Application No.:

Exhibit No.: ISO-23

Witness: Robert Sparks

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking 12-03-014

SUR-REBUTTAL TESTIMONY OF ROBERT SPARKS
ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long-Term Procurement Plans.	Rulemaking 12-03-014

SUR-REBUTTAL TESTIMONY OF ROBERT SPARKS ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION

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

A. My name is Robert Sparks. I am employed by the California Independent System Operator Corporation (ISO), 250 Outcropping Way, Folsom, California as Manager, Regional Transmission.

Q. Have you previously submitted testimony in this proceeding?

A. Yes, I have. On May 23, 2012, I submitted initial testimony addressing the need for local area generating resources in the LA Basin and Big Creek/Ventura areas and on June 19, 2012 I submitted supplemental testimony describing modifications to an OTC sensitivity study for these areas that I discussed at the May 3, 2012 workshop. On July 23, 2012, I submitted reply testimony.

Q. What is the purpose of your sur-rebuttal testimony?

A. In accordance with the ruling made by ALJ Gamson at the evidentiary hearing in this proceeding on August 7, 2012, I will respond to reply testimony submitted by Calpine witness Calvert and DRA witness Fagan.

CALPINE REPLY TESTIMONY

Q. Please describe the issues raised by the Calpine reply testimony to which you are responding.

A. According to Mr. Calvert's testimony, he conducted a power flow analysis of the Moorpark subarea using the same inputs as the ISO's trajectory scenario and he analyzed system reliability using the same set of contingencies examined by the ISO.[1] However, Mr. Calvert makes a recommendation about non-generation alternatives that differ from the recommendations I described in my opening testimony in this proceeding. I will respond to those recommendations.

Q. At page 3 of his testimony, Mr. Calvert explains that his power flow analysis sought different objectives than the study you conducted. Do you agree with that statement?

A. No, I do not. Mr. Calvert apparently believes that the ISO conducted its studies for the purpose of identifying the need to retain or replace existing OTC generation, whereas, according to Mr. Calvert, his study evaluated non-generation alternatives- in particular, transmission upgrades. However, as part of its analysis, the ISO also identified non-wires options, and in some cases assumed those options would be completed. Indeed, in the Moorpark area the ISO identified a non-wires option similar to the one that Mr. Calvert identified as his Option 1.

Thus, as a practical matter, the studies performed by the ISO and by Mr. Calvert have a similar purpose. Our area of disagreement focuses on whether certain transmission upgrades or additions are potentially superior mitigation solutions than replacement generation located in the Moorpark subarea.

[1] Testimony of Ron Calvert, page 3.

Q. What are the transmission alternatives that Mr. Calvert identified?

A. The Calpine study results are set forth on page 6 of Mr. Calvert's reply testimony as follows:

Table 1: Summary of Results

Option		OTC Replacement Generation (MW)	Post-Contingency Load Shedding (MW)	Estimated Transmission Cost
	CAISO OTC Study	430	340	
1	Vincent-Santa Clara Loop-in	215	390	$9 Million
2	Vincent/Pardee-Santa Clara Series Capacitors	0	590[7]	$28 Million
3	New Pardee-Moorpark Line	0	300	$32-40 Million

Q. What is your response to the Options described in the table above?

A. All of the options identified above in Mr. Calvert's table include the addition of shunt capacitors, which is similar to the solution that the ISO studied (see Page 14 lines 10-14 of my opening testimony regarding the addition of reactive support). Similar to option 1 above, the ISO transmission mitigation option still required some of the OTC generation to be replaced. However, rather than proposing the Vincent-Santa Clara Loop-in plus 100 MVAR of shunt capacitors, the ISO solution included approximately 600 MVAR of reactive support. The ISO solution reduced the OTC replacement need to approximately 100 MW, compared to Mr. Calvert's option 1 which required at least 215 MW of OTC replacement generation. One additional comment is that Mr. Calvert utilized the "2021_peak_traj_moorpark_sav.sav" base case posted on the ISO's Market Participant Portal website. Although these were the cases used to perform the analysis for the ISO's OTC study in the 2011/2012 Transmission Plan, the ISO discovered the MCGPKGEN 47.2 MW generating unit was dispatched in the

Moorpark area in the model, but does not actually exist. The ISO adjusted its study results but did not update the model posted on the website. Therefore, the OTC replacement generation (MW) in Table 1 above for Options 1, 2, and 3, likely need to be increased by 47.2 MW.

Q. If the ISO evaluated a mitigation solution that is similar to Calpine's Option 1, why isn't the ISO recommending that solution as the preferred approach for the Moorpark sub-area?

A. The ISO believes that the reliability and operational benefits of having 430 MW out of the existing 1946 MW OTC generation replaced in the Moorpark area will ensure that the overall changes to the operation of the Moorpark area and the southern California transmission system are moderated, and unforeseen consequences in the form of adverse impacts on the transmission system operation are minimized.

Q. What is your response to Calpine's Option 2 described in the table above?

A. Based on recent series capacitor cost estimates provided by SCE, the cost estimate for series capacitors on two transmission lines, as well as shunt capacitors in three different locations, is likely to cost well over $50 million. In addition, the cost estimates are based on shunt capacitors, but with the assumed retirement of all of the OTC generation in this localized area, there is likely to be a need for continuously controllable dynamic reactive support to avoid severe voltage fluctuations during contingencies. As a result, the cost estimates would have been more realistic if they had been based on a mix of shunt capacitors, static var compensators, or synchronous condensers, rather than just lower cost shunt capacitors.

Q. Have you also reviewed Calpine Option 3?

A. Yes. Similar to my concerns with Option 2, the costs of Option 3 are potentially far greater than the estimates provided in the table. In addition, the potential need for continuously controllable dynamic reactive support to avoid severe voltage fluctuations during contingencies is also a concern with this option.

Q. How does these higher costs compare with the costs of generation?

A. At page 7 of his testimony, Mr. Calvert notes that he did not consider the cost of new generation but that according to Calpine witness Barmack, the cost to develop and build 430 MW of new generation capacity would be approximately $500 million. However, this new generation cost estimate should not be compared to the transmission cost estimates described above. Rather, the cost of generation should be the difference in the cost of procuring generation inside the Moorpark area versus the cost of procuring the same amount and type of generation outside of the Moorpark area. In addition, with the expected loss of 18,000 MW of OTC generation and less than 5000 MW of that identified as needing to be replaced for local capacity needs, there is an expectation that new flexible generation capacity will be needed. If it is not located at an existing site, then transmission costs will be associated with this new generation on the order of $25 million to $100 million, depending on the location of the new generation. Mr. Calvert's estimate of $500 million for 430 MW of new generation is likely to be approximately the same whether the generation in inside the Moorpark area or outside the Moorpark area. However, if the generation is outside the Moorpark area, then the transmission costs, assuming the cost of Mr. Calvert's Options 2 or 3, are approximately $50 million on top of the generation costs. When the costs of generation interconnection are added, the additional costs of Mr. Calvert's Options 2 or 3 would be roughly $75 million to $150 million.

Q. What do you conclude from your evaluation of the Calpine reply testimony?

A. Mr. Calvert's options are not compelling enough to put the procurement process in the Moorpark area on hold. As I have explained, the ISO identified a solution similar to Option 1 but did not find it to be the superior alternative. The ISO continues to believe the reliability and operational benefits of having 430 MW out of the existing 1946 MW OTC generation replaced in the Moorpark area will ensure that the overall changes to the operation of the Moorpark area and the Southern California transmission system are moderated and unforeseen consequences in the form of adverse impacts on the transmission system operation are minimized.

DRA Witness Fagan Reply Testimony

Q. At pages 6-11 of his reply testimony, DRA witness Fagan discusses a new load and resource table (Table RF-1-Reply) for the Western LA Basin sub-area that is similar to the table he presented in his direct testimony. What is your response to this new table and the conclusions Mr. Fagan draws from this information?

A. In addition to the concerns raised by Mr. Millar in his testimony about relying on uncommitted energy efficiency and demand response, which are assumed in Mr. Fagan's load and resource table for the Western LA Basin, I have specific concerns about the assumption embedded in the table that all resource locations within the LA Basin provide equivalent reliability benefits. As I discussed in my opening testimony, the ISO provided effectiveness factors for the existing generation in the Western LA Basin. These factors range from 32% to 7%. Mr. Fagan's load and resource spreadsheet assumes that the 2400 MW of OTC resources- which are located in highly effective locations- could be replaced, one for one, by resources in less effective locations. Even with the most optimistic assumptions studied by the ISO regarding uncommitted energy efficiency, uncommitted distributed generation,

and uncommitted CHP, and using a much more accurate study model, the ISO's studies showed a need for 1042 MW to 1677 MW of OTC replacement generation in the Western LA Basin. The 169 MW need identified by DRA is simply not plausible.

Q. Does this conclude your sur-rebuttal testimony?

A. Yes, it does.