STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER,*Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
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VIA ELECTRONIC POSTING

December 23, 2005

Office of the Secretary
Docket Room
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A, East
Washington, D.C. 20002

Re: *Assessment of Demand Response Resources,* Docket No. AD06-2-000 - Motion For Leave To File Comments Out Of Time And Comments Of The California Public Utilities Commission Staff And The California Energy Commission On Proposed Technical Conference Topics

Dear Ms. Salas:

Attached for filing in the above-docketed case, please find an electronic version of the following document: Motion For Leave To File Comments Out Of Time And Comments Of The California Public Utilities Commission Staff And The California Energy Commission On Proposed Technical Conference Topics.

Thank you for your cooperation in this matter and please do not hesitate to contact me at the phone number or e-mail address below if you have any questions or concerns regarding the foregoing.

Sincerely,

/s/ TRACI BONE

Staff Counsel
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Enclosure

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Assessment of Demand Response Resources	)	Docket No. AD06-2-000

MOTION FOR LEAVE TO FILE COMMENTS OUT OF TIME AND COMMENTS OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION STAFF AND THE CALIFORNIA ENERGY COMMISSION ON PROPOSED TECHNICAL CONFERENCE TOPICS

The California Public Utilities Commission Staff ("CPUC Staff")[1] and California Energy Commission ("CEC") submit these comments on the Federal Energy Regulatory Commission's ("FERC") proposed technical conference topics in response to the Notice of Proposed Voluntary Survey and Technical Conference dated November 3, 2005 ("Notice").

I. MOTION FOR LEAVE TO COMMENT OUT-OF-TIME

The CPUC Staff and CEC move for leave to comment out-of-time. Given the early stage of this proceeding, its voluntary nature, the late filing — 4 days out of time— will not prejudice any party. Accordingly, good cause exists to grant the CPUC Staff and CEC motion for leave to comment out-of-time.

II. EXECUTIVE SUMMARY

The CPUC Staff and CEC recently provided comments similar to those provided here to the United States Department of Energy ("DOE") in response to its own data gathering efforts regarding demand response issues. Consequently, FERC coordination

[1] CPUC Staff submit these comments and intend to seek ratification of them by the Commission at its next public meeting, scheduled January 12, 2005.

with DOE may be appropriate. In summary, the CPUC Staff and CEC believe that each of the topics listed in the Notice is appropriate for technical conference discussion, though answers to many of the specific questions posed may not yet be available – because they require specific experience with certain elements of demand response programs, which are always evolving.

The following comments reflect the CPUC Staff and CEC's perspectives and observations based on their direct experiences regarding each topic listed in Section II of the Notice. Because answers to some of these questions are in short supply, these comments do not address every question posed, and thus are not presented as a point-for-point response.

III. COMMENTS ON PROPOSED TECHNICAL CONFERENCE TOPICS

A. Advanced Metering And Communication Systems

All of the questions posed on this topic are relevant for technical conference discussion, and the answers to many of these questions are currently being explored by the both the CPUC and CEC. Consequently, the following comments are based on our observations and understandings thus far concerning advanced metering. As a general rule, Advanced Metering Infrastructure ("AMI") is crucial to providing feedback on energy use patterns and supporting time differentiated rates.

- AMI is necessary to implement more complex time-differentiated pricing structures (i.e. hourly pricing) and other demand response ("DR") program offerings. AMI provides customers with the necessary information feedback on energy usage and costs needed to successfully implement of demand response programs.

- Most customers in California with loads greater than 200kW already have advanced meters and are served on Time-of-Use rates, with a variety of dynamic rates and demand response programs as options. California is currently considering several proposals for the deployment of AMI to all investor-owned

utility customers to further advance demand response in the residential and small commercial customer sectors and also improve utility operations.

- In addition to enabling DR and time-varying rates, such systems have been found to provide operational benefits (automatic meter reading, system management, etc.) independent of demand response benefits that largely offset the implementation costs. One of the AMI deployment proposals currently being considered in California indicates that approximately 90% of the project costs would be covered through operational benefits and the rest would be covered by DR benefits.

- Load control systems that allow utility operators to remotely control end use equipment, typically air conditioners, have a proven track record and provide reliable demand response benefits. To the extent that specific geographic areas can be targeted, such systems can provide transmission and distribution benefits as well. In the absence of time-based rates, customers are typically compensated with bill credits.

- Load control systems are compatible with AMI and time-based rates. Over the long term—as remote curtailments will most often occur during high-price periods—bill credit subsidies are likely to be reduced or eliminated as the inherent customer benefits of load control are better understood.

B. Existing Demand Response And Time-Based Rate Programs

At FERC's September 13, 2005 Technical Conference regarding Special Case Nodal Pricing, Wholesale Opt-Out, and Demand Response Programs, the CPUC, the CEC and California's three largest investor-owned utilities provided information regarding existing demand response and time-based programs in California. On September 27, 2005, the CPUC filed with FERC its official comments concerning the issues raised at the aforementioned Technical Conference, further describing California's demand response programs to date. *See* FERC Docket No. ER02-1656, *et al.* Rather than duplicate the information provided thus far, the following are brief comments on the questions posed for this topic:

- California investor-owned utilities currently offer a variety of demand response programs to large customers (over 200 kW in demand) that range from emergency-triggered programs (customers are contractually obligated to reduce

their demand to a pre-established level in exchange for rate discounts) to programs that are triggered on a day-ahead basis and are geared toward providing a price-incentive for customers to respond to, such as critical peak pricing (CPP). Prior to 2003, California demand response programs were limited to the emergency-triggered programs and air conditioner load control programs. Since 2003, there has been modest growth in customer participation in the day-ahead programs. Participation in emergency programs has remained relatively stable for the past few years.

- The benefits of emergency-triggered programs are the following: these programs have historically provided reliable demand response when triggered, and are able to provide reductions in demand within 30 minutes of being activated. The primary detriment with emergency-triggered programs is that outside of emergency situations, they are unable to provide a means to reduce demand.

- The chief benefit of day-ahead, or price-responsive programs is that they enable customers to respond to economic triggers and thus can be used to reduce demand in non-emergency situations. The primary detriment of these programs is the difficulty in predicting voluntary responses to different price signals in terms of MW savings.

C. Annual Resource Contribution Of Demand Response

The questions posed for this topic are all relevant and answers to them are currently being explored by the CPUC and the CEC, in coordination with the investor-owned utilities. We offer the following information to inform FERC's inquiry:

- A demand response monitoring and evaluation (M&E) protocol has been in place in California since 2004 for the purpose of determining load reductions generated by demand response programs during system peaks. An evaluation of the 2005 summer season (to be published by Spring 2006) is anticipated to reveal more information with respect to the amount of load reductions produced by the current programs.

- CPUC and CEC staff have recently been directed to develop measurement protocols for estimating load impacts of both price responsive and emergency-triggered demand response programs. Work on this task will commence in the Spring 2006.

- Currently investor-owned utilities provide monthly reports on enrollment in existing demand response programs and potential load reduction MWs generated by that enrollment. These reports will be revised in the near term to include expected MWs as well.

D. Potential For Demand Response As A Quantifiable, Reliable Resource For Regional Planning Purposes.

The CPUC recently adopted resource adequacy requirements (RAR) for all load serving entities (LSEs) in California. *See, e.g.,* CPUC Decisions (D.) 04-10-035 and 05-10-042. In short, LSEs are required to procure supply resources to meet their forecasted demand, plus a reserve margin of 15%. Demand response programs are specifically identified as resources that can count toward meeting RAR. The CPUC separated demand response programs into two categories – dispatchable and non-dispatchable programs.

- Dispatchable programs, considered supply-side resources for meeting RAR, are basically programs whose demand response reductions can be dispatched or controlled by the LSE with relative ease and quickness. Based on either historical performance or the program design, programs in this category are able to deliver demand response MWs consistently. Examples of dispatchable programs are air conditioner load control programs and emergency-triggered programs (interruptible tariffs).

- Non-dispatchable programs are considered reductions to an LSE's forecasted demand for RAR purposes. Due to their design and operation, the demand response generated by these programs is not easily controllable by the LSE, but rather estimated. Examples of non-dispatchable programs are critical peak pricing and demand bidding, which essentially enable participants to reduce their demand in response to pricing signals.

E. Equitable Treatment Of Demand Response Resources In Regional Transmission Planning And Operations

The questions posed for this topic are best addressed by the California Independent System Operator Corporation ("CAISO"). The CPUC is coordinating with the CAISO on a handful of issues pertaining to demand response and these were described in Section II.C.4 of the CPUC's filed comments to the FERC on September 27, 2005 in Docket Nos. ER02-1656, *et al*. The CPUC is committed to continue its work

with the CAISO so that retail demand response programs are coordinated with the CAISO's planning and operations.

F. Regulatory Barriers To Improved Customer Participation In Demand Response, Peak Reduction, And Critical Period Pricing Programs

All of the questions posed for this topic would be relevant to a technical conference on demand response. The following comments are observations made to date by the CPUC Staff and CEC:

- Individual regions have unique needs for building a demand response capability that reflects variations in the types of generation resources, distribution system structure, climate, and end-use patterns—so specific experiences and recommendations from one region should be applied with careful consideration to the similarities and differences among regions.

- As a general rule, one of the most effective ways to increase demand response is move toward rate structures that reflect the cost of delivering energy on a time differentiated basis, now that technology and data processing advances have significantly reduced the associated metering and billing costs.

The following describes what we have learned through our recent efforts to achieve greater demand response in California:

- Customer Education on electricity usage and costs is critical. There are two fundamental elements of customer education. First, customers should be introduced to the fundamental concept of wholesale energy prices that vary as a function of generation costs and demand. Second, customers need basic education on how their electricity usage affects their electricity bills and actions they can take to respond to high peak costs. While this discussion tends to focus on residential customers, the principle applies to large customers as well, though in California large customer "education" has been blended most successfully with some form of customized assistance or added incentives.

    - Education regarding the fundamentals of electricity costs: California customers were sensitized to this issue during the 2001 electricity crisis, so the task has been somewhat easier to accomplish. Other states may or may not have to put significant effort into communicating this message. These efforts should precede or accompany other efforts targeting the general population.

    - Education regarding actions customers can take: While action messages in CA focused on summer afternoon peak reductions (both load shifting and

conservation), utilities with different load issues, such as those with significant resistance heating load, could target the specific peaks for that area and actions that would be useful—the most basic being to move discretionary load to a different time of day.

- Providing customers with customer assistance is important to achieving high levels of customer participation and Demand Response.

The following outline describes the basic elements of assisting customers in making the transition from volumetric to time-varying and dynamic rates. These strategies apply to both large and small customers.

Transition Strategies:

- Base level education/information must be provided
  - Automated/individualized online assistance for efficiency and demand response actions as well as access to program/tariff information—"Web-based Tools" for estimating impacts of DR strategies.
  - Individual technical assistance
  - Integrated energy efficiency/demand response audits. Support for a progressive level of assistance, based on demand response potential, is essential for helping customers realize potential savings—and the system obtaining the greatest benefits at the lowest cost.
  - Financial assistance (rebates) for implementation of demand response technology
  - Shadow billing/Bill estimation software for comparing rates
- Ongoing customer support
  - Access to individual interval data on the web; analysis tools;
  - Integration of DR with ongoing Energy Efficiency incentives

- Measurement and evaluation of new load control programs and dynamic rates is critical to understanding the levels of customer participation in DR and integration of the programs with supply side management.

- Demand response impacts, including permanent load shape impacts and long-term development of demand response capabilities among customers will fundamentally change the structure of electricity supply management. It is critical that data necessary to document changes and develop demand forecasting capabilities be collected and shared among electricity providers, system operators, and regulators.
  - Consumption data should be made available, subject to confidentiality protections, to regulators and evaluation contractors for the purpose of estimating program impacts.

- All programs and tariff designs should be subject to both process and impact evaluation, the former to provide feedback to program implementers to improve program design and the latter to provide common measures that allow comparison between programs and optimization of the DR program/tariff portfolio.

- For wholesale markets, a transparent wholesale market price for electricity in forward as well as real-time markets is necessary. It is important that customers can see this price because our research has shown that customers do not trust confidential prices delivered by utilities. While time-based rates can be developed using internal/confidential information on wholesale prices, customers tend to have a lower level of trust in non-transparent rates.

  Publicly available pricing information can be used to:
  - Index time-based rates
  - Develop triggers for dynamic rate designs and load reduction programs
  - Increase customer confidence about the "fairness" of time-based rates

IV. CONCLUSION

The CPUC Staff and CEC offer these observations to FERC based upon their own extensive work on demand response issues and welcome further inquiries from FERC about California's demand response programs and lessons learned.

Respectfully submitted:

December 23, 2005

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