

Rulemaking 12-03-014
Exhibit No.: ISO-03
Witness: Robert Sparks

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

Rulemaking 12-03-014

**REPLY TESTIMONY OF ROBERT SPARKS
ON BEHALF OF THE CALIFORNIA INDEPENDENT
SYSTEM OPERATOR CORPORATION**

1

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

2

STATE OF CALIFORNIA

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

Rulemaking 12-03-014

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

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11

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.

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Q. Have you previously submitted testimony in this proceeding?

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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. The changes to the sensitivity study and the study results were provided publicly in an addendum to the 2011/2012 transmission plan that was posted to the ISO website on June 12, 2012.

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Q. What is the purpose of your reply testimony?

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A. I will respond to specific technical issues raised by DRA, CEJA and TURN regarding the ISO's OTC study methodology and local capacity deficiency recommendations. Mr. Millar will address broader policy issues raised in the initial

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1 testimony, including those portions of my supplemental testimony regarding the
2 ISO's incremental demand response, uncommitted energy efficiency, distributed
3 generation, uncommitted combined heat and power and energy storage study
4 assumptions.

5

6 **Q. DRA witness Fagan, at pages 7-9 of his testimony, discusses the ISO's power**
7 **flow analysis and concludes that it would be reasonable to consider the use of a**
8 **"simpler" loads and resource table to determine local area needs. Do you**
9 **agree?**

10

11 **A.** Absolutely not. Mr. Fagan's unfounded conclusion, in response to question 7- that
12 power flow simulations tools are too "imprecise" for use over a 10 year planning
13 horizon- completely fly in the face of the NERC planning standards (See ISO Ex.
14 13). These planning standards require Transmission Planners (public utility
15 transmission owners) and Planning Coordinators (the ISO) to conduct 10 year
16 planning studies testing the reliability of the grid under stressed conditions. This
17 contingency testing requires the use of power flow studies and cannot be done using
18 a simple spreadsheet tool. Furthermore, it is impossible to analyze a transmission
19 option using a resource balance approach. It certainly makes no sense to use one
20 tool to analyze transmission options and a different tool to analyze non-transmission
21 to solve the same problem. Given that the effectiveness of generation in some areas
22 were shown to range from 32% to 7%, large errors are introduced by the
23 spreadsheet assumption that all resources are electrically equivalent in a given LCR
24 area. In other words a spreadsheet analysis is grossly inaccurate in many LCR
25 areas and should not be used to make procurement decisions in this proceeding.

26

27 **Q. On page 23 of his testimony, Mr. Fagan concludes that there is no need for**
28 **procurement authorization at this time because the ISO's local capacity need**
29 **assessment is based on "number of 'worst case' assumptions. Is this a valid**
30 **conclusion?**

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1 **A.** No, not at all. As both Mr. Millar and I have explained, the OTC study was
2 conducted using a study methodology consistent with NERC planning standards
3 requiring the use of contingency analyses. However, the OTC study does contain
4 one very optimistic assumption: that the SONGS nuclear unit is online. The lack of
5 certainty regarding the availability of that generation resource heightens the ISO's
6 concerns with Mr. Fagan's "wait and see" recommendation. Delaying procurement
7 decisions reduces the options that are available, and if we find out that some of the
8 shorter lead time options are not effective, then we put ourselves into an emergency
9 shortage situation.

10

11 **Q.** **Mr. Fagan testifies, on page 3 of his testimony, that his load and resource**
12 **deficiency analysis produces a surplus for both the overall LA Basin local area**
13 **and the Big Creek/Ventura local areas based on information from CAISO's**
14 **OTC studies, and recent demand-side assumptions for the SCE portion of these**
15 **local areas. Have you reviewed Mr. Fagan's analysis?**

16

17 **A.** Yes, I have. It is my understanding that the conclusions on page 3 describe the
18 "Range of Resource Deficiency/Surplus" Table RF-2 on pages 18 and 19 of the
19 testimony.

20

21 **Q.** **Do you have concerns with Table RF-2?**

22

23 **A.** Yes. In addition to the assumptions about demand response, uncommitted EE and
24 CHP that are addressed by Mr. Millar, I note that Sentinel CPV unit (included in
25 row K) has an effectiveness factor of less than 5% which is considered a very
26 negligible contribution to local area needs. In addition, the amount of existing
27 supply set forth on row I includes many other units that are not effective and are not
28 equivalent to the generation being retired. As I discussed in response to a previous
29 question, a spreadsheet analysis does not reflect the effectiveness of existing

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1 generation and generic capacity that could address local capacity needs, and
2 therefore makes a spreadsheet tool unreliable for determining LCR needs.

3
4 **Q. CEJA witness May, at page 34 of her testimony, refers to potential**
5 **transmission mitigation solutions for bottleneck areas, in particular a possible**
6 **load transfer arrangement that would address the Chino-Mira Loma East #**
7 **500 kV line and Mira Loma West 500/230 kV bank #2 contingency. She then**
8 **describes the ISO's response to CEJA data request No. 9 as identifying another**
9 **possible transmission "fix." Did Ms. May correctly understand the ISO's**
10 **response to data request No. 9?**

11
12 **A.** No, it appears that CEJA misunderstood our response. The ISO is continuing to
13 discuss with SCE the potential distribution system upgrades at Rancho Vista
14 substation that would allow the approximately 600 MW load transfer from Mira
15 Loma substation. However, the ISO response to CEJA data request No. 9 is a
16 reference to this same distribution system upgrade. The potential 600 MW load
17 transfer could reduce the overall LA Basin need by 2000-3000 MW, but there is no
18 additional 2000-3000 "fix" as Ms. May suggests at that section of her testimony.

19
20 **Q. Ms. May recommends, at Section I. of her testimony (pages 32-35), that the**
21 **ISO should conduct a "comprehensive assessment" to determine whether there**
22 **are more transmission options that could, in combination with other**
23 **assumption changes such as EE, DR, DG etc. reduce the need for local**
24 **generation resources. Do you believe that additional studies should be**
25 **conducted before the Commission makes a decision in Track I regarding the**
26 **need for procurement to meet local capacity needs?**

27
28 **A.** No, I do not. The ISO conducts a comprehensive analysis of the grid, including the
29 local areas, each year in the transmission planning process. As Ms. May correctly
30 states on page 34: "Based on the fixes that CAISO has identified, which were

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1 shown by CAISO to reduce need by thousands of MW, and in some cases to
2 eliminate need in sub-areas...” In addition, over the last 14 years the ISO has
3 worked with the Participating TOs to identify transmission upgrades that would
4 reduce the need for local generation capacity. Numerous reconductorings,
5 transformer additions, and thousands of MVAR of reactive support have been added
6 to the transmission system for the sole purpose of minimizing the reliance on local
7 generation capacity for local reliability. Out of the existing 5000 MW of existing
8 OTC generation capacity in the LA Basin, the ISO has identified the need for as
9 little as 2370 MW, representing less than half. At one time, all of this 5000 MW of
10 generation was required for local capacity, and yet the ISO has determined that after
11 10 years of load growth, we can still eliminate the need for over half of it.
12 Additional studies would not produce any significant changes in the need for local
13 generation capacity.

14

15 **Q. TURN witness Kevin Woodruff, at pages 7-9 of his testimony, describes the**
16 **ISO’s LCR studies as a “moving target” and suggests that the potential for**
17 **actual local deficiency needs to vary from the forecast is “quite significant**
18 **(page 8).” How does Mr. Woodruff come to this conclusion?**

19

20 **A.** Mr. Woodruff bases his conclusion on the differences between the OTC deficiency
21 range for the LA Basin LCR and the deficiency for that area in the 2013-2015 Local
22 Capacity Technical Study, portions of which he attached to his testimony. He notes
23 that on page 73 of that study, the ISO predicted that in the 2015 timeframe, the
24 Western LA Basin sub-area would become the most stringent and binding local
25 constraint, and that the LA Basin could be eliminated and the Western LA Basin
26 become the new local area. As a result, the resource needs for the LA Basin in 2015
27 dropped to 5988 MW from 11,304 MW in 2013. Based on this phenomenon, Mr.
28 Woodruff states that authorization of new capacity to meet LCRs is a “financially
29 risky proposition for customers.”

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1 **Q. Do you agree with Mr. Woodruff's observations with respect to substantial**
2 **deviations in LCR results?**

3

4 **A.** No, not all. It appears that Mr. Woodruff has overlooked an important piece of
5 information from the 2013-2015 LCR study. The entire study has been submitted as
6 ISO Ex. 14. On page 76, the ISO provides the reason that the Western LA Basin
7 was predicted to be the most binding constraint in 2015:

8

9 The study has run out of generation in the 'other SCE/SDG&E areas'
10 without being able to reach a limit in the LA Basin local area. It is estimated
11 that about 10,800 MW of the LA Basin capacity is needed to serve load and
12 reserves in the southern system will reach its zonal limits
13 before reaching the local area limits. Further detailed analysis will be done at
14 a later date [as] part of the CAISO grid expansion process.

15

16 In the OTC study, the ISO included a substantial amount of renewable generation so
17 the amount of resources outside the LA Basin was much higher than in the 2015
18 LCR study, thus replacing the generation that the "other SCE/SDG&E areas" had
19 run out of. In the OTC study 10,743 MW of LCR was identified as needed in the
20 trajectory portfolio case, which is similar to the 10,800 MW number described in
21 the 2015 LCR study. Although LCR needs can vary from year to year, the results
22 are not nearly as dramatic as Mr. Woodruff suggests. In addition, past variations
23 between yearly LCR amounts have been due to ISO and Participating TO efforts to
24 identify all opportunities to build incremental transmission constraints and reduce
25 the need for local generation. However, these opportunities have been exhausted,
26 as I discussed above, and changes to LCR forecasts going forward are expected to
27 be more predictable.

28

29 **Q. At pages 10-13 of his testimony, Mr. Woodruff argues that the ISO appears to**
30 **be adopting more stringent LCR standards than those previously approved by**
31 **the Commission in the annual resource adequacy proceedings. Can you**

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1 **respond to Mr. Woodruff’s concerns with the performance criteria underlying**
2 **the resource deficiencies identified in the ISO’s OTC study?**

3

4 **A.** Yes. In his testimony, Mr. Woodruff points to the limiting contingencies identified
5 for the Ellis and Moorpark areas and data request responses provided by the ISO
6 wherein these contingencies are identified as Category D. It is true that for both of
7 these sub-areas, the limiting contingency is a category B contingency followed by a
8 common mode outage of two transmission lines that resulted in voltage collapse or
9 dynamic instability. The contingencies were identified in my initial testimony in
10 Tables 2-5 and 7-10 as well as the 2013 Local Capacity Technical Analysis
11 described in Mr. Woodruff’s testimony.

12

13 In contrast to thermal overloads, which allow time for operators to respond to the
14 impact on the grid, voltage collapse is instantaneous and widespread. Under the
15 NERC reliability and planning standards, following an N-1 contingency, the ISO
16 must take steps to ensure that the system can withstand a Category C common mode
17 outage that would otherwise lead to voltage collapse. In the identified subareas, if
18 generation redispatch were not an available option, then the ISO would need to
19 interrupt electric supply to customers following a single contingency. Although this
20 particular overlapping contingency is classified as Category D, it is a resource
21 planning requirement that has been included in the LCR criteria approved by the
22 Commission in D.06-06-064 and in every other approved LCR study since that time.
23 Specifically, the system planning criteria can be found at page 17 of the 2013 Local
24 Capacity Technical Analysis in Attachment 5 to Mr. Woodruff’s testimony.¹ In the
25 bottom row, footnote 3 clarifies that for local capacity studies, this particular type of
26 Category D contingency must be evaluated for risks and consequences, and in the
27 case of voltage collapse or dynamic instability, a local requirement must be created.

¹ The LCR planning criteria in this table is also in the ISO’s tariff at Section 40.3.1.1.

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1 The N-1/N-2 limiting contingencies for the El Nido and Moorpark sub-areas were
2 first identified in the 2011 Local Capacity Technical Analysis, and then again in
3 2012 and 2013 (see ISO Ex. 15 at page 78 and ISO Ex. 16 at page 88). The LCR
4 studies are vetted with stakeholders in a process outside the ISO's transmission
5 planning process and then approved by the Commission each year for use in the
6 annual resource adequacy proceeding.

7

8 Since these contingencies have been used by the ISO to establish LCR requirements
9 for the El Nido and Moorpark areas in the past three studies, using planning criteria
10 reviewed by the Commission in Docket 05-12-013, I disagree with Mr. Woodruff's
11 conclusion that the ISO has "deviated from Commission policy" by establishing
12 local capacity needs for these sub-areas.

13

14 **Q. Does this conclude your reply testimony?**

15

16 **A. Yes, it does.**