

Rulemaking 12-03-014
Exhibit No.: ISO-7
Witness: Neil Millar

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

Rulemaking 12-03-014

**TRACK 4 REBUTTAL TESTIMONY OF NEIL MILLAR
ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR
CORPORATION**

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**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.

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**TRACK 4 REBUTTAL TESTIMONY OF NEIL MILLAR
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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 (ISO), 250 Outcropping Way, Folsom, California as the Executive Director, Infrastructure Development.

Q. Please briefly describe your employment and educational background.

A. I received a Bachelor of Science in Electrical Engineering degree at the University of Saskatchewan, Canada, and am a registered professional engineer in the province of Alberta.

I have been employed for over 30 years in the electricity industry, primarily with a major Canadian investor-owned utility, TransAlta Utilities, and with the Alberta Electric System Operator and its predecessor organizations. Within those organizations, I have held management and executive roles responsible for preparing, overseeing, and providing testimony for numerous transmission planning and regulatory tariff applications. I have appeared before the Alberta Energy and Utilities Board, the Alberta Utilities Commission, and the British Columbia Utilities Commission. Since November, 2010, I have been employed at the ISO, leading the Transmission Planning and Grid Asset departments.

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2 **Q. Have you previously testified before the Commission?**

3

4 **A.** Yes, I presented rebuttal testimony in LTPP Track 1 on many of the same issues
5 being raised again in Track 4.

6

7 **Q. What is the purpose of your rebuttal testimony?**

8

9 **A.** I will clarify the ISO's support for the development of preferred resources to help
10 address needs created by the closure of the San Onofre Nuclear Generating Station
11 (SONGS) and how the ISO's study methodology is supportive of developing these
12 resources.

13

14 Further, numerous parties to this proceeding have taken issue with the ISO's study
15 methodology and identification of residual resource needs in the absence of SONGS
16 set out in Mr. Sparks' initial testimony. In this rebuttal testimony I will address
17 topics raised by parties regarding the ISO's transmission planning studies and the
18 joint agency Preliminary Reliability Plan for LA Basin and San Diego, as well as
19 some recommendations for the Commission's consideration. Mr. Sparks will
20 address topics raised by parties involving the technical aspects of the ISO's studies
21 and application of the NERC/WECC reliability standards.

22

23 Finally, I will provide an update to the ISO's recommendations for this proceeding.

24

25 **Planning for Incremental Demand Response, Uncommitted Energy Efficiency,**
26 **Uncommitted Combined Heat and Power, and Energy Storage**

27

28 **Q. Several parties have taken issue with the ISO's study assumptions as opposing**
29 **development of preferred resources (incremental demand response (DR),**
30 **uncommitted energy efficiency (EE), uncommitted combined heat and power**

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1 **(CHP) and energy storage). SCE’s testimony suggests that the study supports**
2 **only gas-fired generation, in contrast to SCE’s studies and testimony. What is**
3 **the ISO’s position on these issues?**

4
5 **A.** The ISO fully supports California’s energy policy goals and the loading order and
6 has been working diligently with state agencies to ensure that those goals are met
7 while maintaining system reliability, as indicated in my testimony in Track 1.

8
9 The ISO’s study approach is to model reasonable assumptions to assess residual
10 needs for resources regardless of what type of resource supplies them. Informed
11 decisions can then be made as to what resources should be authorized and procured.
12 The ISO further supports the joint agency preliminary plan that includes a goal to
13 procure 50% of those needs from preferred resources, and is also working to assist
14 in the development of preferred resources.

15
16 The CPUC and other state agencies are in a position to ensure that those preferred
17 resources are in fact developed, through the authorization of procurement or other
18 actions, if the need is clearly identified.

19
20 Further, the ISO has published information that identifies the characteristics needed
21 from preferred resources in order for those resources to meet local capacity needs.
22 The ISO’s goal is to ensure that demand response resources can meet operational
23 requirements in transmission-constrained local areas where additional local capacity
24 is needed. Unfortunately, demand response resources procured in the past have
25 often not met these criteria.

26
27 If the ISO instead simply assumed much higher levels of preferred resource
28 development, it would mask any potential system issues, state agencies and the
29 industry would be ill informed as to how much of those additional requirements
30 were actually needed to meet reliability requirements, they would also lack

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1 information on the necessary characteristics of the preferred resources, and
2 California would risk reliability in the region.

3
4 Of course, as additional procurement of preferred resources with the necessary
5 characteristics is identified, subsequent ISO studies will reflect those procurement
6 decisions in future study cycles.

7

8 **Q. Has the ISO followed through on its intentions expressed in Track 1 to assist**
9 **with the development of characteristics for preferred resources?**

10

11 **A.** Yes. Consistent with my testimony in Track 1, the ISO has developed a preliminary
12 methodology to assess the necessary characteristics for preferred resources to
13 address local capacity issues, and to proactively assist development of preferred
14 resources as an alternative for meeting these needs. This is evolving through the
15 ISO's 2013/2014 transmission planning cycle. The ISO released a discussion paper
16 on September 8th, with a stakeholder call following up on September 18th. In
17 addition, the initial application of that methodology was discussed in the most
18 recent stakeholder consultation session on September 25th.

19

20 The ISO is also working to explore process changes to ensure that the preferred
21 resources can be effectively utilized in the operating realm, particularly for those
22 preferred resources that are dispatchable but use limited, such as demand response.

23

24 **Q. Should changes be made to the Track 4 assumptions- purpose of Track 4?**

25

26 **A.** No. As Mr. Sparks discusses in more detail, the assumptions (regarding preferred
27 resources in particular) provided in the May 21, 2013 Revised Scoping Ruling are
28 reasonable for assessing the residual needs in the local capacity areas; they also take
29 into account procurement that the CPUC has already authorized. As I indicated
30 earlier, additional preferred resources can be identified and authorized by the

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1 CPUC, or otherwise taken into consideration beyond the already-assumed amounts
2 to meet some portion of those residual needs without modifying the analysis already
3 performed. Modifying input assumptions and repeating analysis at this time simply
4 provides no additional value or information to the CPUC or industry.
5

6 **Q. Mr. Woodruff, on behalf of the DRA, discusses silver bullets and grand plans,
7 and suggests that the ISO believes it might have especially valuable
8 transmission projects to propose. Does the ISO consider that a single solution
9 exists to address the needs identified by the ISO?**

10
11 **A.** No. The ISO has identified significant incremental needs in the LA Basin and San
12 Diego that lend themselves to a basket of solutions, e.g. a balance of preferred
13 resources, conventional resources, and possibly transmission. In that context, the
14 ISO agrees in general with the summary of advantages and disadvantages associated
15 with various resource choices set out in Mr. Woodruff's testimony.

16
17 The ISO has concluded that there are a number of transmission alternatives that
18 warrant study and consideration, which is taking place in the 2013/2014
19 transmission planning cycle. Parties should not assume any particular outcome of
20 that process.

21
22 While the ISO's 2013/2014 transmission planning process will provide enhanced
23 input into future LTPP processes, the study results in the 2012/2013 planning
24 process provided a frame of reference for the approximate magnitude of impact a
25 significant transmission facility could provide, and a very high level cost estimate
26 for a representative project. A local capacity reduction benefit of approximately
27 1000 MW was assessed for the representative transmission project, at a capital cost
28 of between \$1 to 2 billion.
29

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1 **Q.** **What role does the ISO give to the joint agency task force plan, the**
2 **“Preliminary Reliability Plan for LA Basin and San Diego” referred to by Mr.**
3 **Fagan (attached to Mr. Rogers’ testimony) and presumably the “grand plan”**
4 **referred to by Mr. Woodruff?**

5

6 **A.** The joint agency task force plan describes the alignment of the ISO and state agency
7 staff with regard to the scope of the issues and potential path forward to address
8 reliability needs in light of the closure of SONG. Given the range of the issues
9 being faced and the numerous proceedings and agencies affected, coordinated action
10 is critical. The array of agencies and organizations with authority over aspects of
11 the issues involved include the CPUC, CEC, ISO, State Water Resources Control
12 Board, the South Coast Air Quality Management District, and probably others. Of
13 course, the plan does not pre-empt agency processes such as CPUC proceedings and
14 ISO stakeholder engagement and public process, including the ISO’s transmission
15 planning framework. But, the plan is an important indicator of the level of
16 alignment around the need for prompt action to address reliability needs in the
17 region.

18

19 **Q.** **In this context, is there any reason that the CPUC should not consider the**
20 **requests of SCE and SDG&E for authorization of additional procurement in**
21 **this proceeding?**

22

23 Given the importance of maintaining reliability in this heavily populated, urban area
24 of California, and the complex array of actions necessary to meet the residual needs
25 identified by the ISO, it is urgent for the Commission to authorize an all-source
26 procurement for SCE and SDG&E for the amounts requested. This is much
27 different, of course, than authorizing a comprehensive amount of procurement
28 meant to address all the residual needs, which we advised against in Mr. Sparks’
29 initial testimony.

30

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1 **Q. Several stakeholders have suggested that delays in the retirement of Once**
2 **Through Cooling (OTC) generation should be considered as a means to**
3 **address residual needs. Do you agree?**

4
5 **A.** Delaying OTC retirements should not be considered as a means to meet residual
6 needs for a number of reasons. First, planning and procurement should be based on
7 the assumption that parties will comply with all applicable state, federal, and local
8 regulations. Whether or not OTC compliance dates are changed is under the
9 authority of the State Water Resources Control Board (SWRCB). Thus, delays to
10 OTC compliance dates have not and should not be assumed in assessing future
11 needs. Second, the existing OTC plants are inefficient, slow moving, and near the
12 end of their economic life. Keeping them in place delays air quality improvements
13 and slows modernization necessary to address changing reliability needs.

14
15 However, it is reasonable to explore OTC compliance delays if the timing alone
16 would otherwise lead to a less ideal long term solution strictly due to slight
17 differences in implementation timelines for preferred alternatives that could include
18 DR, energy efficiency, storage, or transmission.

19
20 **The ISO's Study Methodology: Transmission Planning Standards, the N-1-1**
21 **Contingency and Load-Shedding**

22
23 **Q. Many of the parties to this Track 4 proceeding, including Mr. Woodruff, have**
24 **raised issues about the ISO's application of NERC/ WECC/ISO transmission**
25 **planning standards embodied in the study methodology approved by the**
26 **Commission in D.13-02-015 (Track 1 decision) and also in D.13-03-029**
27 **(SDG&E procurement decision). Do you believe that this topic and the ISO's**
28 **study methodology in general are issues to be addressed in Track 4?**

29
30 **A.** No. As discussed in Mr. Sparks' opening testimony, the issue has been reviewed
31 and considered in the Track 1 proceeding. Mr. Sparks' rebuttal testimony also

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1 touches on his rebuttal testimony recently submitted in the Commission proceeding
2 evaluating the need for the Pio Pico generation facility, Docket A.13-06-015. In
3 that filing, the ISO also argues against accepting large amounts of load shedding as
4 an acceptable long term transmission planning solution in highly urbanized areas of
5 the ISO grid. This is consistent with ISO planning in all urbanized areas of the grid,
6 including those in the SCE and PG&E service territories. I also touch on a number
7 of issues raised in other parties' testimony below.

8

9 **Q. Several parties have expressed concern about the validity of the ISO's**
10 **application of the N-1-1 requirements in its planning standards. Is there any**
11 **merit to this concern?**

12

13 **A.** No. The ISO's application of the N-1-1 limiting contingency of the ECO-Miguel
14 and Ocotillo-Suncrest circuits is consistent with the ISO's historical practices. In
15 planning the needs of the system, the ISO's practice has been not to rely on
16 significant volumes of load shedding to mitigate Category C contingencies in
17 densely populated urban areas. As described in more detail in Mr. Sparks'
18 testimony, the ISO relies on occasion on smaller blocks of load shedding, as well as
19 larger blocks of load shedding on an interim basis until a permanent capital solution
20 can put in place. Further, load shedding through SPS has been utilized effectively to
21 achieve operational efficiencies where alternative sources are available to either
22 restore load, or to take the place of relying on the load shedding as a mitigation if
23 the operational risks are higher than normal (due to weather or fire conditions, for
24 example). However, planning to rely on large blocks of urban load shedding with
25 no alternative means of supply has not been the ISO's historical practice, nor has it
26 been the current practice in assessing local capacity needs. The ISO also
27 understands that this is consistent with the practices of most ISOs in the United
28 States and Canada.

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1 As Mr. Sparks' testimony indicates, load shedding was discussed in the Sunrise
2 proceeding as an undesirable consequence of selecting the alternative route which,
3 at that time, was classified as a simultaneous double circuit Category C outage.

4
5 The circumstances being considered today have evolved from the conditions
6 discussed at that time. Clearly, the sensitivity of potentially relying on large blocks
7 of urban load shedding (with no other available mitigation regardless of operating
8 conditions) is higher today for a number of reasons supporting at least maintaining
9 the current planning practices and not reducing them to a lower level. This is
10 especially the case in San Diego, the eighth largest city in the US and second largest
11 in California, with a high concentration of tourism and significant military facilities.

12
13 More recent outages in the area have also escalated customer reliability concerns,
14 and highlighted the impact that larger outages have on customers – impacts that
15 compound and reach beyond the sum of impacts otherwise felt due to individual
16 customer outages.

17
18 The retirement of the SONGS has also significantly increased concerns for security
19 in the area, making the system much more dependent on power flows into San
20 Diego from the east. At the same time, there are tangible risks, fires in particular,
21 that can impact both 500 kV circuits reaching into San Diego.

22
23 Further, as the industry plans for, and anticipates, a wider range of potential
24 operating conditions in the future as the makeup of the resource fleet changes, it will
25 be critical to ensure that reliability is maintained in the transition.

26
27 However, as Mr. Sparks' testimony describes in more detail, the application of these
28 historical practices does not negate the significant benefits the Sunrise project has
29 provided to the grid in enabling development of renewable generation and
30 substantially reducing local capacity needs in the order of 1000 MW.

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The ISO's Board of Governors is aware of the ISO's historic practices in regard to the consideration of N-1-1 contingencies. The ISO agrees that to ensure greater transparency, it would be best if these practices related to Category C contingencies are addressed as well in the ISO planning standards, and intends to conduct an open stakeholder process to augment its planning standards in the first half of 2014.

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Q. Several stakeholders have suggested that detailed cost benefit analysis needs to be performed before accepting the ISO's position regarding protecting against the specific N-1-1 limiting contingency in the ISO analysis. Is this a practical approach?

9

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A. The suggested approach of performing detailed cost benefit analysis in every case of considering reinforcement beyond the minimums established by NERC is not a practical consideration in all cases and not a practical consideration in this particular case. As I described in my Track 1 testimony, deterministic criteria have generally been adopted in transmission planning processes based on historical experience, in contrast to the probabilistic analysis used in generation planning scenarios. This has occurred largely because the number of combination of events that need to be studied in a more complex transmission network such as the LA Basin and San Diego systems cannot be fully assessed on a probabilistic basis due to both data limitations and limitations of analytical tools. There are cases where the number of combinations of potential system conditions are more limited, and a cost-benefit analysis can be employed and provide meaningful input into decision-making processes, but this is not universal. The ISO employs these methods where circumstances allow.

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However, given the practical limitations associated with conducting a cost/benefit analysis for each Category C contingency, the ISO has therefore continued the historical practice of limiting the amount of load shed relied upon on a long term

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1 basis in densely populated urban areas and has employed cost/benefit analysis as a
2 useful tool in cases where it is appropriate.
3

3

4 **Q. At page 2 of his testimony, Mr. Powers suggests that LADWP plans only to the**
5 **minimum NERC planning requirement and provides a system of higher**
6 **reliability than SCE and SDG&E in referring to a referenced document**
7 **prepared by LADWP. Can you respond to his assertions?**

8

9 **A.** A plain read of the referenced document contradicts Mr. Powers' assertion that the
10 LADWP system is planned to the minimum NERC standard level without additional
11 criteria also being applied. To the contrary, the LADWP system relies on more than
12 meeting the minimum NERC standards.

13

14 In addition to the NERC requirements, the LADWP document both refers to
15 additional WECC requirements and provides a listing of additional LADWP
16 requirements that are beyond and in addition to NERC and WECC requirements.¹
17 The report also details several load shedding arrangements that are being relied
18 upon for double contingency Category C outages until a new facility is placed in
19 service (comparable to the ISO's reliance on interim load shedding). The document
20 further acknowledges additional actions being taken to mitigate a Category D
21 contingency despite being beyond NERC requirements. (In that case, the installation
22 of a load shedding arrangement is not required to meet Category D performance
23 requirements.)²

24

25 **Q. Mr. Fagan has suggested that load shedding could be an interim “bridge” until**
26 **permanent solutions are implemented. Do you agree with this approach?**

27

¹ See LADWP, 2012 Ten-Year Transmission Assessment (Dec.2012) at page 8. The weblink to this document can be found at footnote 7 of Mr. Powers' testimony.

² *Id.* at pages 2-3.

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1 **A.** Yes. ISO historical practice has been to generally allow urban load shedding for
2 Category C contingencies only for interim periods while mitigation is being
3 deployed and as a last resort. There are two such load shedding arrangements
4 currently in place, which have transmission projects underway to eliminate the need
5 for the load shedding. In addition, the ISO very recently relied on load shedding in
6 SCE's south Orange County area until the Del Amo-Ellis loop in project could be
7 completed in the summer of 2012. A different load shedding arrangement was
8 relied upon until the Barre-Ellis reconfiguration and the Johanna, Santiago and
9 Viejo shunt capacitor bank projects could be completed in the summer of 2013.

10

11 **Q.** **Based on the testimony presented in Track 4, should the Commission re-**
12 **evaluate its prior decisions regarding the ISO's study methodology and the**
13 **ISO's position load shedding for N-1-1 contingencies?**

14

15 **A.** No. I have addressed a number of the issues raised in the testimony of others, and
16 Mr. Sparks has addressed the other issues in more detail. None of the parties
17 submitting testimony have presented any compelling basis for the Commission to
18 change its use of the ISO's LCR methodology for determining local capacity needs
19 for the LA Basin and the San Diego local areas in D.13-02-015 and D.13-03-029.

20

21 **Q.** **Does this conclude your rebuttal testimony?**

22

23 **A.** Yes, it does.