

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.)
_____)

R.12-03-014
(Filed March 22, 2012)

ALLIANCE FOR NUCLEAR RESPONSIBILITY'S

TRACK 1 OPENING BRIEF

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I. EXECUTIVE SUMMARY

Pursuant to Rule 13.11 and the common briefing outline established by ALJ Gamson, the Alliance for Nuclear Responsibility (“A4NR”) respectfully submits its Opening Brief in Track 1 of the current Long-term Procurement Proceeding (“LTPP”) of the California Public Utilities Commission (“Commission”). The Commission’s past LTPP efforts have been notably unsuccessful in prompting new investment at existing generation sites in Southern California Edison Company’s (“SCE”) service territory, especially along the coast. Against this backdrop, R.12-03-014 seeks to address an increasingly unsustainable reliance on aging power plants. Uncertain availability of the San Onofre Nuclear Generation Station (“SONGS”), combined with a potentially unfounded assumption about the transfer of load between the Mira Loma and Rancho Vista substations, could make the procurement need more than twice as large as the significant amount previously identified by the Independent System Operator (“ISO”). SCE has outlined a broadly acceptable manner in which to proceed, which will require the diligent oversight of the Commission to assure conformity with California’s energy and environmental priorities.

II. DETERMINATION OF LOCAL CAPACITY REQUIREMENTS (“LCR”) NEED IN CALIFORNIA INDEPENDENT SYSTEM OPERATOR (“CAISO”) STUDIES

Track 1 of R.12-03-014 attempts to fuse a never previously attempted 10-year planning horizon for Southern California LCR to the Commission’s long-term procurement process. Past LTPP efforts have failed to induce SCE to significantly diminish its reliance upon aging gas-fired

plants along the coast,¹ but looming restrictions on once-through-cooling and the seemingly open-ended outages of both units at San Onofre appear to have created a renewed sense of urgency.

A. CAISO's LCR and Once-Through Cooling (OTC) Generation Studies

As specified in the May 17, 2012 Scoping Memo, Track 1 is to focus on the studies served in testimony by the ISO.² Given that the ISO's LCR/OTC analyses was largely completed prior to the extended nature of the SONGS outages, it is unsurprising that the ISO studies assumed SONGS availability as an LCR resource in 2021.³ Even though the Scoping Memo made clear that "parties will have the opportunity to present evidence that the ISO's studies should be modified, or that the Commission should consider additional factors beyond the ISO's studies, for the purposes of determining local reliability needs,"⁴ SCE attempted to block A4NR's participation in Track 1 on the grounds that A4NR's expressed intent to "focus on a

¹ D.06-07-029, citing *"the urgent need to bring new capacity on line as soon as 2009, at least for Southern California"* (p. 3) and *"the fact that SCE has not signed any long-term contracts to promote new generation"* (p. 10) despite having been previously authorized by D.04-12-048 to do so, ordered SCE to procure 1,500 MW (p. 61, Ordering Paragraph #1). Notably, in the same proceeding the California Energy Commission ("CEC") had recommended a four-year phase-out of reliance on 8,088 MW of aging plants, including all of the OTC units, because *"it would be imprudent for SCE to contract with these aging units beyond 2012."* CEC Final Transmittal of 2005 Energy Report Range of Need and Policy Recommendations to the California Public Utilities Commission, Publication # CEC-100-2005-008-CMF., December 16, 2005, p. 114.

² R-12-03-014, Scoping Memo, May 17, 2012, p. 5.

³ The vulnerability of the Southern California electricity grid to an extended SONGS outage was highlighted in late 2011 by the Legislative Analyst's report evaluating a proposed nuclear shutdown ballot initiative, which was co-signed by the Governor's Director of Finance:

- *"(c)losing the two nuclear facilities would impede reliable access to electricity in the state. In particular, the loss of the SONGS plant would reduce the capacity to deliver electricity in the Los Angeles Basin area to below state and local standards for reliability."*
- *"As a result, the risk of rolling blackouts would be increased significantly in that area."*
- *"If rolling blackouts continued for several years, as new electricity plants and transmission lines were built, the resulting economic loss could be substantial, potentially in the tens of billions of dollars annually."*
- *"The increases in electricity rates under these circumstances could eventually be very significant and could affect state and local government revenues and costs."*

LAO Fiscal Report 11-0042, November 3, 2011, p. 4.

⁴ R-12-03-014, Scoping Memo, May 17, 2012, p. 5.

more prudent approach to uncertainties about the availability of SONGS ... in designing the procurement system to meet local and system reliability needs”⁵ was beyond the scope of Track 1 and should be relegated to Track 2 – despite the fact that Track 1 is exclusively focused on LCR issues.⁶ A4NR was granted party status with no such restrictions at the Prehearing Conference of July 9, 2012, but SCE successfully brought motions to strike nearly all testimony by other parties which made reference to SONGS availability.

Nevertheless, the uncertain long-term status of the two SONGS units, compounded by the ISO’s exceptionally optimistic modeling assumption about a distribution system load shift between the Mira Loma and Rancho Vista substations, cause A4NR significant doubt about the claimed conservatism of the ISO’s estimate of LCR needed for replacement of OTC generation.⁷

The ISO’s prepared testimony acknowledged this impact of its San Onofre assumption:

Q: Is SONGS assumed to be operational in these ISO OTC studies?

A: Yes. However, in the ISO 2012-2013 Transmission Planning process, the ISO is performing a transmission planning study to evaluate the long-term reliability

⁵ A4NR, Motion Seeking Party Status, July 3, 2012, p. 1. As had been noted four years ago in the CEC’s earlier report, “An Assessment of California’s Nuclear Power Plants: AB 1632 Report,” adopted November 20, 2008. “In the current energy agency planning processes, there does not appear to be an overt consideration of lengthy shutdowns for the nuclear unit on reliability or other implications for customers ... The Energy Commission, CPUC, and California ISO should further evaluate the unique uncertainties of losing the electricity provided by Diablo Canyon and SONGS over an extended period, identify how resources might be acquired that have an energy supply capability beyond that used in normal market conditions, and modify the long-term planning and procurement process at the CPUC to ensure that these resources are acquired in a timely manner,” pp. 23 – 24. Until R.12-03-014, this recommendation remained unaddressed by California state government.

⁶ SCE, Response to A4NR’s Motion Seeking Party Status, July 6, 2012, and Response to A4NR’s Notice of Intent to Claim Intervenor Compensation, July 6, 2012.

⁷ The ISO’s prepared testimony summarized its estimate of LCR need as follows: “As shown in Tables 1, 2, and 6, there is an identified need for approximately 2400 MW of replacement OTC generation for the Trajectory RPS scenarios in the Western LA Basin, if the generation is selected from the most effective sites for mitigating the Western LA Basin transmission constraint. There was also an identified need for 225 MW in the Ellis sub-area (which is included in the Western LA Basin) and 430 MW of replacement OTC generation in the Moorpark sub-area. The ISO recommends the long-term procurement of these amounts of replacement OTC generation, to ensure continued reliable operation of the ISO transmission system.” ISO-01, p. 17.

*impacts if SONGS were not available for operation. It is expected that the need for replacement OTC generation within the LA Basin area, Western LA Basin sub-area, Ellis sub-area, Big Creek/Ventura Area, and Moorpark sub-area will be **substantially higher** under this planning scenario.⁸ (emphasis added)*

Subsequently, the ISO's prepared reply testimony characterized the assumption of SONGS being "one very optimistic assumption".⁹

Under questioning from Assigned Commissioner Florio, ISO witness Sparks described the even larger optimism (in terms of megawatts) embedded in the ISO's studies concerning the transfer of 600 MW of load from the Mira Loma substation to the Rancho Vista substation.¹⁰

Q. *I want to make sure I understand. You're saying that it takes 2- to 3000 megawatts of OTC generation to relieve that overload under the current configuration or under the future configuration?*

A. *Oh, no. Under – without the distribution project we just discussed –*

Q. *Okay.*

A. *-- it required 2 to 3000 megawatts more. If we put in the distribution project, we could reduce the amount by 2 to 3000 megawatts.*

Q. *Would that be a direct reduction to the LCR requirement then?*

A. *Yes. In the overall LA Basin, as well as with the western LA basin.*

Q. *So that's pretty significant, isn't it?*

A. *Yes. That's why we, as we proceeded with the studies, we tended to assume that would be in place.¹¹*

⁸ ISO-01, p. 15.

⁹ ISO-03, p. 3.

¹⁰ "(W)e installed some 230 to 66 kV transformers, and some limited amount of 66 kV distribution lines to enable some of the load that – currently at Mira Loma, the two substations are fairly close together to be transferred over to Rancho Vista so that the 500 230 kV transformer at Mira Loma can be relieved, the loading can be relieved." R.12-03-014 Transcript, August 7, 2012, p. 83.

¹¹ R.12-03-014 Transcript, August 7, 2012, p. 85.

Mr. Sparks' elaboration of just what lies behind this assumed load transfer, worthy though it may conceptually be, revealed an unmistakably vaporous quality:

*We discussed it with Edison in a couple of conversations. But it's actually a distribution project, so it's difficult for the ISO to lead that process. But we have raised it with Edison ... My understanding is that it is sort of the master plan that Edison has for their distribution system and that there may be a need to accelerate it and to relieve some transmission constraints. But the cost of it is not small. At least our expected cost of it we don't have an estimate from Edison.*¹²

Indeed, on redirect, Mr. Sparks backtracked considerably:

Q. And I believe that you mentioned that it was your understanding that the Mira Loma mitigation plan was in Southern California Edison's master plan, is that correct, that is what you stated yesterday?

A. I believe I mentioned that, yes.

Q. Have you had an opportunity to have additional discussions with Southern California Edison since the time you presented that information to Commissioner Florio?

A. Yes, I have.

Q. And what did you learn?

*A. SCE informed me that isn't part of their master plan at this point in time.*¹³

SCE's prepared reply testimony also downplayed the significance of the Mira Loma/Rancho Vista load transfer, saying politely, "The feasibility of the proposal has not been fully developed."¹⁴ On cross-examination, however, SCE witness Cabell was more dismissive: "I am questioning the feasibility because we have not, as I said in my testimony, the feasibility has not been fully developed."¹⁵

¹² R.12-03-014 Transcript, August 7, 2012, pp. 83 – 84.

¹³ R.12-03-014 Transcript, August 8, 2012, pp. 264 – 265.

¹⁴ SCE-02, p. 19.

¹⁵ R.12-03-014 Transcript, August 13, 2012, pp. 827 – 828.

Q. *Isn't it true that SCE has not performed any technical analysis on the 600-megawatt load transfer?*

A. *Not at this point in time.*

Q. *No power flow analysis was done by SCE in regard to this transfer?*

A. *Not at this point in time.*

Q. *And SCE has not done any other technical analysis regarding the 600-megawatt transfer?*

A. *Not at this point in time.*

Q. *Has SCE analyzed CAISO's power flow modeling in this proceeding as related to the 600-megawatt load transfer?*

A. *What do you mean by analyze?*

Q. *Have you done your own analysis on their numbers?*

A. *No, we have not.*¹⁶

Despite 2,246 MW of officially prescribed optimism about SONGS and “2 – 3,000 MW” of conjectural benefit from a vaporware load transfer on SCE’s distribution system, uncertainty about San Onofre pervaded the testimony of key witnesses in R.12-03-014. The ISO’s prepared testimony emphasized that generation in the Ellis subarea *“is highly effective in mitigating the Western LA Basin constraint, and is one of the most effective locations for replacing SONGS in any scenario where SONGS is not available on a short or long-term basis.”*¹⁷ (emphasis added). ISO witness Millar told Commissioner Florio that it was preparation for a summer without SONGS that caused the ISO to conclude that not even the SCE air conditioner cycling

¹⁶ *Ibid.*, p. 828. As Ms. Cabell had responded to Commissioner Florio, “We haven’t actually studied it. It was discussed with the ISO as a possibility in light of these proceedings. It’s something that would need a lot of further investigation to determine basically how you would go about and design the system to be able to transfer that much load to another station and obviously the cost and feasibility of it.” *Ibid.*, p. 782.

¹⁷ *Ibid.*, August 7, 2012, pp. 89 – 90.

program could be relied upon for LCR, *“but I have to admit, that was the program that we looked at the hardest as being or holding the highest potential of perhaps helping us with the situation.”*¹⁸ And his prepared testimony specifically tied the urgency of a timely CPUC decision to San Onofre:

*It is important that the Commission take action this year, not only because of the lead times required for permitting and constructing new generation and the pending OTC compliance dates, but because of the additional uncertainty caused by the current SONGS outage.*¹⁹

As Mr. Millar explained:

*I do need to emphasize that the SONGS generation is a bit unique because it is part of the qualified resources inside the LA Basin. It is a key injection point into the San Diego area. So this power plant, because of its location, plays a role in an even more complex way than most of the generation that we’re talking about.*²⁰

But it was SCE’s Manager of Resource Planning, witness Minnick, with 38 years of service at the utility,²¹ who seemed the most shaken by the San Onofre situation:

Q. *Did you give any thought to the scenario where SONGS doesn’t operate before 2022?*

A. *You mean it sort of stays in its current situation?*

Q. *That’s correct.*

A. *We haven’t done any detailed studies of that contingency to be totally honest because this particular outage was a surprise to us.*

Q. *Just unthinkable that you would have to deal with this contingency, wasn’t it?*

¹⁸ *Ibid.*, August 9, 2012, p. 353.

¹⁹ ISO-06, p.19.

²⁰ R.12-03-014 Transcript, August 9, 2012, p. 370.

²¹ *Ibid.*, August 13, 2012, p. 933.

A. *It's never unthinkable, but it's a low – we thought it was a very low risk probability.*

Q. *What role would you see that scenario playing in your local reliability procurement planning?*

A. *Hypothetically, if SONGS weren't to return, as you have seen from the filing we have made and made information public right now, our grid in Western L.A. or Orange County area has some issues. And we try to like to mitigate those as soon as possible if that were the case.²²*

As he went on to say,

- *The SONGS outage, and I don't like to bring it up, has caused us to do some short term analysis very quickly on what might be able to be done. I personally don't like band-aids. So I like to do long-range planning.²³*
- *Most of the things you can do in the short term, and we have done a few this year because of San Onofre, are what I call patches or band-aids on the system. They may help a little bit, but their cost/benefit ratio may not be that good.²⁴*
- *To be honest, certain things have occurred this year that make it a little more urgent we hadn't anticipated. So we need to start looking at this right now is why I'm urging the Commission to let us start the process ...²⁵*
- *Yes, I am not going to be stubborn enough to say transmission fixes can't be found. We are trying to do things right now to help the situation in Southern California because of the SONGS outage.²⁶*

A4NR shares Mr. Minnick's distaste for band-aids, and his apprehension about "little bit" solutions with cost/benefit ratios that "may not be that good." Based on the evidentiary record in this proceeding, and the historical context of the Commission's prior LTPP misadventures with SCE, that seems to be where we are headed. Given the possibility of future

²² *Ibid.*, pp. 934 – 935.

²³ *Ibid.*, p. 956.

²⁴ *Ibid.*, p. 957.

²⁵ *Ibid.*, August 14, 2012, p. 992.

²⁶ *Ibid.*, p. 998.

true-ups and recalibrations, as discussed further below, A4NR has no better range of need to put forward than the ISO's estimate described in Footnote 7 above. However, in light of the arbitrarily prescribed optimism concerning SONGS and the fantasy quality of the assumed Mira Loma/Rancho Loma load transfer, this can only be characterized as the worst sort of magical thinking.

B. Consideration Of Preferred Resources, Including Uncommitted Energy Efficiency, Demand Response, Combined Heat and Power, and Distributed Generation, In Determining Future LCR Needs

A4NR considers the "loading order" established by the Energy Action Plan in 2003²⁷ to be the cornerstone of California's energy policy. It emerged from the wreckage of the notorious 2000-01 electricity market meltdown, and has provided a pragmatic approach for decisions by state agencies in a subject area usually fraught with political gridlock. Much of its resilience over the past decade derives from its grounding in values held deeply by a large proportion of all Californians. A4NR believes the "loading order" should serve as the definitive guide to utility resource procurement, and is confident that both the Commission and SCE are committed to assuring that it does.

What should never be forgotten, however, is that the "loading order" derives from an **action** plan (emphasis added) -- not a sterile metaphysical debate. Its function over the years has been to promote movement forward, guiding new investment through an otherwise

²⁷ The Energy Action Plan was adopted April 18, 2003 by a unanimous vote of the California Power Authority; April 30, 2003 by a unanimous vote of the CEC; and May 8, 2003 by a 3-2 vote of the CPUC, and is accessible at <http://docs.cpuc.ca.gov/published//REPORT/28715.htm> It was updated by the CPUC and CEC in October, 2005 as Energy Action Plan II, which is accessible at <http://docs.cpuc.ca.gov/published//REPORT/51604.htm>

contentious minefield of competing claims. The Commission has historically had a difficult time inducing SCE to use past procurements to reduce reliance on Southern California's aging generation infrastructure. The Track 1 decision should require that SCE meticulously confirm the application of "loading order" priorities when seeking Commission approval of specific procurement contracts. But that should be SCE's future burden, and R.12-03-014 should not be diverted into a doctrinal dispute about the degree to which preferred resources can diminish the needs identified by the ISO. Doing so would be a perversion of the "loading order."

A4NR is qualitatively satisfied – its quantitative qualms are described in Section II. A. above – with the manner in which the ISO has specified the need for procurement. As explained in ISO witness Millar's prepared testimony, the Commission made determinations in D.06-06-064 regarding the LCR study criteria and test contingencies.²⁸ The LCR methodology tests the transmission grid's performance following simulated contingencies.²⁹ Because the options available to respond to such contingencies are significantly fewer in transmission-constrained local load pockets than across the entire ISO control area, satisfying LCR criteria can be substantially more demanding than meeting system-wide reliability criteria. The LCR need identified for SCE's service territory is based on injections of generation at existing power plant sites, which is unsurprising given the nature of the ISO modeling. Its range between 2,370 MW and 3,741 MW in the Western LA Basin varies depending on the mix of locations and quantities assumed for injection into the grid.

A4NR believes this is a straightforward approach. As made clear by Mr. Millar, whose prepared testimony asserted that "(p)rocurement should not be limited to conventional

²⁸ ISO-06, p. 6.

²⁹ *Ibid.*, p. 4.

resources³⁰ and addressed the potential roles of demand response, energy efficiency, CHP, and distributed generation³¹ :

*We are looking for the characteristics. We don't have an assessment of how much should be – of that resource requirement should be met from natural gas-fired generation or other types of resources. We are open to resources that provide the appropriate characteristics like natural gas-fired generation.*³²

Preferred resources were scarcely mentioned in SCE's prepared testimony -- and only to argue for "flexibility in contracting for new LCR resources,"³³ because changed assumptions about uncommitted energy efficiency or distributed generation or demand response could alter the ISO's need projection. On cross-examination, though, SCE witness Cushnie – stating that "Edison is technology neutral in terms of the resources that we acquire"³⁴ – formulated an approach:

So as you pointed out, energy efficiency and demand response are at the top of the preferred loading order. Preferred loading order is implemented by having the utilities pursue all cost-effective preferred resources and as a last measure relying on conventional fossil fired resources. The key here is cost-effective.

³⁰ *Ibid.*, p. 19.

³¹ *Ibid.*, pp. 11 - 13. Mr. Millar's prepared testimony also addressed the apples/oranges distinction between LCR benefits and system-wide benefits inherent in current demand response program design: "The ISO does not agree that Demand Response can be relied upon to address local capacity needs, unless the DR can provide equivalent characteristics and response to that of a dispatchable generator. Demand Response programs have generally been considered an alternative to generation resources in meeting system-wide load and supply balances. Spread over a larger system, the exact amount of DR that materializes, and the location, is not relevant (within certain bounds)... However, these characteristics at a broad system-wide level are not sufficient to enable inclusion of the resources to address local capacity requirements triggered by transmission-related contingencies. The system must be positioned to withstand any single contingency. Typically, following a contingency event, the ISO is faced with restoring the system to a state positioned for the next, worst contingency within 30 minutes. These types of requirements are location specific and time specific. Unlike the system needs (where DR resources are helpful as part of a range of mitigations even without certainty about the resource characteristics and it is sufficient to simply avoid DR resources that could compound a problem), addressing local capacity requirement issues that are contingency-driven requires prompt and dependable response – operators simply cannot wait to see what materializes, and still have time to respond to address a shortfall." *Ibid.*, pp. 13 – 14.

³² R.12-03-014 Transcript, August 9, 2012, p. 460.

³³ SCE-01, p. 7.

³⁴ R.12-03-014 Transcript, August 10, 2012, p. 604.

What Edison would do is as study, probably multiple studies. It would identify each preferred resources in the loading order starting with energy efficiency, demand response, renewables, CHP, distributed generation. And assess the supply that is available, the economics of that supply, the viability of that supply, and the effectiveness of that supply in meeting the LCR need.

To the extent that resources that are preferred are cost-effective and viable and effective in meeting the need from a cost-benefit standpoint, then Edison will recommend those as part of its LCR solution. And that showing will be made in one or more applications for any PPA that we submit to the Commission for a conventional fossil fuel fired power plant.³⁵

Mr. Cushnie was also clear that SCE's burden of proof regarding loading order compliance would be significant:

The showing would be much more substantial than what we do today. Today all the procurement on behalf of bundled customers goes through our AB 57 procurement plan, and there's an after-the-fact showing in the form of a quarterly compliance report that demonstrates how the procurement was consistent with the procurement plan. This would be an application to the Commission, and we would have to specify how we complied with preferred loading order and how we met the LCR need that the Commission is authorizing us to do assuming that we get such authorization.³⁶

A4NR considers this a sensible approach, and recognizes that transmission system physics may compel some peculiar trade-offs among preferred resources. Those who see California's 33% renewables target as a floor rather than a ceiling might actually prefer an LCR

³⁵ *Ibid.*, pp. 612 – 613. Mr. Cushnie saw problems forcing some resources into an all-source solicitation: "Demand reduction programs probably can't be procured in a solicitation, if we do conduct a solicitation, because we are looking at meeting LCR need that begins in 2018 to 2020 and extends out for many years. It is not commercially feasible to put in place demand reduction programs in 2013 for that far-out term. So what we would have to do is make an assumption as to the economics and the viability of demand reduction programs...we can then do studies to see if that can reduce the LCR need to meet with supply side resources." *Ibid.*, p. 607. "And it's my experience that a demand reduction program cannot be commercially put in place seven, eight years into the future of its need. There's just too much uncertainty around the load that we would be interrupting to meet this requirement and the terms under which the load would be willing to interrupt." *Ibid.*, p. 679. "Actually, I think requiring or allowing all resources to bid in would be counterproductive. Certain preferred resources just aren't going to be able to be demonstrated to be viable in a solicitation. And a study would be a better route for us to assess their effectiveness and potential use ..." *Ibid.*, p. 628.

³⁶ *Ibid.*, p. 627.

strategy met entirely by gas-fired generation. SCE witness Minnick described the dynamic nature of LCR need:

Resource scenarios can change it. It can go up, or it can go down, meaning if I have resources in better locations, it will go down, if I have them in worse locations, it will go up. To be totally candid, if I put more renewables in the desert, it might actually go up...Having generation in the LA Basin gives us enough inertia to import power. If the inertia goes down, I'll be candid, your load reduction programs and direct current PV devices will not give us the inertia we need to import.³⁷

When cross-examined, SCE witness Cabell envisioned stepping up the deployment of various reactive power devices – synchronous condensers, static VAR compensators, shunt capacitors, etc. -- for voltage support as a means to support imports:

Q. And with the potential loss of a number of generators in the Western LA area, could we expect that those efforts to identify those opportunities would intensify?

A. Yes. If we do, in the Western LA Basin or the LA Basin, if we do lose that, the generation sources there with that reactive support, yes, we could then start seeing some identification of some additional electrical devices on the system to help support the import of power because I'm assuming on this, on the premise I'm assuming that the replacement resources are outside of the basin. So you'd have to deliver it through the grid, and to be able to support that delivery, we need the reactive support.³⁸

Rather than grapple with such choices now in the abstract, the Commission should demand a more developed evidentiary showing when SCE files an application for approval of any LCR contracts. SCE has proposed a workable solution that will assure an appropriate consideration of preferred resources before procurement is completed.

³⁷ *Ibid.*, August 14, 2012, pp. 997 - 998. To communicate better with the California public, A4NR suggests that inertia aficionados – most often found up to now in transmission grid control rooms – give serious thought to talking like nutritionists rather than engineers. Moderate intake of so-called “healthy fats” promotes the absorption of important fat-soluble nutrients like alpha- and beta-carotene and lutein, while increasing levels of HDL (“good” cholesterol) and reducing levels of LDL (“bad” cholesterol). A4NR cautions those inclined to overstatement, however, not to promote natural gas as the new olive oil.

³⁸ *Ibid.*, August 13, 2012, pp. 781 – 782.

C. Appropriate Assumptions Concerning Retirement of OTC Generation

A4NR considers the comments by various witnesses in the R.12-03-014 proceeding about the State Water Resources Control Board's ("SWRCB") compliance schedule for OTC generation to be unrealistically casual. The prevailing opinion seems to be that this is a discretionary policy on the part of California, rather than a legal obligation under the federal Clean Water Act.³⁹ The *Riverkeeper II* decision of the 2nd Circuit Court of Appeals⁴⁰ "continues to provide some legal authority" according to the SWRCB,⁴¹ despite its partial reversal by the U.S. Supreme Court. More significantly, after the Supreme Court reinstated the challenged federal regulations, the EPA withdrew them – making the standard applied by the SWRCB "best professional judgment."⁴² The "best professional judgment" standard remains applicable only as long as there is no nationwide standard, and the EPA recently amended its settlement agreement with the *Riverkeeper II* plaintiffs to commit to placing notice of a new proposed nationwide standard in the Federal Register no later than June 27, 2013.⁴³

As described in Footnote 1 above, the repeated failure of the Commission's LTPP process to retire, replace, or repower the Southern California coastal plants that are at issue in

³⁹ Codified as 33 U.S.C. § 1326(b) but commonly referred to as §316(b) of the federal Clean Water Act .

⁴⁰ *Riverkeeper, Inc. vs. U.S. E.P.A.*, 475 F.3d 83(2007). The U.S. Supreme Court subsequently reversed the decision in part, upholding the federal Environmental Protection Agency's ("EPA") use of cost-benefit analysis and reinstating the regulations at issue. *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208 (2009).

⁴¹ SWRCB, Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, May 4, 2010, p. G-11.

⁴² *Ibid.*, p. G-14. As described by the SWRCB, "Best professional judgment" is a term of art used in developing technology-based limitations under §402(a)(1)(B) of the federal Clean Water Act ("such conditions as the [EPA] Administrator determines are necessary to carry out the provisions of this chapter") with factors set forth at 40 CFR §125.3.

⁴³ U.S. EPA, SECOND AMENDMENT TO SETTLEMENT AGREEMENT AMONG THE ENVIRONMENTAL PROTECTION AGENCY, PLAINTIFFS IN CRONIN, ET AL. V. REILLY, 93 CIV. 314 (LTS) (SDNY), AND PLAINTIFFS IN RIVERKEEPER, ET AL. V. EPA, 06 CIV. 12987 (PKC) (SDNY), July 17, 2012, accessible at <http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/loader.cfm?csModule=security/getfile&PageID=627843>

the SWRCB's OTC policy establishes a lamentable historic record. Whether a question to be determined under new EPA regulations, or California public trust doctrine, or the "best professional judgment" of the SWRCB, any material relaxation of the existing OTC compliance schedule is likely to be hotly litigated in the federal courts. Court administration of California's prison health care system has not been a particularly pleasant experience for state government. Judicial supervision of electricity grid management and utility procurement decisions could be considerably worse.

A4NR believes the Commission should assume the SWRCB's current compliance schedule remains intact.

D. Transmission and Other Means of Mitigation

Despite the apparent success in avoiding Southern California blackouts this summer – a fortuitous convergence of temperate weather and a tepid economy – A4NR considers the dependence on SONGS for grid stability to be a major rebuke to 15 years of ostensibly "independent" transmission planning by the ISO. Concentrated risk of such severity violates a foundation principle of prudent network management. A4NR expects the ISO's belated discovery of this exposure to prompt a vigorous assessment of alternative configurations, as confirmed by ISO witness Sparks:

The options that we expect to look at if – without SONGS where it is such a large hole, large loss of generation, we will be considering major transmission upgrades as part of the scope of work given that we've got the once-through cooling and loss of SONGS that – and the magnitude of generation which would be expected to place that is so large that it does make one want to look at a wider degree of options, wide range of options.⁴⁴

⁴⁴ R.12-03-014 Transcript, August 7, 2012, p. 93.

But Track 1 of R.12-03-014 has been structured to expressly consider SONGS fully operational throughout the next 10 years, so these “major transmission upgrades” being considered by the ISO are not likely to be considered by the Commission in this proceeding. The “large hole” created by the SONGS outage may indisputably turbo-charge the intensity with which the OTC replacement need is felt, but transmission alternatives for the OTC-related LCR procurement were generally characterized as de minimus.⁴⁵ As Mr. Sparks put it: *“I think most low-hanging fruit has been harvested, if you will.”*⁴⁶

A4NR agrees with Mr. Sparks that “the utilities tend to be incented to want to minimize their capacity needs”⁴⁷ and that transmission upgrades are likely to be a better fit for SCE’s business model:

*And I personally do somewhat rely on the idea that the transmission owners are incented to build transmission if that is going to save their ratepayers money rather than procuring generation. And from that perspective expect them to propose incremental transmission upgrades to reduce LCR requirements if they believe there are any. And that gives me some comfort that we are not procuring generation when there is cheap transmission lying around.*⁴⁸

SCE witness Cushnie corroborated SCE’s distaste for generation procurement:

*So there’s always risk in a long-term contract from the party that enters into the contract as a buyer. And it’s not something that we have any upside from. We don’t earn any rate of return on this. So it’s not something we want to do. We do it because it’s needed for reliability at this point in time.*⁴⁹

⁴⁵ Mr. Sparks acknowledged that the ISO made an engineering determination that installing reactive power increment shunt capacitors in the Moorpark sub-area to prevent voltage collapse might reduce the need for OTC capacity from 430 MW to 100 MW, but “based on the information we had, it did not appear to be something we were ready to recommend.” *Ibid.*, p. 103. As he described it, “we do not have detailed engineering staff. We rely on the transmission owners to develop feasibility and cost estimates of transmission upgrades ... we would need to get them involved to help us determine the feasibility of ideas that we were throwing out, even have them come up with ideas themselves and ultimately come up with, once it is determined to be feasible, cost estimates and schedules, that sort of thing. We didn’t even engage the transmission owners at this point.” *Ibid.*, p. 104.

⁴⁶ *Ibid.*, p. 235. ISO witness Millar drew the same conclusion. *Ibid.*, August 9, 2012, p. 421 and p. 450.

⁴⁷ *Ibid.*

⁴⁸ *Ibid.*, August 8, 2012, p. 259.

⁴⁹ *Ibid.*, August 10, 2012, p. 635.

A4NR believes that that these incentives, combined with the ISO's elaborate transmission planning process – now that it has been awakened to the SONGS vulnerability – are sufficient to assure that transmission system upgrades are afforded their rightful place⁵⁰ in conducting SCE's LCR procurement. No additional Commission proceeding needs to be initiated, no additional track to LTPP needs to be created. The synchronous condenser taxonomy conundrum⁵¹ identified by ISO witness Millar to Commissioner Florio should, at least for now, be ignored.⁵²

Regarding "other means of mitigation," the R.12-03-014 hearings served to relegate to urban legend status the notion that better coordination between the ISO and the Los Angeles Department of Water and Power would have a material impact on LCR requirements. As described by ISO witness Sparks:

⁵⁰ DRA witness Fagan favored transmission as a "first step" analytically. *Ibid.*, August 13, 2012, p. 918. *"(C)ontinue down the path of doing everything that needs to be done to make sure the preferred resources get procured the way that they should be procured, good energy efficiency programs, strong demand response programs. And in the meantime let's make sure that we have done everything that we possibly can do in transmission, especially transmission between West LA and the broader LA Basin."* (emphasis added) *Ibid.*, p. 919.

⁵¹ In Mr. Millar's words: *"When we look at getting synchronous condenser type support out of a natural gas generator, that actually is walking into the gray area between a resource and a piece of transmission equipment that we need to make sure we have and develop an appropriate framework for how to get that flexibility. We would hate to see the flexibility lost simply because we couldn't come up with a regulatory structure to take advantage of that equipment."* *Ibid.*, August 9, 2012, pp. 364 – 365.

⁵² The ISO appears to have done so at its Board of Governors meeting on September 13, 2012, by using the Reliability Must Run ("RMR") contract mechanism suggested by Commissioner Florio for conversion of Huntington Beach Units 3 and 4 to run as synchronous condensers. A4NR agrees with Mr. Millar that RMR contracts may not be the "right mechanism" to incent *"building a generator, a brand new generator with a clutch that can operate as a generator part of the time and as a synchronous condenser part of the time."* *Ibid.*, p.366. As Mr. Millar testified, *"And in fact, one trend we're seeing and I expect to see more of in California is for natural gas-fired generation to basically put install clutches between the turbine and the generator to allow the generator to provide the service just like a synchronous condenser even if the electricity isn't needed from the unit. And those kinds of installations are going in in a number of places across the world, especially as more renewable energy comes on line, and people are looking at the most effective way to provide additional reactive support and system inertia and at times recognizing they don't want to keep the natural gas-fired generator running 24 hours a day even if they need the voltage support 24 hours a day. That's an option I think we will be needing to explore as we get into the RFO that we're hoping to get going, is what are the mechanisms to encourage that kind of installation. That has to be done at the time. It is very difficult to retrofit a plant after it's built for that capability because otherwise there simply isn't room between the turbine and the generator."* (emphasis added) *Ibid.*, pp. 361 – 362.

The OTC plants owned by LADWP are geographically in the same proximity. But electrically they are distant from the other generation connected to the Southern California Edison system to the point that their effectiveness factors are below the 5 percent threshold. So they are not even considered to be eligible to meet the LCR requirement in the Western LA Basin or the LA Basin.

Now, the other factors that are outside the ISO balancing authority area, so they are considered imports. And we do have a methodology for modeling imports based on historical imports essentially during heavy summer load periods. And so the import level we've seen from LADWP, they are tied to Selmar (sic) and at Victorville-Lugo ... are eligible to be used for resource adequacy planning ... And so their contribution that we've been getting in the past continues, to the extent there is one, because they were imports. That is another reason why they wouldn't be showing as being effective ... They are effectively near the Vincent area, and constraints are – they tend to be south of Vincent.⁵³

In his prepared testimony,⁵⁴ DRA witness Fagan speculated about the benefits to be obtained from better coordination between the ISO and LADWP. On cross-examination, he backed off substantially:

A. The Cal ISO and LADWP are separate balancing area authorities, balancing authorities. So because of that they do their – separately they do dispatch and unit commitment. So generally there's room for operational improvements to the extent that adjacent balancing authorities are able to better coordinate their operation or perhaps even consolidate operations, as has occurred in a number of jurisdictions throughout the U.S. over the last decade or so.

Q. Do you have a reason to believe that that has not taken place between Cal ISO and LADWP?

A. I don't have the specific information about what LADWP and CAISO have done over the years in coordinating. I certainly presume that they have done some coordinating. But they do exist as separate balancing authorities now. So I think in particular, given the potential retirement of a lot of in-basin fossil units, it would be particularly important that they revisit that if they have not revisited it recently to make sure they are doing everything that they can do to maximize any operational efficiency improvements that might be gained through better coordination.

⁵³ R.12-03-014 Transcript, August 7, 2012, pp. 88 – 89.

⁵⁴ DRA-06, p. 12 and p. 13.

Q. Do you have any sense of what magnitude of efficiency improvement might potentially be there?

A. No, I don't, not specifically. My informed guess would be marginal but beneficial.⁵⁵

To summarize, A4NR believes that the LCR procurement process suggested by SCE, when combined with the existing ISO planning process, will adequately consider transmission upgrades as means by which to mitigate LCR need. Apart from the discussion of preferred resources contained in Section II. B. above, A4NR does not believe "other" means of mitigation exist. A4NR specifically discourages reviving the Commission leadership's earlier pipe dream of consolidating the ISO and LADWP balancing authorities.

III. DETERMINATION OF LCR NEED SPECIFIC TO LA BASIN AND BIG CREEK/VENTURA AREA

A4NR believes the determination of LCR need in Track 1 should not be seen as a one-time decision, but rather the initiation of a procurement process subject to periodic narrowly-focused updates and re-calibrations. A4NR views the process outlined by SCE witnesses in their Track 1 testimony as broadly satisfactory, but is wary of the intellectual meandering which the Commission has previously allowed in the LTPP process.

A. LA Basin

A4NR endorses the ISO's "trajectory RPS portfolio" estimate of a need of 2,370 – 3,741 MW⁵⁶, but with the strong reservations expressed in Section II.A. above concerning the SONGS optimism and the Mira Loma/Rancho Vista fantasy load transfer. These two dominant

⁵⁵ R.12-03-014 Transcript, August 13, 2012, pp. 899 - 900.

⁵⁶ ISO-01, p. 11.

assumptions sum to 4,246 – 5,246 MW of potentially phantom LCR resources, and require sustained and vigilant monitoring by the Commission.

B. Big Creek/Ventura Area

A4NR endorses the ISO's "all four RPS portfolios" estimate of a need for 430 MW,⁵⁷ subject to the same caveat expressed above regarding LA Basin need.

IV. PROCUREMENT OF LCR RESOURCES AND INCORPORATION OF THE PREFERRED LOADING ORDER IN LCR PROCUREMENT

A. Incorporation of the Preferred Loading Order in LCR Procurement

The only addition A4NR would make to its discussion of this issue in Section II. B. above is to highlight the statement of SCE witness Cushnie when cross-examined:

What Edison is proposing is that the upper bound of the need be established now, such that we don't need to relitigate what that upper bound is, but that Edison will have an obligation as part of any application that it submits to the Commission for approval of PPAs to demonstrate that in meeting that need, Edison could consider all cost-effective and viable preferred resources. And to the extent that they are solutions that are cost-effective that we can – that utilize preferred resources, then Edison will rely on those which will reduce the need to do conventional gas-fired generation.⁵⁸

A4NR finds this a desirable approach, subject to the caveat about recalibrating need identified in Sections III. A. and III. B. above.

B. Other Commission Policies and Consideration Affecting LCR Procurement

A4NR believes that the Commission's climate change and other environmental policies are highly compatible with its statutory obligation to ensure that investment is made in new

⁵⁷ *Ibid.*, pp. 13 – 14.

⁵⁸ R.12-03-014 Transcript, August 10, 2012, pp. 638 – 639.

generating capacity.⁵⁹ Discussion of California energy issues often glosses over the fact that AB 32, the Renewable Portfolio Standard, and the design of energy efficiency measures are overwhelmingly focused on energy rather than capacity. That does not mean that renewable generators do not deserve payment for the capacity benefit they provide, or that the Commission's oversight of utility efficiency programs should not place greater emphasis on reducing peak. Or that demand response doesn't remain an undernourished resource in California's policy mix.⁶⁰ But policies that are primarily driven by air emissions and water consumption will inevitably place their greatest focus on the production of electricity, not the capacity to generate it.⁶¹ Apart from visual effect – which may be difficult to discern at sites of existing plants -- the environmental impact of a power plant built at an OTC site for LCR purposes in Southern California will be directly correlated to the its actual operation.

Arguably, it might seem economically ill-advised to invest in generation assets that carry a risk of under-utilization. A4NR is convinced that the risk of over-capacity is considerably asymmetric to the risk of under-capacity,⁶² and suspects that Commissioners whose professional backgrounds intersected in some way with the Davis Administration may feel similarly. A4NR also believes that some degree of over-capacity may actually work to the electricity customer's economic benefit. A proven antidote to the market power which still lurks in corners of California's electricity system is abundant capacity. When tallied, the downward pressure on overall price per kWh can substantially outweigh the costs of building

⁵⁹ Cal. Pub. Util. Code §380(h) (2).

⁶⁰ A4NR adheres to the view that demand response is most productively considered a systemwide resource. Bemoaning its awkward fit with LCR is similar to discrediting solar and wind resources because of their variability.

⁶¹ There is an obvious exception for the large cooling water requirements of spent fuel pools associated with nuclear reactors, whether generating or not.

⁶² ISO-02, pp. 4 – 5: "A marginal shortage means the loss of firm load, which puts public safety and the economy in jeopardy, whereas a marginal surplus has only a marginal cost implication."

incremental capacity. Markets fluctuate. The customer focuses on the overall bill. So should the Commission.

C. If a Need Is Determined, How the Commission Should Direct LCR Need to Be Met

A4NR recommends that the Commission direct SCE to initiate procurement for both the LA Basin and the Big Creek/Ventura areas in the ranges identified in Section III. A. and III. B. above. A process which includes the studies/solicitation/bilateral negotiation approach and the timelines recommended by SCE's testimony should be broadly authorized, with semiannual reporting requirements. Track 1 should be temporarily continued after the Commission decision for the sole purpose of adjusting the determined need by 1,000 MW or more, and a status conference to determine the advisability of doing so should be held within 60 days of adoption by the ISO Board of Governors of the 2012-2013 Transmission Plan.⁶³

A4NR believes two other areas require the Commission's diligent attention in its oversight of SCE's LCR procurement. One is to assure that any meritorious prospect of load shifting on SCE's distribution system between the Mira Loma and Rancho Vista substations is properly analyzed on a timely basis. A4NR is not confident that the Commission has sufficient visibility into the opaque process of SCE's distribution planning, but the 2 – 3,000 MW of LCR benefit found by the ISO's analysis underpins the Track 1 need determination. It should either be promptly verified, or alternatives quickly developed.

A second is appropriate coordination between SCE and SDG&E in assessing SONGS-related responses to LCR needs in both service territories. ISO witness Sparks said on cross-

⁶³ ISO-01, p. 15 indicates that for this next 10-year exercise, "the ISO is performing a transmission planning study to evaluate the long-term reliability impacts if SONGS were not available for operation."

examination that the relative effectiveness of generation injections at the existing sites in the Western LA Basin would be unlikely to vary:

... given that their flow factors are really not dependent on what other generation is there, they are linear, if you will, such that with SONGS there the effectiveness factors are the same as without SONGS to a certain degree, not precisely, but generally they are not sensitive to whether SONGS is there or not.

Q. When you say 'to a certain degree,' how certain a degree? What range of difference in effectiveness factors?

A. Let's just assume the effectiveness factor is 10 percent of the generation flows, at 100 megawatts of generation on each, and it reduces the flow across that line by 10 megawatts. With SONGS I wouldn't expect that number, with or without SONGS I wouldn't expect that number to fluctuate by a megawatt.⁶⁴

Without contradicting Mr. Sparks, however, ISO witness Millar suggested that this calculation might be more complicated when injection points in the SDG&E service territory are taken into account:

I do need to emphasize that the SONGS generation is a bit unique because it is part of the qualified resources inside the LA Basin. It is a key injection point into the San Diego area. So this power plant, because of its location, plays a role in an even more complex way than most of the generation that we're talking about.⁶⁵

SDG&E witness Jontry explained that generation in the Western LA Basin, particularly the Ellis subarea and San Onofre, is very effective in allowing energy to flow down Path 44.

So it's necessary to have sufficient generation available in the LA Basin in order to reliably flow energy up to its path rating, which is 2500 megawatts.

... Path 44 is a WECC-recognized path with a capability of 2500 megawatts. We would like the Commission to minimize the LCR requirement on procurement across both San Diego and the Los Angeles areas, minimize the overall costs, but at the same time we have reliability need to maintain that 2500 megawatt capability post-contingency.

⁶⁴ R.12-03-014, August 7, 2012, pp. 90 – 91.

⁶⁵ *Ibid.*, August 9, 2012, p. 370.

To the extent that they don't require enough resources in the Western LA Basin in order to flow that 2500 megawatts, they will have to acquire more resources in San Diego to make up for that, for that inability.

... I think they would have to look at – the ISO would obviously have to be a part of this because they do the LCR need studies. They will have to look at the resources that are available both in San Diego and the LA Basin and determine what the overall least cost or best fit that allows both the capability of flowing that 2500 megawatts on Path 44 and minimize the overall cost for the combined basket of resources.⁶⁶

A4NR is not a party to the proceeding establishing SDG&E's LCR procurement needs, and does not have a specific recommendation as to how the Commission can best assure the proper coordination. But joint analysis indisputably needs to be done.

D. Appropriate Method(s) of Procurement

A4NR supports authorization of the full arsenal of methods requested by SCE's testimony, including so-called AB 1576 cost-of-service contracts.⁶⁷

E. Timing of Procurement

A4NR is generally supportive of the flexible schedule outlined by SCE's testimony, subject to the recommendation in Section IV. C. above that Track 1 should be temporarily continued after the Commission decision for the sole purpose of adjusting the determined need by 1,000 MW or more, and a status conference to determine the advisability of doing so should be held within 60 days of adoption by the ISO Board of Governors of the 2012-2013

Transmission Plan.

⁶⁶ Ibid., August 15, 2012, pp. 1228 – 1230.

⁶⁷ Cal. Pub. Util. Code §454.6.

V. INCORPORATION OF FLEXIBLE CAPACITY ATTRIBUTES IN LCR PROCUREMENT

A. If a Need Is Determined, Should Flexible Capacity Attributes Be Incorporated Into Procurement

A4NR agrees that this is a sensible idea, but believes clear specification of these attributes must await completion of Track 2.

B. Additional Rules, Not Already Covered By Resource Adequacy (RA) Rules, To Govern LCR Procurement

A4NR has not addressed this issue.

VI. COST ALLOCATION MECHANISM (CAM)

A. Proposed Allocation Of Costs Of Needed LCR Resources

A4NR has not addressed this issue.

B. Should CAM Be Modified At This Time?

A4NR has not addressed this issue.

C. Should Load Serving Entities (LSEs) Be Able To Opt Out Of CAM?

A4NR has not addressed this issue.

VII. OTHER ISSUES

A. SCE Capital Structure Proposal

A4NR is apprehensive about the potential for SCE to use its long avoidance of the modernization of generation assets in the LA Basin as leverage for still another of its over-

reaching gambits to shed customary utility responsibilities. On the other hand, both the Commission and SCE seem to have been reluctant to accept an unpleasant reality: if new generation infrastructure unavoidably depends upon utility procurement, the current debt/equity ratio may be unsuitable. SCE management's lack of confidence in its ability to earn authorized return, and the resultant dilution of existing shareholders from additional equity, should be confronted in a more direct way than blind acceptance of the deterioration of the generation infrastructure. The SWRCB's OTC policy lit a silent fire. The prospect of a permanent shutdown of one or both SONGS units brings it to a raging boil.

A4NR takes no position on this issue, other than to emphasize the immediate need to address physical LCR requirements and the unacceptability of further delay in doing so.

B. Coordination of Overlapping Issues Between R.12-03-014 (LTPP), R.11-10-023 (RA), And A.11-05-023

A4NR has not addressed this issue.

C. SCE Statewide Cost Allocation Proposal

A4NR takes no position on this issue, other than to emphasize the immediate need to address physical LCR requirements and the unacceptability of further delay in doing so.

D. CAISO Backstop Procurement Authority To Avoid Violating Federal Reliability Requirements

A4NR has not addressed this issue.

E. Energy Storage

A4NR has not addressed this issue.

VIII. CONCLUSION

The evidentiary record developed in Track 1 conclusively establishes that time is of the essence in meeting the LCR needs in Southern California. The Commission's past embrace of SCE's business strategy of prolonged reliance on aging plants has greatly contributed to the current urgency to replace OTC generation. Due to uncertainty about SONGS and potential over-optimism about load transfer between two substations, the LCR procurement need may be substantially greater than the ISO's current estimate. SCE has outlined an acceptable approach to moving forward. With appropriate oversight by the Commission and the continuing engagement of the ISO, this challenge can be met in a fashion consistent with California's energy and environmental policies. It deserves the Commission's immediate attention.

Respectfully submitted,

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