternate requested the ISO to propose a definition of resource deliverability for use in contracts that will count toward IOU resource adequacy in the workshops scheduled for December 10, 2003. *Id.*

The ISO agrees with the conclusion in the Alternate that deliverability is essential in any capacity contract. A well-designed resource adequacy requirement must address deliverability, and the CPUC should make a threshold declaration that utilities must demonstrate the deliverability of the resources they procure. Specifically, utilities must be able to show that the supplies they intend to procure to meet their load requirements can be delivered to load when

needed. Otherwise, such resources are of little, if any, value for planning purposes. The Alternate accomplishes that objective. The ISO is prepared to propose a deliverability standard at the December 10, 2003 workshop with the assumption that the CPUC will thereafter move expeditiously to establish a formal and specific deliverability requirement.

A specific, clear deliverability standard should be developed promptly. This is essential so that the utilities will be able to "count" their resources properly to determine whether they satisfy the planning reserve margin.

The ISO also supports the conclusion in both the Proposed Decision and the Alternate that "a minimum requirement is that the IOUs work with the ISO on defining conceptual scenarios for resources imported into the ISO control area and deliverable to individual IOU's load, so that after June 2004 [revised long-term] plans are filed, the ISO can timely run combined scenarios, serve testimony, and fully participate in our hearing process." Conclusion of Law 42 in the Alternate; Conclusion of Law 49 in the Proposed Decision. More specific long-term resource plans would allow long-lead time transmission project needs to be assessed and coordinated among the three utilities.[15] As Mr. Sparks testified, to undertake meaningful deliverability analyses of the utilities long-term procurement plans, more specific information is required about the location of the resources the utilities intend to rely on to meet their needs. Tr. (Sparks) at 3858: 14-17. At a minimum, conceptual scenarios would have to be developed where utilities that intend to rely on "generic" resources would identify specific areas where the

---

[15] All of the proposed decisions adopt the SCE proposal that long-term plans be submitted "as part of the utilities' GRC showing" (Alternate at 184) The ISO is concerned that such an approach may inject significant uncertainty, thereby reducing the accuracy of the integrated analysis that must be performed across the combined utility service areas. The location and nature of the expected resources is an essential element of this study and can only come from the utilities' long-term resource adequacy plans. If the CPUC continues its practice of staggering the utility GRC schedule, then the integrated study will be using data that is current for one utility, while the others are one year and two years old respectively The ISO is not opposed to a reporting period of three years but believes staggering of the data may cause the accuracy of the integrated analysis to be significantly diminished.

resources would be located. Tr. (Sparks) at 3864: 27-28; 3865: 1-8. Mr. Sparks noted that a coordinated deliverability analysis is required looking at the plans of all three utilities, and the resulting loadings on various import paths and internal paths within the ISO system. Tr. (Sparks) at 3864: 9-15.

Finally, the ISO notes that it has been developing a deliverability testing procedure as part of in connection with the ISO's filing to comply with FERC Order No. 2003, *i e.,* the large generator interconnection final rule,[16] and has been in discussions with the utilities and other stakeholders. The ISO will be fully prepared to propose a deliverability testing procedure for resources that will count towards utilities' reserve requirements at the upcoming workshop.

III. THE ISO'S GENERAL POSITION ON RESOURCE COUNTING AND LOAD FORECASTING

Neither the Proposed Decision, the Lynch Alternate or the Alternative offered specific recommendations regarding a couple of issues set for resolution in the workshop process, *i.e.*, the appropriate standards for load forecasting, and resource counting. The ISO looks forward to working closely with the parties to resolve such issues in the workshop process. Below, the ISO sets forth its general position on these issues. These issues are important and need to be resolved in a satisfactory manner in order to ensure the establishment of an effective resource adequacy program. Although the ISO recognizes that the details of these issues will be addressed in the workshop, the CPUC should offer guidance by making a threshold declaration that consistent, standardized and logical conventions for the calculation of load forecasts and the counting of resources are essential elements of the resource adequacy plan.

---

[16] *Standardization of Generator Interconnection Agreements and Procedures*, 104 FERC ¶ 61,103 (2003)

As ISO witness Thomas explained in her testimony, the long-term plans of the utilities were very difficult to understand and assess because there was no consistency in the methodology to determine load forecasts, or to report resources. Exh. 3, Thomas Opening at 3-4. While the ISO acknowledges that assumptions may change from utility to utility, the ISO is concerned because there is no consistency even on fundamental issues such as whether the load forecast to be used to determine resource adequacy is a 1-in-2 year load forecast or a 1-in-10 year load forecast, or whether capacity is reported as installed capacity, dependable capacity or some other measure. See Tr. (Pettingill) at 4454: 4-10. As most parties in the case agreed, to put into place a well-understood resource adequacy requirement, it is necessary to better define loads, determine how resources are counted and develop deliverability requirements. The method of counting resources directly affects the reserve margin in real time. Standardized guidelines for resource counting and load forecasting are necessary to ensure consistency across the Control Area, ensure that adequate reserves are available in real time, and deter any inappropriate manipulation of the results. Absent consistent, standardized guidelines, it will be difficult for the CPUC and the ISO to determine in a timely manner compliance with the resource adequacy requirements. The ISO supports the workshop process as a means to develop a more detailed set of requirements for load forecasts, counting conventions and deliverability analyses.

IV. A Well-Designed Resource Adequacy Requirement Should Provide For Use Of Resources By The ISO When They Are Needed To Balance Supply With Load

Neither the Proposed Decision, the Lynch Alternate or the Alternate address the issue of the ISO's use of resources procured by the utilities when needed to balance supply with load. This is an important issue that needs to be addressed in any final order. In particular, the CPUC

should declare that the ISO must be able to utilize resources procured by the utilities when such resources are not otherwise scheduled in the day ahead market.

Under the ISO's MD02 proposal, if scheduling coordinators fail, in the aggregate, to schedule sufficient resources to serve ISO-forecasted load, the ISO would commit additional resources through the proposed residual unit commitment ("RUC") mechanism. The Alternate supports the ISO's RUC proposal. Alternate at 27. However, absent a requirement to make resources available to the ISO for possible commitment through the RUC mechanism, the RUC feature will be ineffective, and the ISO will not be able to commit sufficient resources to serve the next-day's forecasted load. Today, the ISO satisfies this requirement through the FERC-established Must-Offer Obligation, in combination with the Must-Offer waiver process. Under MD02, the ISO has proposed to extend the Must-Offer obligation to the day-ahead integrated forward market. However, FERC approval of that feature is uncertain. The ISO recommends that the CPUC act now and establish an obligation on the utilities to make the resources they procure under the CPUC-established procurement rules available to the ISO in the day-ahead market time frame.

A well-designed resource adequacy requirement should provide for use by the ISO of the resources procured by LSEs to meet their load. See Exh. 87 Pettingill/Sheffrin Opening at 12-13. In that regard, to the extent that such resources are not scheduled by LSEs to meet their loads, but become necessary in the day-ahead or real time-time frames to balance resources with load, the ISO could use the resources for such purpose.[17] Tr. (Pettingill) at 4359-60. This could be accomplished by having the CPUC require that contracts between utilities and suppliers

[17] The ISO agrees that in designing rules for such use by the ISO, utilities should be allowed to indicate restrictions on energy limited resources. Tr (Pettingill) at 4439 9-22.

include a provision for making capacity procured under the contract available to the ISO.[18] Tr. (Pettingill) at 4438: 21-26. Pursuant to this requirement, capacity that is not included in a forward schedule by the utility should be required to bid into the ISO real time energy market. Tr. (Pettingil) at 4441: 7-26. Likewise, such capacity should be available for dispatch by the ISO as part of the RUC procedure. The Alternate "supports RUC as a necessary tool in enabling the ISO to maintain system reliability." Alternate at 27. However, absent a requirement that the ISO be permitted to utilize the capacity procured by the utilities, the ISO will not even be able to implement RUC.

Parties might argue that there is no need to grant the ISO the ability to use capacity procured by the utilities because the existing must offer mechanism resolves the ISO's concerns. In that regard, the existing must-offer obligation ensures that existing supply can be called upon to meet load if it is available and necessary. Exh. 87 Pettingill/Sheffrin Opening at 12. However, there has been significant resistance to the must-offer obligation by suppliers, and the ISO is concerned that FERC may lift the requirement some time in the future. *Id.* Tr. (Sheffrin) at 4440: 16-23; Tr. (Stern) at 5784:13-16.

Moreover, the must-offer obligation serves a different function than resource adequacy and should not be used as a substitute for a comprehensive and effective resource adequacy requirement. Must offer was intended to prevent physical withholding, it was not intended as a resource adequacy measure. See tr. (Sheffrin) at 4442: 22-28. The must-offer obligation cannot assure that new resources will be built or that existing plants will continue to operate.[19] Tr.

---

[18] If there is a consensus for such an approach, some issues could be addressed in the ISO Tariff Such a Tariff provision would set forth the availability criteria for all resources declared as capacity for an LSE In any event, there is a critical need for coordination between the CPUC and the ISO on this issue Once contracts are executed, the opportunity for the ISO to use such contracts could be lost.

[19] Even with the must offer obligation in place, approximately 1,400 MW has been mothballed because the resources' owners felt they were not able to recover their costs.

(Mobasheri) at 5545:11-14. This is because the must-offer obligation does not provide a platform for existing or new resources to recover their fixed costs. Specifically, the must offer obligation does not provide capacity payments to suppliers. Only a resource adequacy requirement that provides a stable and adequate revenue stream to support recovery of the costs of constructing and maintaining resources in California can assure that adequate resources will be available to serve load in the future. Thus, the must offer obligation should not be viewed as a substitute for a resource adequacy program.

In any event, the bottom line is that, if utilities procure resources to meet their loads, such resources must be made available to the ISO so such resources may be applied towards real-time needs. "[t]he procurement of adequate capacity in the forward market is critical, yet, that capacity is of little value to load if it is not available to serve load when needed." Exh. 87 Pettingill/Sheffrin Opening at 12-13. Thus, the ISO does not believe it is prudent or appropriate to wait and see whether the FERC retains the must-offer obligation in the long-term before putting into place a requirement that resources procured by the utilities be made available to the ISO if needed to meet real time needs.

V. RELATIONSHIP BETWEEN MD02 AND RESOURCE ADEQUACY

The CPUC's decision on resource adequacy will have major implications for the ISO's MD02 market redesign. First, the resource adequacy requirement adopted by the CPUC must be coordinated with the ISO's proposed market rules and requirements. FERC has directed the ISO to submit a filing outlining any necessary changes to its market design in response to the final rule issued by CPUC in the instant proceeding within 60 days of issuance of such final rule. *California Independent System Operator Corporation,* 105 FERC ¶ 61,140 at P 216 (2003) ("MD02 Order").

Second, the CPUC's approval of an effective resource adequacy requirement consistent with the concepts set forth in the Alternate should greatly improve the ISO's case for implementing certain market design elements that will be more favorable for California consumers. For example, as part of its MD02 filing, the ISO proposed to pay suppliers an availability payment as part of the RUC process. As proposed by the ISO, the availability payment would be rescinded if the unit was dispatched under RUC or such capacity was otherwise scheduled. The ISO proposed this availability payment as an interim measure pending the State's adoption of a resource adequacy mechanism that "is effective in ensuring that capacity procured by LSEs under their capacity obligations will be available to the CAISO for commitment in RUC and dispatched in Real Time."[20] In its MD02 Order, FERC ruled – unfavorably-- that the capacity payment should not be rescinded even if a unit is dispatched under RUC. MD02 Order at P 124.Thus, even if a unit is dispatched under RUC, it will receive both an availability payment and an energy payment, thereby resulting in increased costs for California consumers. The CPUC's adoption of an effective resource adequacy plan – including a requirement to make resources available to the ISO --should enable the ISO to eliminate the availability payment as element of its RUC proposal, thereby benefiting consumers.

In its MD02 filing, the ISO also proposed to "net" start up and minimum load costs against market profits earned during a unit's commitment period. The ISO proposed this "netting" approach because (1) such an approach is employed by the eastern independent system operators, and (2) "netting" ensures that consumers are not subsidizing suppliers' other market activities or possibly paying twice for the same energy. FERC rejected the ISO's proposal stating that the eastern independent system operators' capacity markets provide a balance to the

---

[20] Motion for Leave To File Answer and Answer of the California Independent System Operator Corporation to Motions to Intervene, Motions to Reject, Comments and Protests, Docket Nos. ER02-1656, *et al*., p. 126 (September 17, 2003).

"netting" of revenues; however, FERC, stated that the ISO could resubmit its proposal upon implementation of a resource adequacy program. MD02 Order at P 115. Thus, the CPUC's approval of an effective resource adequacy will enable the ISO to re-submit its "netting" proposal, which proposal will benefit consumers in California.

Finally, the choices the CPUC makes in this proceeding likely will determine the efficacy of the market power mitigation measures that FERC will permit the ISO to implement in connection with MD02. Indeed, in the MD02 Order, FERC expressly recognized the inter-relationship between resource adequacy and market power mitigation. Specifically, FERC stated that "the resource adequacy measures adopted by the region must work together with the region's mitigation measures to ensure that there are appropriate incentives to invest in sufficient infrastructure to maintain reliable service to customers in the region."[21] MD02 Order at 274. At the November 6, 2003 California Technical Conference On Wholesale Power Market Design, FERC also strongly intimated that the market power mitigation measures approved for the ISO would depend on the strength of the CPUC's resource adequacy measures. Thus, it appears that the more effective a resource adequacy requirement the CPUC approves, the more likely FERC will be to approve stronger market power mitigation measures, and vice versa. The CPUC should keep in mind this linkage between market power mitigation and resource adequacy in making a decision in this proceeding.

---

[21] In his separate concurrence, Chairman Wood also recognized that the resource adequacy mechanism and the safety net bid cap are directly linked. Further, he indicated that if FERC were to adopt the ISO's proposed PJM-style local market power mitigation measures, there would need to be some other mechanism in place to address long-term solutions, *i e*, a resource adequacy mechanism.

VI. CONCLUSION

The ISO respectfully urges the CPUC to adopt the Alternate, subject to the limited modifications discussed above. This will provide for an effective resource adequacy requirement in California by promoting, reliable operation of the transmission grid, investment in California's electric infrastructure, and the development of competitive electricity markets in the State.

Date: December 8, 2003

Respectfully submitted,

By: _____

Anthony J. Ivancovich

Counsel for the California Independent
System Operator Corporation
151 Blue Ravine Road
Folsom, California 95630
Phone: (916) 608-7135
Fax: (916) 608-7296

APPENDIX A

APPENDIX A

PROPOSED CHANGES TO THE ALTERNATE

Additions indicated in underline, and deletions indicated in redline.

Findings of Fact

18. It is reasonable to adopt a 90% level of forward contracting at one year in advance and a 100% level of forward contracting at one month in advance. We should allow the utilities the flexibility to justify to the Commission, on a case-by-case basis, excursions below this level.

23. The issue of deliverability needs further study. However, resources procured by the utilities must be deliverable to load when needed.

88. Reasonable financial consequences should exist for a utility's failure to procure sufficient reserves. Forward, ex-ante, financial consequences are necessary to encourage compliance with the reserve requirements. The consequence should be a surcharge on all real time energy purchases during the period in which the utility fails to satisfy it capacity commitments.

89. A meaningful monthly reporting requirement is necessary to enable the Commission and the ISO to monitor compliance with the resource adequacy requirement.

90. The adoption of standardized and workable load forecasts and methodologies for counting resources are necessary to timely monitor compliance with the resource

adequacy requirement, ensure consistency across the ISO Control Area and ensure that the specified reserve level are adequate.

91. In order to support grid reliability and ensure that there are sufficient supplies to balance load, the ISO needs to be able to utilize the resources procured by utilities to meet their resource adequacy obligation when the utilities do not schedule such resources in the day ahead.

Conclusions of Law

5. The utilities should meet this 17% requirement by no later than the end of 2004. If cost effective, the utilities may choose to meet this level sooner. The utilities should forward contact 90% of their capacity requirements a year in advance and 100% of their capacity requirements a month in advance.

6. We should seek another round of comments, as part of this proceeding, as to how to assess and develop workable deliverability standards. Deliverability is an essential element of the resource adequacy plan, and the utilities must demonstrate that their resources are deliverable.

72. The utilities should face reasonable financial consequences for their failure to procure adequate resources to satisfy their capacity requirements regardless of whether the ISO is in a staged emergency.

73. A meaningful monthly reporting requirement is a necessary element of the resource adequacy plan.

74. There should be consistent, standardized and logical conventions for the calculation of load forecasts and the counting of resources.

75. The ISO must be able to utilize resources procured by the utilities to meet their resource adequacy requirements when such resources are not otherwise scheduled in the day ahead market.

PROOF OF SERVICE

I hereby certify that on December 8, 2003 I served, by electronic and U.S. mail, Comments Of The California Independent System Operator Corporation On The Proposed Decision Of Judge Walwyn And The Alternate Proposed Decision Of Commissioner Peevey Both Mailed On November 18, 2003 in Docket # R. 01-10-024

DATED at Folsom, California on December 8, 2003

Karen Voong
An Employee of the California
Independent System Operator

DANIEL V GULINO
RIDGEWOOD POWER MANAGEMENT, LLC
947 LINWOOD AVENUE
RIDGEWOOD, NJ 07450

WILLIAM P SHORT
RIDGEWOOD POWER MANAGMENT, LCC
947 LINWOOD AVENUE
RIDGEWOOD, NJ 07450

KEITH R MCCREA
SUTHERLAND, ASBILL & BRENNAN LLP
1275 PENNSYLVANIA AVE , N W
WASHINGTON, DC 20004-2415

ROGER A BERLINER
MANATT, PHELPS & PHILLIPS, LLP
1501 M STREET, NW, SUITE 700
WASHINGTON, DC 20005

PETER GLASER
SHOOK, HARDY & BACON, L L P
600 14TH STREET, NW, SUITE 800
WASHINGTON, DC 20005-2004

MARTIN PROCTOR
CONSTELLATION POWER SOURCE
111 MARKET PLACE, SUITE 500
BALTIMORE, MD 21202

EDWARD SULLIVAN
SENIOR COUNSEL
PEABODY HOLDING COMPANY, INC
701 MARKET STREET
ST LOUIS, MO 63101-1826

LOUIS DENETSOSIE
ATTORNEY GENERAL
NAVAJO NATION DEPARTMENT OF JUSTICE
PO DRAWER 2010
WINDOW ROCK, AZ 86515

LISA URICK, ATTORNEY AT LAW
SAN DIEGO GAS & ELECTRIC COMPANY
555 W FIFTH STREET, SUITE 1400
LOS ANGELES, CA 90013-1011

RICHARD A SHORTZ, ESQUIRE
MORGAN, LEWIS & BOCKIUS LLP
300 SOUTH GRAND AVE , 22ND FLOOR
LOS ANGELES, CA 90071-3132

GREGORY KLATT
ATTORNEY AT LAW
LAW OFFICES OF DANIEL W DOUGLASS
411 E HUNTINGTON DRIVE, SUITE 107-356
ARCADIA, CA 91006

THOMAS D O'CONNOR
ATTORNEY AT LAW
O'CONNOR CONSULTING SERVICES, INC
5427 FENWOOD AVENUE
WOODLAND HILLS, CA 91367

DANIEL W DOUGLASS
ATTORNEY AT LAW
LAW OFFICES OF DANIEL W DOUGLASS
6303 OWENSMOUTH AVE , TENTH FLOOR
WOODLAND HILLS, CA 91367-2262

CURTIS KEBLER
DIRECTOR, ASSET COMMERCIALIZATION
RELIANT ENERGY
8996 ETIWANDA AVENUE
RANCHO CUCAMONGA, CA 91739

BETH A FOX, ATTORNEY AT LAW
SOUTHERN CALIFORNIA EDISON COMPANY
2244 WALNUT GROVE AVENUE, RM 535
ROSEMEAD, CA 91770

JAMES WOODRUFF, ATTORNEY AT LAW
SOUTHERN CALIFORNIA EDISON COMPANY
2244 WALNUT GROVE AVENUE, SUITE 342
ROSEMEAD, CA 91770

RICHARD H HERTZBERG
ENPEX CORPORATION
1329 STRATFORD COURT
DEL MAR, CA 92014

JEFFREY M PARROTT, ATTORNEY AT LAW
SAN DIEGO GAS & ELECTRIC COMPANY
101 ASH STREET, HQ 13
SAN DIEGO, CA 92064

DAVID KATES
NEVADA HYDRO COMPANY
2416 CADES WAY
VISTA, CA 92083

JOHN W LESLIE, ATTORNEY AT LAW
LUCE, FORWARD, HAMILTON & SCRIPPS, LLP
600 WEST BROADWAY, SUITE 2600
SAN DIEGO, CA 92101

KELLY M MORTON, ATTORNEY AT LAW
SEMPRA ENERGY
101 W ASH STREET, HQ13
SAN DIEGO, CA 92101

FREDERICK M ORTLIEB, CITY ATTORNEY
CITY OF SAN DIEGO
1200 THIRD AVENUE, 11TH FLOOR
SAN DIEGO, CA 92101-4100

MICHAEL C TIERNEY, ATTORNEY AT LAW
PALOMAR ENERGY
101 ASH STREET
SAN DIEGO, CA 92109

MARK J SKOWRONSKI
DUKE SOLAR
3501 JAMBOREE ROAD, SUITE 606
NEWPORT BEACH, CA 92660

KATE POOLE
ATTORNEY AT LAW
ADAMS BROADWELL JOSEPH & CARDOZO
651 GATEWAY BOULEVARD, SUITE 900
SOUTH SAN FRANCISCO, CA 94080

MARC D JOSEPH
ATTORNEY AT LAW
ADAMS BROADWELL JOSEPH & CARDOZO
651 GATEWAY BOULEVARD, SUITE 900
SOUTH SAN FRANCISCO, CA 94080

DANIEL EDINGTON
ATTORNEY AT LAW
THE UTILITY REFORM NETWORK
711 VAN NESS AVENUE, SUITE 350
SAN FRANCISCO, CA 94102

MATTHEW FREEDMAN
ATTORNEY AT LAW
THE UTILITY REFORM NETWORK
711 VAN NESS AVENUE, SUITE 350
SAN FRANCISCO, CA 94102

MICHEL PETER FLORIO
SENIOR ATTORNEY
THE UTILITY REFORM NETWORK (TURN)
711 VAN NESS AVENUE, SUITE 350
SAN FRANCISCO, CA 94102

OSA ARMI
ATTORNEY AT LAW
SHUTE MIHALY & WEINBERGER LLP
396 HAYES STREET
SAN FRANCISCO, CA 94102

NOEL OBIORA
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4107
SAN FRANCISCO, CA 94102-3214

THERESA MUELLER
ATTORNEY AT LAW
CITY AND COUNTY OF SAN FRANCISCO
1 DR CARLTON B GOODLETT PLACE
SAN FRANCISCO, CA 94102-4682

MARK SAVAGE
ATTORNEY AT LAW
CONSUMERS UNION OF U S , INC
1535 MISSION STREET
SAN FRANCISCO, CA 94103

JODY LONDON
GRUENEICH RESOURCE ADVOCATES
582 MARKET STREET, 10TH FLOOR
SAN FRANCISCO, CA 94104

EVELYN C LEE
ATTORNEY AT LAW
PACIFIC GAS AND ELECTRIC COMPANY
77 BEALE STREET, 31ST FLOOR
SAN FRANCISCO, CA 94105

JEANNE MC KINNEY
ATTORNEY AT LAW
THELEN, REID & PRIEST
101 SECOND STREET, SUITE 1800
SAN FRANCISCO, CA 94105

MARY A GANDESBERY
PACIFIC GAS & ELECTRIC COMPANY
77 BEALE STREET
SAN FRANCISCO, CA 94105

PAUL C LACOURCIERE
ATTORNEY AT LAW
THELEN REID & PRIEST LLP
101 SECOND STREET, SUITE 1800
SAN FRANCISCO, CA 94105

PETER WEINER
PAUL HASTINGS LLP
55 SECOND STREET, 24TH FLOOR
SAN FRANCISCO, CA 94105

SHERYL CARTER, DIRECTOR
NATURAL RESOURCES DEFENSE COUNCIL
71 STEVENSON STREET, STE 1825
SAN FRANCISCO, CA 94105

BRIAN T CRAGG
ATTORNEY AT LAW
GOODIN, MACBRIDE, SQUERI, RITCHIE & DAY
505 SANSOME STREET, SUITE 900
SAN FRANCISCO, CA 94111

ENOCH H CHANG
ATTORNEY AT LAW
WHITE & CASE LLP
THREE EMBARCADERO CENTER, SUITE 2100
SAN FRANCISCO, CA 94111

JOE KARP
ATTORNEY AT LAW
WHITE & CASE, LLP
3 EMBARCADERO CENTER, SUITE 2210
SAN FRANCISCO, CA 94111

JOHN ROSENBAUM
WHITE & CASE LLP
THREE EMBARCADERO CENTER, SUITE 2200
SAN FRANCISCO, CA 94111

MARK FOGELMAN
ATTORNEY AT LAW
STEEFEL, LEVITT & WEISS, P C
ONE EMBARCADERO CENTER, 30TH FLOOR
SAN FRANCISCO, CA 94111

STEVEN F GREENWALD
ATTORNEY AT LAW
DAVIS WRIGHT TREMAINE, LLP
ONE EMBARCADERO CENTER, SUITE 600
SAN FRANCISCO, CA 94111

EDWARD W O'NEILL
ATTORNEY AT LAW
DAVIS WRIGHT TREMAINE LLP
ONE EMBARCADERO CENTER, SUITE 600
SAN FRANCISCO, CA 94111-3834

LINDSEY HOW- DOWNING
ATTORNEY AT LAW
DAVIS WRIGHT TREMAINE, LLP
ONE EMBARCADERO, SUITE 600
SAN FRANCISCO, CA 94111-3834

LISA A COTTLE
ATTORNEY AT LAW
WHITE & CASE LLP
3 EMBARCADERO CENTER, SUITE 2210
SAN FRANCISCO, CA 94111-4050

JOHN WHITTING BOGY
ATTORNEY AT LAW
PACIFIC GAS AND ELECTRIC COMPANY
PO BOX 7442
SAN FRANCISCO, CA 94120

MARK R HUFFMAN
ATTORNEY AT LAW
PACIFIC GAS AND ELECTRIC COMPANY
PO BOX 7442
SAN FRANCISCO, CA 94120

SARA STECK MYERS
ATTORNEY AT LAW
122 - 28TH AVENUE
SAN FRANCISCO, CA 94121

ANDREW J SKAFF
ATTORNEY AT LAW
LAW OFFICE OF ANDREW J SKAFF
220 THE KNOLL
ORINDA, CA 94563

JOSEPH M PAUL
DYNEGY MARKETING & TRADE
5976 WEST LAS POSITAS BLVD
PLEASANTON, CA 94588

WILLIAM H BOOTH
ATTORNEY AT LAW
LAW OFFICE OF WILLIAM H BOOTH
1500 NEWELL AVENUE, 5TH FLOOR
WALNUT CREEK, CA 94596

SETH HILTON
ATTORNEY AT LAW
MORRISON & FOERSTER LLP
101 YGNACIO VALLEY ROAD, SUITE 450
WALNUT CREEK, CA 94596-8130

REED V SCHMIDT
BARTLE WELLS ASSOCIATES
1889 ALCATRAZ AVENUE
BERKELEY, CA 94703-2714

GREGORY MORRIS
GREEN POWER INSTITUTE
2039 SHATTUCK AVE , SUITE 402
BERKELEY, CA 94704

JULIA LEVIN
UNION OF CONCERNED SCIENTISTS
2397 SHATTUCK AVENUE, SUITE 203
BERKELEY, CA 94704

CHRIS KING
EXECUTIVE DIRECTOR
AMERICAN ENERGY INSTITUTE
842 OXFORD ST
BERKELEY, CA 94707

NANCY RADER
EXECUTIVE DIRECTOR
CALIFORNIA WIND ENERGY ASSOCIATION
1198 KEITH AVENUE
BERKELEY, CA 94708

PATRICK G MCGUIRE
CROSSBORDER ENERGY
2560 NINTH STREET, SUITE 316
BERKELEY, CA 94710

MICHAEL GREEN
THE PACIFIC LUMBER COMPANY
PO BOX 37
SCOTIA, CA 95565

MICHAEL THEROUX
THEROUX ENVIRONMENTAL
PO BOX 7838
AUBURN, CA 95604

SCOTT BLAISING
ATTORNEY AT LAW
BRAUN & BLAISING, P C
8980 MOONEY ROAD
ELK GROVE, CA 95624

JOHN PACHECO
CERS
CALIFORNIA DEPT OF WATER RESOURCES
3310 EL CAMINO AVENUE, ROOM 120
SACRAMENTO, CA 95821

JAMES WEIL
AGLET CONSUMER ALLIANCE
PO BOX 1599
FORESTHILL, CA 95631

THOMAS TANTON
4390 INDIAN CREEK ROAD
LINCOLN, CA 95648

ANDREW B BROWN
ELLISON, SCHNEIDER & HARRIS, LLP
2015 H STREET
SACRAMENTO, CA 95814

DOUGLAS K KERNER
ATTORNEY AT LAW
ELLISON, SCHNEIDER & HARRIS
2015 H STREET
SACRAMENTO, CA 95814

EMILIO E VARANINI III
GENERAL COUNSEL
CALIFORNIA POWER AUTHORITY
901 P STREET, SUITE 142A
SACRAMENTO, CA 95814

LYNN M HAUG
ATTORNEY AT LAW
ELLISON, SCHNEIDER & HARRIS, LLP
2015 H STREET
SACRAMENTO, CA 95814

STEVE PONDER
FPL ENERGY, INC , LLC
980 NINTH STREET, 16TH FLOOR
SACRAMENTO, CA 95814

ANN L TROWBRIDGE
ATTORNEY AT LAW
DOWNEY, BRAND, SEYMOUR & ROHWER
555 CAPITOL MALL, 10TH FLOOR
SACRAMENTO, CA 95814-4686

RONALD LIEBERT
ATTORNEY AT LAW
CALIFORNIA FARM BUREAU FEDERATION
2300 RIVER PLAZA DRIVE
SACRAMENTO, CA 95833

DONALD BROOKHYSER
ATTORNEY AT LAW
ALCANTAR & KAHL LLP
1300 S W 5TH AVENUE, SUITE 1750
PORTLAND, OR 97201

MICHAEL P ALCANTAR
ATTORNEY AT LAW
ALCANTAR & KAHL, LLP
1300 SW FIFTH AVENUE, SUITE 1750
PORTLAND, OR 97201

JAMES PAINE
ATTORNEY AT LAW
STOEL RIVES, LLP
900 SW 5TH AVE STE 2600
PORTLAND, OR 97204-1268

STEVE MUNSON
VULCAN POWER CO
1183 NW WALL STREET, SUITE G
BEND, OR 97701

CHUCK GILFOY
TRANSALTA ENERGY MARKETING US
4609 N W ASHLEY HEIGHTS DRIVE
VANCOUVER, WA 98685

JAMES LOEWEN
CALIF PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET SUITE 500
LOS ANGELES, CA 90013

AARON J JOHNSON
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5205
SAN FRANCISCO, CA 94102-3214

BRADFORD WETSTONE
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

CHRISTINE M WALWYN
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5117
SAN FRANCISCO, CA 94102-3214

CHRISTINE S TAM
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4209
SAN FRANCISCO, CA 94102-3214

CLAYTON K TANG
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

DAN ADLER
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5119
SAN FRANCISCO, CA 94102-3214

DAVID M GAMSON
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5214
SAN FRANCISCO, CA 94102-3214

DONNA J HINES
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

EUGENE CADENASSO
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

FARZAD GHAZZAGH
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4209
SAN FRANCISCO, CA 94102-3214

JAN REID
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4209
SAN FRANCISCO, CA 94102-3214

JAY LUBOFF
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

JOHN GALLOWAY
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

JULIE A FITCH
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5203
SAN FRANCISCO, CA 94102-3214

JULIE HALLIGAN
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5101
SAN FRANCISCO, CA 94102-3214

KAREN M SHEA
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

KAYODE KAJOPAIYE
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

LAINIE MOTAMEDI
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5119
SAN FRANCISCO, CA 94102-3214

LAURA L KRANNAWITTER
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4101
SAN FRANCISCO, CA 94102-3214

LAURENCE CHASET
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5131
SAN FRANCISCO, CA 94102-3214

LISA PAULO
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 3-E
SAN FRANCISCO, CA 94102-3214

MANUEL RAMIREZ
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

MARYAM EBKE
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5119
SAN FRANCISCO, CA 94102-3214

NILGUN ATAMTURK
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

PAUL DOUGLAS
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

PETER V ALLEN
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 5022
SAN FRANCISCO, CA 94102-3214

REGINA DEANGELIS
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4107
SAN FRANCISCO, CA 94102-3214

RICHARD A MYERS
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA 4-A
SAN FRANCISCO, CA 94102-3214

ROBERT KINOSIAN
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4205
SAN FRANCISCO, CA 94102-3214

SCOTT LOGAN
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4209
SAN FRANCISCO, CA 94102-3214

STEPHEN ST MARIE
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE AREA
SAN FRANCISCO, CA 94102-3214

STEVEN C ROSS
CALIF PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE ROOM 4209
SAN FRANCISCO, CA 94102-3214

ANDREW ULMER
ATTORNEY AT LAW
SIMPSON PARTNERS LLP
900 FRONT STREET, SUITE 300
SAN FRANCISCO, CA 94111

KAREN GRIFFIN
MANAGER, ELECTRICITY ANALYSIS
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET
SACRAMENTO, CA 95184

ROSS MILLER
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET
SACRAMENTO, CA 95184

JAMES MCMAHON
SENIOR ENGAGEMENT MANAGER
NAVIGANT CONSULTING, INC
3100 ZINFANDEL DRIVE, SUITE 600
RANCHO CORDOVA, CA 95670

CHIEF COUNSEL'S OFFICE
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET, MS 14
SACRAMENTO, CA 95814

ALAN LOFASO
CALIF PUBLIC UTILITIES COMMISSION
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

ANNE W PREMO
CALIF PUBLIC UTILITIES COMMISSION
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

CARLOS A MACHADO
CALIF PUBLIC UTILITIES COMMISSION
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

CONSTANCE LENI
CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814

DAVID HUNGERFORD
CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET, MS-22
SACRAMENTO, CA 95814

DON SCHULTZ
CALIF PUBLIC UTILITIES COMMISSION
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

HEATHER RAITT
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET, MS 45
SACRAMENTO, CA 95814

JENNIFER TACHERA
CALIFORNIA ENERGY COMMISSION
1516 - 9TH STREET
SACRAMENTO, CA 95814

KIP LIPPER
SENATOR BYRON SHER
STATE CAPITOL, ROOM 2082
SACRAMENTO, CA 95814

MARSHALL D CLARK
ENERGY SERVICES & POLICY
DEPARTMENT OF GENERAL SERVICES
717 K STREET, SUITE 409
SACRAMENTO, CA 95814

MIKE JASKE
CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET, MS-22
SACRAMENTO, CA 95814

RUBEN TAVARES
ELECTRICITY ANALYSIS OFFICE
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET, MS 20
SACRAMENTO, CA 95814

TARA M DUNN
901 P STREET, SUITE 142A
SACRAMENTO, CA 95814

WADE MCCARTNEY
REGULATORY ANALYST IV
PUBLIC UTILITIES COMMISSION
770 L STREET, SUITE 1050
SACRAMENTO, CA 95814

FERNANDO DE LEON
ATTORNEY AT LAW
CALIFORNIA ENERGY COMMISSION
1516 9TH STREET, MS-14
SACRAMENTO, CA 95814-5512

GLORIA BELL
CALIFORNIA DEPARTMENT OF WATER
RESOURCES
3310 EL CAMINO AVENUE, SUITE 120
SACRAMENTO, CA 95821

JEANNIE S LEE
CERS
CALIFORNIA DEPT OF WATER RESOURCES
3310 EL CAMINO AVENUE, ROOM 120
SACRAMENTO, CA 95821