Rulemaking	13-09-011
Exhibit No.:	
Witness:	Neil Millar

Order Instituting Rulemaking to Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements	Rulemaking 13-09-011

REBUTTAL TESTIMONY OF NEIL MILLAR
ON BEHALF OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements	Rulemaking 13-09-011

REBUTTAL TESTIMONY OF NEIL MILLAR ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

Q. What is your name and by whom are you employed?

A. My name is Neil Millar. I am employed by the California Independent System Operator Corporation (CAISO), 250 Outcropping Way, Folsom, California as the Executive Director, Infrastructure Development.

Q. Did you submit opening testimony in this proceeding?

A. Yes, I did.

Q. What is the purpose of your rebuttal testimony?

A. I provided opening testimony addressing the general characteristics necessary for supply side demand response to meet local reliability needs, and the reasons that supply side demand response needs to be integrated into the ISO market to be effective in meeting those needs. Dr. Kristov has submitted rebuttal testimony addressing issues in the opening testimony of PG&E regarding the concept of supply-side resources essentially being dispatched by an LSE for reasons not visible to or under the control of the ISO under the umbrella of load-modifying demand side management. My rebuttal testimony focuses on augmenting Dr. Kristov's

rebuttal testimony by addressing specific local reliability requirement concerns with the PG&E proposed framework.

I. LOAD MODIFYING RESOURCES AND THEIR ABILITY TO ADDRESS LOCAL AREA CONCERNS

Q. Please summarize your concerns with the load modifying demand response framework put forth by PG&E, as you understand it.

A. As discussed later in this testimony, the CAISO does believe that load modifying demand response can play a role in reducing local area needs that must be planned for and served in real time. Consistent with the CAISO's input into the bifurcation process, these load modifying demand response programs are repeatable and predictable and are incorporated into long term and short term load forecasts, thereby reducing the local RA need.

However, as Dr. Kristov's testimony sets out, the PG&E proposal appears to suggest a framework for load modifying demand response programs that are dispatched by the LSE – for any of a number of circumstances – rather than by the CAISO. As I understand the PG&E testimony, these dispatchable load modifying programs would be a third category of demand response that, according to PG&E, would, like supply-side DR resources, be eligible for RA credit but would, unlike supply-side DR resources, be dispatched by the LSE under criteria largely unknown to the ISO. As Dr. Kristov notes, this is neither load-modifying demand response that can be rationalized and forecast meaningfully in advance like other demand-side programs without better information as to the criteria by which it would be

dispatched, nor supply-side demand response integrated into the CAISO market operation.

Q. Does PG&E's testimony indicate that PG&E is suggesting relying on its version of load modifying resources – this third category of resources that would be dispatched by the LSE – to meet local area concerns and local reliability needs?

A. PG&E's intent is not necessarily clear in this regard, and I anticipate this will become clearer through the course of the proceeding. While in most cases, the testimony filed on behalf of PG&E refers to "the market" more generally suggesting that these third category DR resources are intended for system use, other comments raise the concern that use in local issues is also anticipated.

Examples of testimony sponsored by PG&E that raise concerns are:

1. PG&E witness Kenneth Abreu lists the characteristics that should be supply-side demand response and is silent on local capacity issues and needs (Page 4-1, lines 5-12):

"*The characteristics for utility Demand Response (DR) programs or parts of programs to be Supply Resources DR should be:*

1. A DR program that provides a product that the California Independent System Operator (CAISO) directly procures (e.g., ancillary services, etc.);

or

2. Any DR program or part of a DR program where the incremental benefits of bidding DR as supply exceed the incremental costs of bidding DR as supply."

2. In Q8, [Pages A-6 and A-7] Alex Papalexopoulos's testimony describes how load modifying resources may contribute to price formation. It is not clear, however, how this would apply to meeting local reliability needs, and if the expectation is that because it may contribute to price formation, that this alone enables the resource to meet local reliability needs.

3. In Q9, [Page A-8] Lines 19 through 29, PG&E witness Papalexopoulos states:

"Day-Of Price Responsive Demand Response Programs can be also initiated by a manual process by LSEs and DRPs. They may be initiated based on CAISO system conditions or other specific triggers such as forecasted load, expected heat rate indicator, forecasted high prices, local distribution systems conditions, CAISO Alerts or Warnings, forecasted or actual temperature, etc. Under Day-of Price Responsive Programs, customers are notified the same day the event occurs and, depending on the program, are given as much as three-hours notice to as little as 15-minutes notice to curtail load. These DR adjustments reduce the CFCD and ensure that Day-Of Price Responsive Demand Response Programs are incorporated in the Real-Time Market."

[Underlining added]

4. PG&E witness Zarnikau also states very generally (Page C-7, lines 1-2) without differentiating between local versus system reliability needs:

"Load Modifying Resource DR provide similar reliability value compared to Supply Resource DR."

These statements seem to suggest that load modifying DR that is dispatched by the LSE could be used to address local reliability concerns. This is absolutely not feasible, as discussed below and in Dr. Kristov's testimony.

Q. Does the framework of load-modifying demand response, proposed by PG&E comport with the CAISO's operational needs for local resources, either on a planning or operating basis?

A. No. While load-modifying demand response that is predictable and forecast as described in Dr. Kristov's testimony does reduce the local capacity requirement, supply-side resources dispatched by a third party do not necessarily reduce the need, and certainly cannot be relied upon as capacity to meet the need. As I described in my initial testimony, dispatchable DR resources relied upon for local capacity purposes need to have the necessary characteristics of time of response (upon being dispatched by the CAISO in response to grid needs), duration (each time the resource is dispatched, the dispatched level must be maintained for a sufficient length of time) and availability (can be called upon a reasonable number of times over a month, season or year) to meet the need. Given resources that have the necessary characteristics, the system operator then needs the appropriate visibility in order to dispatch them when needed to effectively operate the system.

Properly integrating these supply-side resources into the market provides that visibility of location and real-time availability of the resources, as well as aiding in price discovery. This visibility is particularly important in addressing local reliability requirements, as the operator must not only be prepared to maintain supply and demand balance, but must also be prepared to respond to system contingencies affecting the local area. The requirement to reposition the system

within 30 minutes following a contingency to be ready for a second contingency necessitates operators having visibility of which resources remain available for dispatch. This visibility in particular is not provided by the framework proposed by PG&E.

Beyond the issues of visibility in operations, there is also the concern that dispatches driven by LSE-developed methodologies will use up all of the resources' availability, rather than preserving the availability for use in addressing more extreme contingencies managed by the CAISO.

On a related issue, the locational aspect of DR also needs to be considered. Considerable discussion has taken place in various testimony about the need to aggregate across broader geographic areas – across sub-LAPS, across D-LAPs, and across LSEs. Aggregating supply-side DR within a sub-LAP that is contained within a local capacity area may suffice at a minimum for planning purposes in addressing known limitations, but the CAISO must know with confidence the distribution of these resources within the sub-LAP to a nodal level for testing the integrity of the system within the local capacity area. At the operational level, the same challenge exists – the granularity of resource visibility may be adequate for some specific conditions, but will likely be inadequate to enable effective utilization under more extreme scenarios.

Q. Are there other load modifying programs that can be successful in meeting local capacity needs?

A. First, as Dr. Kristov has explained, load-modifying programs can reduce the need – they are not part of meeting the need. This is a crucial distinction. Building

upon that distinction, load modifying programs such as energy efficiency programs or load modifying demand response that are known and predictable are valuable in addressing local area needs on a planning and operating basis. The results of these programs are incorporated into load forecasts based on historical performance and reduce the need for local capacity resources. They are not, however, considered as local capacity resources that meet the need for local requirements. Further, they are not subject to dispatch by an LSE based on parameters that are unknown to the ISO and unpredictable by the ISO – their behavior is understood and forecastable over time.

Q. Have load-modifying demand response programs dispatched by third parties been included in meeting local capacity needs in the past?

A. Historically demand response programs have been attributed to various local capacity areas as potential local capacity resources in assessing local resource adequacy capacity procurement compliance. These became part of the showings by LSEs to the CAISO in validating that there were sufficient resources.

However, historically, the local capacity areas that were assigned demand response capacity typically had sufficient surplus capacity (often due to the amount of system resource adequacy capacity acquired in those areas) such that the CAISO did not need to consider relying on these resources. The ISO first explored the potential to rely on local demand response programs in preparing for the summer of 2012 following the unanticipated outage of the San Onofre Nuclear Generating Station, and concluded at that time that the demand response programs in the area

lacked the necessary characteristics (especially time of response) to be helpful in meeting the specific local area constraint that emerged.

Q. And what are your conclusions about treating LSE-dispatched supply side demand response as load modifying demand response?

A. Two conclusions can be drawn from my rebuttal testimony. First, that LSE-dispatched supply-side resources treated as load-modifying demand response cannot be counted as local resource adequacy capacity in a planning or operational time frame. Rather, they must be classified as supply-side resources and participate in the CAISO markets to be counted as local capacity resources. If they are to be LSE-dispatched, then they should be classified as load modifying programs and considered in the load forecasts based on historical performance to reduce the need for local capacity resources. Second, in order to realistically assess the usefulness of LSE-dispatched load-modifying DR resources for reducing local capacity needs, we would need much better information about the characteristics of the resources and the criteria that the LSE would use in deciding when to dispatch them.

Q. Does this conclude your testimony?

A. Yes, it does.