

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



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Order Instituting Investigation on the Commission's Own Motion into the Rates, Operations, Practices, Services and Facilities of Southern California Edison Company and San Diego Gas and Electric Company Associated with the San Onofre Nuclear Generating Station Units 2 and 3.

Investigation 12-10-013
(Filed October 25, 2012)

And Related Matters.

Application 13-01-016
Application 13-03-005
Application 13-03-013
Application 13-03-014

**PHASE 1A: BRIEF OF SOUTHERN CALIFORNIA EDISON COMPANY
(U338-E) ON REPLACEMENT POWER COST CALCULATION METHOD**

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CALIFORNIA RULES

Rule of Practice and Procedure 13.112

CALIFORNIA PUBLIC UTILITIES COMMISSION DECISIONS

D. 10-07-0495

D. 11-10-0025

Summary of Recommendations

The Commission should issue a decision as follows:

- Adopting SCE's proposed definition of replacement power costs.
- Finding that arguments that SCE should have procured different resources in 2012 are outside the scope of this proceeding.
- Finding that TURN's arguments regarding potential disallowances are outside the scope of Phase 1A of this proceeding.
- Adopting SCE's proposed methodology for calculating its 2012 replacement power costs; foregone energy sales revenue; and capacity and other market-related costs.

Pursuant to California Public Utilities Commission (“Commission”) Rule of Practice and Procedure 13.11 and the “Overall Schedule” set forth in Attachment 3 of the July 1, 2013, Administrative Law Judge (“ALJ”) Ruling on Miscellaneous Scheduling and Procedural Issues, Southern California Edison (“SCE”) respectfully submits this opening brief regarding Phase 1A of this proceeding (the “OII”).

I. INTRODUCTION AND SUMMARY OF ARGUMENT

On November 1, 2012, the Commission issued an Order Instituting Investigation into the extended outages at San Onofre Nuclear Generating Station (“SONGS”). In a Scoping Memo dated January 28, 2013, the Commission divided the OII into separate phases. According to the Scoping Memo, the first phase of the OII would include a reasonableness review of SCE’s SONGS-related expenses in 2012.¹ Although the Commission initially planned to address “the question of what replacement power was purchased by the utilities in 2012 as a consequence of the SONGS outages” as part of Phase 1, ALJ Dudney issued an email ruling shortly before the Phase 1 evidentiary hearings finding that the Phase 1 schedule did not permit adequate review of replacement power costs.² ALJ Dudney therefore created a sub-phase of the OII (“Phase 1A”) in which the Commission would consider “the method for determining what 2012 costs are replacement power due to the SONGS outage.”³

ALJs Dudney and Darling have further defined the scope of Phase 1A as follows: “Phase 1A of this OII will address the method for calculating the cost of replacement power during 2012 due to the SONGS outage. This scope includes developing a formula/method for the calculation of costs (capacity, energy, foregone sales, and congestion) and establishing what

¹Scoping Memo, p. 3.

²May 6, 2013, Email Ruling of ALJ Dudney Re: SONGS Replacement Power.

³*Id.*

values should be entered in to that formula.”⁴ Evidentiary hearings on Phase 1A were held on August 5-6, 2013.

Various parties submitted written evidence in Phase 1A advocating for the Commission to expand its traditional definition of “replacement power costs” to include all costs that could conceivably have been incurred as a result of the SONGS outages, or, in some cases, in any way tangentially related to the outages. For the reasons set forth below, the Commission should decline the invitation to give “replacement power costs” an unprecedented, broader meaning.

To the extent that the Commission’s task in Phase 1A is to quantify certain costs, the Commission should adopt SCE’s estimate of these costs. SCE’s methodology for these calculations is described below. In sum, SCE’s total replacement power costs⁵ in 2012 were \$259,222,843⁶; its total net foregone energy sales revenues in 2012 were \$131,347,158⁷; its total capacity-related charges in 2012 were \$33,141,178⁸; and its total non-capacity-related market costs in 2012 were \$15,597,536.⁹ For reasons explained below, the Commission should exclude \$48,212,084 from its calculation of replacement power costs¹⁰ and \$17,613,922 from its calculation of net foregone energy revenues¹¹ based on the time period for which Units 2 and 3

⁴Phase 1A: 2012 Replacement Power – Hearing Room Ground Rules For Evidentiary Hearing, p. 1.

⁵SCE’s testimony typically referred to “replacement power costs” as “replacement energy costs.”

⁶SCE-37, p. 7, line 20.

⁷*Id.* p. 9, line 5.

⁸SCE-38, p. 9, Table XVII-3.

⁹SCE-37, p. 11, Table I-5.

¹⁰*See id.* p. 10, Table I-4.

¹¹*See id.*

would have been on scheduled outages but for the outages at issue here. Exhibit A, attached hereto, summarizes SCE's calculations for the convenience of the Commission and the parties.

II. THE COMMISSION SHOULD NOT EXPAND ITS TRADITIONAL DEFINITION OF "REPLACEMENT POWER"

The Utility Reform Network ("TURN") urges the Commission to adopt a new definition of "replacement power costs" in this proceeding, without precedent. This definition would include "all the 'economic harm' or 'net rate impacts' the SONGS outages could have on each utility's customers," plus all of the "non-quantifiable costs" associated with the outages.¹² This recommendation is not limited to the costs that SCE incurred as a result of the outages; it theoretically could encompass any cost associated with procurement or grid reliability, incurred by *anyone*, that is traceable to the outage.¹³ This position is extreme, impractical, and unprecedented.

The Commission has not previously included all potential consequential costs of an outage under the umbrella of "replacement power costs." When the Commission developed the paradigm of disallowing replacement power costs as a remedy for imprudence associated with utility-owned generation, SCE owned or controlled sufficient generation resources to meet all or substantially all of its customer demand even in the event of an outage.¹⁴ In the context of that market structure, the replacement power costs that SCE would incur as a result of an outage resulted from the need to rely on less economic resources within SCE's generation portfolio.¹⁵ The costs associated with relying on a less economic resource would be the incremental fuel

¹²TURN-04, p. 1, line 24 – p. 2, line 2 & pp. 19-20.

¹³TURN, Woodruff, Tr. 1554, lines 5-12.

¹⁴See SCE-37, p.2 n.7.

¹⁵See *id.*

costs of utilizing the utility's less efficient generation resource(s).¹⁶ Since California's electric industry was restructured in 1998-which resulted in the utilities' divestiture of significant portions of their generation portfolio and consequent need to rely on the energy markets for procuring any replacement power-the Commission has only twice disallowed SCE's replacement power costs in connection with an outage.¹⁷ In both of these instances, the Commission's calculation was limited strictly to an estimation of "the marginal prices actually paid by utility for replacement energy" in the market.¹⁸ At the evidentiary hearings, TURN's witness, Kevin Woodruff, was unable to identify any instance in which the Commission has previously imposed a disallowance, in connection with an outage, of the types of consequential market-related costs that he identifies in his testimony.¹⁹ TURN's proposed revision to the definition of "replacement power costs" would thus undo established policy and decades of Commission precedent, and would potentially expose SCE's investors to wide-ranging and undefined risks. This proposal is inconsistent with the plain meaning of the words "replacement power costs" and is inappropriate.

Furthermore, TURN's proposal is impractical, as it would require the use of a complex model of costs and benefits that is not in the record. Woodruff acknowledged at the evidentiary hearings that any "consequential benefits" of the SONGS outages would need to be an offset to the Commission's calculation of "consequential costs" under TURN's proposal.²⁰

¹⁶*See id.* pp. 2-3.

¹⁷*See* D. 10-07-049, 2010 WL 3064965 (July 29, 2010); D. 11-10-002, 2011 WL 5010518 (Oct. 6, 2011). Neither of these disallowances dealt with replacement power costs anywhere near the magnitude of those costs identified in this proceeding. SCE reserves the right to argue, in Phase 3, that SCE should not be exposed to market-based "replacement power" disallowances following outages of utility-owned generation because, among other reasons, SCE's investors are not compensated for such risks by the utility's current rate of return.

¹⁸D. 10-07-049, 2010 WL 3064965, at *14; *accord* D. 11-10-002, 2011 WL 5010518, at *8.

¹⁹*See* TURN, Woodruff, Tr. 1552, line 26 – Tr. 1553, line 11.

²⁰*Id.* Tr. 1565, lines 5-10.

Although Woodruff speculated that the consequential costs of the outage were greater than the consequential benefits, he also acknowledged that “the ideal solution” for implementing his proposal would be to create a comprehensive model of all conceivable consequential costs and benefits.²¹ No party in this proceeding advocates for the Commission or the utilities to create such a model, and none has been introduced into the record.

The Commission should reject TURN’s proposal. For the purposes of this OII, the definition of “replacement power costs” should be limited to the costs SCE incurred to replace lost SONGS generation for hours in which SCE had a net-short energy position in the California Independent System Operator’s (“CAISO”) Integrated Forward Market (“IFM”). This definition is consistent with the direction the Commission provided in its Order Instituting Investigation, which directed SCE to separately report its replacement energy costs, foregone energy sales, and other market-related SONGS costs.²² The Commission’s order demonstrates that the Commission views these cost categories as conceptually distinct. If TURN wishes to argue that costs outside the traditional definition of “replacement power costs” should be subject to disallowance in Phase 3, TURN may make those arguments at an appropriate time. But the Commission should not allow TURN to circumvent this Phase 3 consideration by adding unrelated costs into the calculation of replacement power costs.

Below, SCE addresses four specific categories of costs that TURN erroneously includes in the definition of “replacement power costs,” and that the Commission should exclude from its cost analysis.

²¹*Id.* Tr. 1564, line 19 – Tr.1565, line 2.

²²*See* I. 12-10-013, pp. 10-11, 23.

A. Congestion Revenue Rights Are Not Analogous To “Replacement Power”

When there is too much energy along a certain transmission path to a delivery point in the electricity grid, “congestion” occurs along that path.²³ The CAISO assesses charges to market participants who place energy into a congested pathway on the grid. Congestion Revenue Rights (“CRRs”) are financial instruments that market participants can use to hedge this risk of incurring congestion charges.²⁴ CRRs can be purchased at auction or can be “allocated” to a Load-Serving Entity (“LSE”), at no cost, by the CAISO.²⁵ SCE, as an LSE, acquires most of its CRRs through the CAISO’s allocation process.²⁶ CRRs are associated with particular pathways on the grid, and the owner of a CRR receives revenues when there is a congestion cost on that pathway and must pay when there is a congestion benefit on the pathway.²⁷ CRRs thus provide to SCE’s customers a valuable hedge against the cost of congestion.

Before the outages at issue in this OII occurred, SCE acquired CRRs on the SONGS transmission pathways in order to hedge the risk of potential congestion costs associated with energy deliveries from SONGS to the load center.²⁸ As explained in SCE’s written testimony, the outages caused a congestion benefit on the pathways connected with the SONGS node, which in turn caused SCE’s CRRs for those pathways to incur net charges for 2012.²⁹ The SONGS outages also caused additional congestion on other grid pathways in the L.A. Basin,

²³SCE, Cushnie, Tr. 1290, lines 25-28.

²⁴*Id.* Tr. 1291, lines 24-28; SCE-8, p. 17, lines 6-7.

²⁵*See* SCE, Cushnie, Tr. 1291, lines 3-7.

²⁶*See id.* Tr. 1292, lines 10-16.

²⁷*Id.* Tr. 1291, lines 12-16.

²⁸*See* SCE-37, p. 12, lines 15-17; SCE-8, p. 17, lines 7-9.

²⁹*See* SCE-37, p. 12, lines 18-19.

however, and SCE's CRRs on those pathways accordingly earned incremental revenue in 2012.³⁰ Revenues associated with SCE's CRR portfolio are not retained by shareholders, but instead flow through to customers.

In their written testimony, both TURN and the Division of Ratepayer Advocates ("DRA") urged the Commission to classify SCE's CRR costs on the SONGS paths as replacement power costs.³¹ This suggestion is problematic for several reasons. First, SCE acquired its CRRs on the SONGS transmission pathways prior to the SONGS outages. Thus, the notion that the costs associated with these CRRs are replacement power costs is illogical.³²

Second, this proposal ignores the revenue that the outages caused SCE to realize on other paths in the L.A. Basin through its CRR portfolio, and attempts to "cherry-pick" those particular CRRs that lost money as a result of the outages.³³ TURN and DRA both conceded this point in written testimony and at the evidentiary hearings, and took the position that the Commission would need to evaluate whether SCE's entire CRR portfolio realized net costs or revenues as a result of the SONGS outages, which would require the Commission "to model how SCE's entire portfolio of resources, including its various hedges, would have operated in CAISO markets in 2012," or "to direct the two utilities to run a power flow analysis and production cost model which would require additional time to complete due to the complexity involved and, despite that effort, could be prone to further contention and litigation."³⁴

³⁰See SCE, Cushnie, Tr. 1297, line 26 – Tr. 1298, line 2.

³¹TURN-04, p. 17, lines 15-17; DRA-02, p. 6, lines 6-15.

³²See SCE-37, p. 12, lines 15-17.

³³See SCE-37, p. 13, lines 2-4.

³⁴TURN-04, p. 17, lines 8-10; DRA-02, p. 6, lines 11-14.

Perhaps in light of the complex analysis that DRA conceded would be required to determine whether SCE incurred net CRR costs as a result of the outage, DRA's witness changed his recommendation regarding CRRs at the evidentiary hearing. On behalf of DRA, Yakov Lasko stated:

Upon further review of Edison's AB 57 bundled procurement plan and Edison's rebuttal testimony, DRA no longer recommends that [CRRs] be part of this proceeding, but rather be considered as part of reasonableness review in the ERRA compliance case where SCE and San Diego can provide the necessary information to establish the reasonableness of their CRR practices in 2012.³⁵

Lasko subsequently clarified his recommendation that, if the Commission finds in the ERRA proceeding that SCE reasonably managed its CRR portfolio, DRA would recommend no further review of the CRR costs.³⁶

TURN's witness, on the other hand, maintained his position that the costs associated with SONGS CRRs should be viewed in isolation and considered as replacement power costs. Although Woodruff concedes that any CRR revenues that SCE realized as a result of the outages should, in theory, be an offset to the CRR costs for the purposes of Woodruff's recommendation, he acknowledges that "the kind of modeling that would allow us to make that calculation" would be "extensive and controversial" and "would be a lot of work."³⁷ In light of the complexity of such an analysis, TURN is expressly "not advocating" for this analysis to be performed.³⁸ Yet TURN still recommends that the Commission cherry-pick the costs associated

³⁵DRA, Lasko, Tr. 1522, lines 1-10.

³⁶*Id.* Tr. 1525, lines 16-21.

³⁷TURN, Woodruff, Tr. 1562, lines 15-17 & Tr. 1572, lines 20-21; TURN-04, p. 17, line 11.

³⁸TURN, Woodruff, Tr. 1572, lines 17-21; *accord* TURN-04, p. 17, lines 7-11.

with SCE's SONGS CRRs and place them in the bucket of replacement power costs, because these costs are "a direct discrete harm from the SONGS outages that we can point to."³⁹

TURN's recommendation should be rejected. As TURN admits, the type of analysis that would allow the Commission to determine whether SCE actually incurred net costs as a result of the outage-related congestion at the SONGS nodes would be exceedingly complicated.⁴⁰ No party in this proceeding recommends that SCE perform this analysis. In the absence of this analysis, there is no basis for concluding that customers bore greater costs on CRRs as a result of the outages. TURN's suggestion that the Commission ignore the benefits of CRRs on other paths, and view SCE's SONGS CRR losses in isolation, is unprincipled.

Third, even if the Commission were to determine that SCE incurred net losses in its CRR portfolio as a result of the outage, it would be inappropriate to treat these costs as replacement power costs. CRRs provide valuable financial protection to customers, and SCE's shareholders receive no benefit from these hedges. If SCE's shareholders were exposed to the potential costs associated with CRRs, but were not permitted to realize any potential benefits of the portfolio, there would be a disincentive for SCE to acquire CRRs as hedges for its customers.⁴¹ If the Commission were to consider isolated CRR losses as replacement power costs, and subject SCE to the risk of disallowance for these losses, investors should be compensated for this risk by retaining any revenue in its CRR portfolio.⁴²

³⁹TURN, Woodruff, Tr. 1577, lines 22-27.

⁴⁰See SCE, Cushnie, Tr. 1300, line 16 – Tr. 1301, line 11.

⁴¹SCE-37, p. 13, lines 5-13.

⁴²*Id.*

B. Higher Prices Paid By Other Load-Serving Entities Should Not Be Attributed To SCE

TURN also suggests that the definition of “replacement power costs” should include costs incurred by other LSEs as a result of the SONGS outages.⁴³ These costs include both higher energy procurement costs and capacity charges.⁴⁴ TURN’s proposal to consider these costs in the Commission’s replacement power cost calculation should be rejected.

First, SCE is not attempting to charge its customers for the costs incurred by other LSEs. The Commission therefore cannot impose a “disallowance” in connection with these costs, as SCE is not seeking to recover them in rates, and any reduction in SCE’s revenue requirement in connection with these costs would therefore amount to a penalty. To the extent that the Commission is seeking to quantify replacement power costs in Phase 1A in order to consider SCE’s potential cost recovery in Phase 3, the costs incurred by other LSEs are irrelevant. Additionally, SCE is not compensated by other market participants for higher energy prices when those LSEs’ generation resources have outages, nor is SCE compensated by other market participants when energy prices have been lower as a result of SCE’s generation operating resources.⁴⁵ TURN’s recommendation that SCE should somehow have this obligation is strained and illogical, and should be rejected.

Furthermore, it would be impossible for SCE to calculate the extent to which other LSEs incurred costs as a result of the SONGS outages. The difficulty in calculating these costs is twofold: 1) SCE does not have the requisite information about other LSEs’ loads and

⁴³See TURN-14, p. 4.

⁴⁴See TURN-14, p. 4, lines 20-25.

⁴⁵See SCE-8, p. 14, lines 12-16.

resources, and would likely encounter substantial difficulty obtaining such information;⁴⁶ and 2) there is no way to isolate the extent to which higher market prices experienced by other LSEs were caused by the SONGS outages. As SCE witness Colin Cushnie explained at the evidentiary hearings, the SONGS outages contributed to higher gas-normalized prices in 2012, “but there were other factors that led to higher prices as well.”⁴⁷ Cushnie’s testimony is corroborated by an annual report published by the CAISO, which states that “[a] variety of factors contributed to the increase in gas-normalized total wholesale costs in 2012.”⁴⁸

C. Capacity-Related And Other Market Costs Associated With The SONGS Outages Should Not Be Considered “Replacement Power Costs”

DRA and TURN recommend that the Commission’s calculation of SCE’s 2012 replacement power costs include CAISO-allocated costs and all other market-related charges incurred in connection with the outages.⁴⁹ As explained above, SCE believes that the proper definition of “replacement power costs” should include only the costs SCE incurred to replace lost SONGS generation for hours in which SCE had a net-short energy position in the CAISO’s markets. As explained below, certain components of SCE’s CAISO-allocated costs and other market-related charges fall within this definition, but most do not. The market costs discussed in this section of the brief (which were reported in SCE’s Outage Memorandum Account pursuant to the Commission’s Order Instituting Investigation) can be divided into two general categories: capacity-related costs and non-capacity-related costs.

⁴⁶TURN-14, p. 4, line 25 – p. 6, line 1.

⁴⁷SCE, Cushnie, Tr. 1308, lines 26-27; *see also* SDG&E, Scates, Tr. 1444, line 25 – Tr. 1445, line 3.

⁴⁸TURN-07, p. 58.

⁴⁹DRA- 02, p. 4, lines 16-21; TURN-14, p. 9, lines 1-7.

SCE incurred three types of capacity-related charges as a result of the outages: Capacity Procurement Mechanism (“CPM”) charges, which were incurred as a result of both unit outages; Standard Capacity Product (“SCP”) penalty charges for the Unit 3 outage; and Resource Adequacy (“RA”) replacement capacity costs for the Unit 3 outage.⁵⁰ Unit 2 did not incur SCP or RA costs because the Unit 2 refueling outage, which was ongoing at the time of the discovery of the tube leak in Unit 3, was planned.⁵¹ As explained in SCE’s written testimony, “SCP penalty charge payments are disbursed to all RA resources that received an availability bonus payment.”⁵² To account for this, “SCE netted the SCP availability bonus payments it received that were funded by SCE’s SCP penalty charges for Unit 3.”⁵³ SCE’s calculations of these capacity-related charges are summarized in Table XVII-3 of SCE-38. As explained in that table, SCE’s total capacity-related charges for both units in 2012 was \$33,141,178.⁵⁴ No party has objected to SCE’s calculations of any of these capacity-related charges. None of these capacity-related charges should be considered replacement power costs, as none of them were incurred to replace the energy output of SONGS.⁵⁵

SCE also incurred four types of non-capacity-related market costs associated with the SONGS outages: “Real Time Imbalance Energy Charges for Day-Ahead Schedule Deviations”; “On-site Auxiliary Load Costs”; “Participating Intermittent Resource Program (‘PIRP’) Allocation Charges to SONGS”; and CRRs.⁵⁶ SCE’s calculations of these non-

⁵⁰SCE-38, p. 8, lines 2-10.

⁵¹*Id.* p. 9, lines 2-4.

⁵²*Id.* p. 8, lines 12-13.

⁵³*Id.* p. 8, line 13 – p. 9, line 1.

⁵⁴*Id.* p. 9, Table XVII-3.

⁵⁵*See* SCE-37, p. 17, line 24 – p. 18, line 1.

⁵⁶*Id.* p. 11, Table I-5.

capacity-related charges are summarized in Table I-5 of SCE-37. As explained in that table, SCE's total non-capacity-related charges for both units in 2012 was \$15,597,536.⁵⁷ No party has objected to SCE's calculations of any of these non-capacity-related charges.

SCE incurred on-site Auxiliary Load Costs and associated PIRP charges as a result of the need to replace on-site SONGS generation.⁵⁸ But SCE did not need this energy on-site in order to meet bundled customer demand; instead, the costs were incurred for SCE to maintain safe operations at the plant, such as cooling pump load.⁵⁹ These costs therefore do not meet the traditional definition of "replacement power costs." Because these costs were not incurred in order for SCE to serve customer load, SCE recommends that they be considered similar to the market costs incurred for grid reliability reasons.⁶⁰ Specifically, these costs were incurred to maintain safe operations at SONGS, and not to meet bundled customer energy requirements.

On the other hand, the Real-Time Imbalance charges for the Day-ahead schedule deviations for the January 31, 2012, to February 1, 2012, period for Unit 3 (associated with the first two days of Unit 3's forced outage) may properly be considered replacement power costs, since these costs were related to replacing energy that was intended to serve bundled customers.⁶¹

⁵⁷*Id.*

⁵⁸*Id.* p. 15, lines 1-2.

⁵⁹*Id.* p. 15, lines 3-4 & p. 11, lines 11-13.

⁶⁰In prior written testimony, SCE suggested that these costs could fairly be considered replacement power costs. SCE's position in this brief, and in SCE-37, reflects the company's evolved conceptualization of the proper metes and bounds of the definition of "replacement power."

⁶¹*See id.* p. 12, lines 2-4.

D. Demand Response Program Costs Are Not Analogous To Replacement Power Costs

TURN argues that costs recorded in SCE’s Demand Response subaccount should be considered under the “replacement power costs” umbrella because they “were only incurred because of the SONGS outages.”⁶² As discussed above, SCE does not believe that “consequential cost” is synonymous with “replacement power cost,” and therefore disagrees with the logic underpinning TURN’s suggestion. The purpose of the Demand Response programs at issue was not to serve bundled customer load,⁶³ it was to reduce demand for energy during peak hours in order to enhance local area grid reliability.⁶⁴ As Cushnie testified at the evidentiary hearings, “[t]he program is . . . exclusively designed as a grid reliability measure.”⁶⁵ The costs of efforts to improve grid reliability, even if the need for these efforts was precipitated by an outage, do not fall within a proper definition of “replacement power costs,” as they were not incurred to replace SONGS generation to meet bundled customer demand.

TURN’s argument that SCE’s demand response costs were “a substitute for SONGS capacity”⁶⁶ is also flawed. SCE procured replacement RA capacity and incurred capacity charges as a result of the SONGS outages, but no capacity rights were associated with SCE’s Demand Response programs.⁶⁷ In any event, as explained above, capacity-related costs are not replacement power costs.

⁶²TURN-04, p. 15, lines 18-22.

⁶³See SCE-8, p. 14, lines 19-25.

⁶⁴See *id.*

⁶⁵SCE, Cushnie, Tr. 1361, lines 9-10.

⁶⁶TURN-04, p. 15, line 27.

⁶⁷SCE-37, p. 17, lines 19-22.

III. THE COMMISSION SHOULD ADOPT SCE'S ESTIMATES OF 2012 REPLACEMENT POWER COSTS AND NET FOREGONE ENERGY REVENUES

SCE recommends that the Commission exclude foregone energy revenues from the definition of “replacement power costs.” However, to the extent that the Commission seeks to quantify certain categories of costs for further consideration in Phase 3, the Commission should adopt SCE’s proposed methodology for each category of costs. In the following sections of this brief, SCE explains its proposed methodologies; describes the areas of disagreement between the parties over various aspects of these methodologies; and justifies SCE’s continued belief that its proposal presents the most accurate, fair, and conceptually sound way of approximating the company’s SONGS-related replacement power costs and net foregone energy revenues in 2012.

A. SCE’s Proposed Methodology For Estimating Its SONGS-Related Replacement Power Costs In 2012

As explained in SCE’s written testimony, it is not possible for SCE to provide a precise accounting of the energy costs that SCE incurred in 2012 as a result of the SONGS outages. This is because SCE participates in the organized energy markets operated by the CAISO.⁶⁸ Instead of using the output of generation resources such as SONGS to directly serve its bundled customers, SCE bids or schedules all of its generation output into the CAISO’s energy markets.⁶⁹ Likewise, SCE serves its bundled customers by purchasing energy from the CAISO’s markets.⁷⁰ As a result, SCE cannot categorize any particular megawatt hour (“MWh”) of energy purchased from the CAISO’s market as “replacing” the output of SONGS.

⁶⁸SCE-02, p. 18, lines 6-7.

⁶⁹*Id.* p. 18, lines 7-9.

⁷⁰*Id.*

SCE can, however, make a reasonable estimate of the impact the SONGS outages had on SCE's "net open position" in California's wholesale energy market. The difference between SCE's aggregate energy sales into the CAISO's market and SCE's aggregate energy purchases from the market is considered SCE's "net open position."⁷¹ When SCE has scheduled more energy into the CAISO's market than it needs to purchase from the market to serve its bundled customers, SCE's net open position is considered "net long."⁷² Conversely, when the amount of energy that SCE needs to purchase from the CAISO's market to serve its bundled customers is greater than the amount of energy that SCE has scheduled into the market, SCE's net open position is considered "net short."⁷³ By estimating the portion of SCE's hourly net short position that can be attributed to the outages, SCE can calculate the amount of energy (expressed in MWhs) that the company purchased in 2012 that would not have been exposed to market pricing if SONGS were operating.⁷⁴ By multiplying this quantity of MWhs by a price index representative of the price SCE would have paid to procure energy in the CAISO's market during the hours that SCE was net short, SCE can estimate the company's total energy expenditures attributable to the outages.⁷⁵

For SCE to make a detailed determination regarding the portion of SCE's hourly net short position that can be attributed to the outages, SCE would need to make a number of assumptions about how the energy market would have performed in 2012 if the SONGS outages

⁷¹*Id.* p. 18, lines 13-14.

⁷²*Id.* p. 18, lines 16-17.

⁷³*Id.* p. 18, lines 14-15.

⁷⁴*See* SCE-38, p. 4, lines 9-14.

⁷⁵*See id.*

had not occurred.⁷⁶ Because some participants in the CAISO's markets undoubtedly would have bid or operated their resources differently if SONGS were operating in 2012, market results such as energy prices and congestion levels would have been different, which in turn would have impacted SCE's net open position.⁷⁷ A detailed net short position analysis would therefore require various assumptions regarding, for example, how the rest of SCE's generation portfolio would have performed and how other entities' bid behavior might have varied if SONGS were producing electricity in 2012.⁷⁸ Because these assumptions would necessarily be speculative, such a detailed determination is not warranted for the purpose of estimating SCE's 2012 replacement energy costs.⁷⁹ Instead, SCE's final assessed net open energy position prior to the commencement of its day-ahead spot market trading activity should be used as its "baseline" net open energy position.⁸⁰

For the purpose of calculating the portion of SCE's net short position attributable to the outages, SCE's baseline net open energy position must be adjusted to account for the historical forced outage rate at SONGS.⁸¹ Despite prudent management and plant operation, all power plants occasionally experience forced outages.⁸² To account for the fact that SONGS may have experienced forced outages in 2012 unrelated to the outages at issue in this OII, SCE's baseline net open energy position must be reduced by the average amount of time that SONGS

⁷⁶*See id.* p. 4, lines 1-3.

⁷⁷SCE-02, p. 19, lines 3-6.

⁷⁸*See* SCE-38, p. 4, lines 3-6.

⁷⁹*See id.* p. 4, lines 6-8.

⁸⁰*See id.* p. 4, lines 9-10.

⁸¹*See id.* p. 4, lines 16-17.

⁸²*See id.* p. 4, lines 17-18.

has spent offline due to forced outages in past years.⁸³ As explained in SCE's written testimony, SONGS has experienced an average forced outage rate of 2.15% across the last ten years.⁸⁴ It is therefore appropriate to reduce SCE's baseline net open energy position by 2.15% in order to determine the total quantity of MWhs that SCE purchased in 2012 which are associated with the SONGS outages at issue in this OII and which SCE purchased when it had a net short position.⁸⁵

Once SCE has determined the quantity of MWhs purchased in 2012 that are associated with the SONGS outages and that SCE purchased when it had a net short position, SCE can estimate the costs it incurred to procure this energy. This calculation requires a price index. Because SCE procures MWhs through an assortment of energy products, and within a variety of different timeframes, there is no single price benchmark that represents the price SCE paid per MWh of energy in 2012.⁸⁶ For example, as SCE's written testimony explained, SCE "conducts periodic solicitations for seasonal, annual and multi-year products. SCE also trades for annual, quarterly, monthly, intra-month, daily, and hourly products."⁸⁷ The price per MWh varies between different types of energy products.⁸⁸ SCE therefore proposes using a price index that will provide a reasonable proxy for the amount SCE paid for replacement energy. For the reasons explained in SCE's written testimony, and in Part IIIB of this brief, SCE recommends

⁸³See *id.* p. 4, lines 18-22.

⁸⁴See SCE-37, p. 6, lines 11-13. In his Reply Testimony on behalf of DRA, Lasko alerted SCE to a mathematical error in SCE-03 which caused SCE to use an erroneous forced outage rate of 2.8%. See DRA-02, pp. 11-12. SCE has corrected this error and has changed its calculations to include the correct forced outage rate of 2.15%.

⁸⁵See SCE-37, p. 6, lines 11-13.

⁸⁶See *id.* p. 16, lines 5-13.

⁸⁷*Id.* p. 16, lines 7-9.

⁸⁸See *id.* p. 16, lines 5-13.

using the SP-15 day-ahead index prices for the purpose of calculating SCE's replacement energy cost for SCE's net short hourly positions.

Based on the foregoing methodology, the following equation provides a reasonable estimate of SCE's SONGS-related replacement energy costs in 2012:

$$\mathbf{Q * P = Hourly Replacement Energy Cost}$$

Where:

Q = Portion of SCE's forecast hourly net short position which could be attributed to the SONGS outages, adjusted for the 2.15% historical forced outage rate for SONGS (expressed in MWh); and

P = Daily average SP-15 index price (expressed in \$/MWh).⁸⁹

Using this equation, SCE estimates that its total SONGS-related replacement energy costs in 2012 were \$259,222,843.⁹⁰ SCE's written testimony includes a table that breaks these costs down by month in 2012.⁹¹

To isolate SCE's replacement energy costs resulting from the outages at issue in this OII, SCE's estimate of its total SONGS-related replacement energy costs in 2012 must be reduced to remove the energy costs SCE would have incurred regardless of the outages. SONGS Unit 2 underwent a planned Refueling and Maintenance Outage ("RFO") that began on January

⁸⁹See *id.* p. 7, lines 10-16.

⁹⁰See *id.* p. 7, lines 18-20. Testimony that SCE submitted prior to SCE-37 provided a lower estimate of replacement power costs. In response to testimony submitted on behalf of DRA and TURN, however, SCE reduced its 10-year forced outage rate assumption from 2.8% to 2.15% to correct an error in its previous calculation and removed an offset for nuclear fuel that SCE had initially included based on its prior expectation that SONGS would resume service. See *id.* p. 7, lines 17-20. These adjustments caused SCE's final replacement power cost estimate to increase.

⁹¹See *id.* p. 8, Table I-2.

9, 2012, and was scheduled to end on March 5, 2012.⁹² Likewise, Unit 3 was scheduled for an RFO for the period of October 8, 2012, through December 2, 2012.⁹³ Because SCE would have procured energy in lieu of SONGS' output during these periods regardless of the outages that led to this OII, the costs SCE incurred for replacement energy during these time periods should be excluded from the Commission's Phase 1A calculation of replacement power costs.⁹⁴ As explained in SCE's written testimony, SCE estimates that the company incurred \$13,307,056 in replacement power costs during the Unit 2 RFO and \$34,905,029 in replacement power costs during Unit 3's scheduled RFO, for a total of \$48,212,084.⁹⁵ The Commission should therefore exclude \$48,212,084 from its calculation of SCE's 2012 replacement power costs for the purposes of Phase 1A.

B. SCE's Proposed Methodology For Calculating Its SONGS-Related Net Foregone Energy Revenue In 2012

SCE's proposed methodology for calculating its net foregone energy revenues in 2012 is identical to the replacement power cost methodology described above, with two important exceptions.

The first exception is that SCE isolated the portion of its net open position in which it was forecast to have been net *long* if SONGS had been operating, rather than the portion of its net open position in which it was net *short* in 2012.⁹⁶ This is because a calculation of foregone energy revenues requires SCE to determine the quantity of MWhs that SCE would have sold in 2012 if SONGS had been operating. A net long position indicates that the amount of

⁹²See *id.* p. 10, lines 5-7.

⁹³See *id.* p. 10, lines 7-10.

⁹⁴See *id.* p. 10, lines 5-10.

⁹⁵See *id.* p. 10, Table I-4.

⁹⁶See SCE-38, p. 6, lines 2-5.

energy that SCE has bid or scheduled into the market exceeds the amount of energy that SCE needs to serve its bundled customer load; SCE therefore earns net wholesale energy sale revenues when it is net long. Isolating the portion of SCE's net open position in which it was forecast to have been net long if SONGS were operating allows SCE to approximate the quantity of additional MWhs the company could have sold in the CAISO's markets in 2012 if SONGS had been operating. This total incremental quantity of MWhs can be multiplied by a price index to arrive at a dollar-amount of net energy revenues that SCE would have realized if SONGS had operated in 2012.

The second exception is that the Platts SP-15 day-ahead index prices must be adjusted downward by a price elasticity assumption.⁹⁷ If SONGS had been operating in 2012, the level of energy supply in the market would have been higher and market energy prices would have been lower as a result.⁹⁸ To calculate the revenues SCE would have realized in 2012 if SONGS were operating, SCE must adjust the actual Platts SP-15 day-ahead index prices that occurred in 2012 in order to approximate the energy prices that would have existed if SONGS were operating. No party in this proceeding has opposed this price elasticity adjustment.⁹⁹ At the evidentiary hearing, however, ALJ Dudney inquired as to why SCE applied the price elasticity adjustment in its calculation of foregone energy sales but not in its replacement power cost equation. As SCE witness Cushnie explained, the relevant energy price for purposes of a

⁹⁷*See id.* p. 6, lines 2-4.

⁹⁸*See id.* p. 6, lines 5-8; SCE, Cushnie, Tr. 1308, lines 23-26.

⁹⁹*See, e.g.,* TURN, Woodruff, Tr. 1574, lines 8-19 (Q: "Mr. Cushnie in his testimony describes a price elasticity adjustment. Do you conceptually agree with that[?]" A: "Yes." Q: ". . . Can you say if you quantitatively agree with it?" A: "I looked at Edison's workpapers. I can't disagree with it. I agree with it conceptually. I mean, the results seem reasonable."); SDG&E, Scates, Tr. 1495, lines 16-20 (Q: "[Y]ou stated you agree conceptually with Edison's proposal to use the elasticity adjustment in the foregone sales estimate; is that correct?" A: "That's correct.").

replacement power cost calculation is the price that actually occurred in the CAISO's markets in 2012.¹⁰⁰ In other words, the relevant price is that which SCE actually paid in 2012. On the other hand, the relevant price for the purposes of foregone energy sales is the market price that would have occurred if SONGS had been operating.¹⁰¹ "So we view this price elasticity function adjustment to estimate how much lower market prices would have been had SONGS been operating."¹⁰²

SCE is unable to calculate the exact extent to which market prices would have been lower if SONGS had operated, since market participants would have bid and operated their resources differently if the extended outages had not occurred.¹⁰³ However, SCE is able to estimate the outage's impact on prices by examining historical changes in market prices as a result of changes in loads and resources.¹⁰⁴ As SCE explained in its written testimony:

SCE's price elasticity analysis yielded an estimated change in average hourly market prices of between \$1.51/MWh and \$6.01/MWh on a calendar month basis for 2012, with an average hour price impact of approximately \$4.81/MWh for the February through December 2012 period when SONGS Units 2 and 3 were both unavailable.¹⁰⁵

In all other respects, SCE's methodology for calculating its SONGS-related net foregone energy revenues in 2012 is the same as its methodology for calculating replacement power costs. Based on this methodology, the following equation provides a reasonable estimate of SCE's SONGS-related net foregone energy revenues in 2012:

$$Q * (P-E) = \text{Hourly Foregone Net Energy Revenue}$$

¹⁰⁰SCE, Cushnie, Tr. 1416, lines 10-19.

¹⁰¹*Id.* Tr. 1416, lines 20-26.

¹⁰²*Id.* Tr. 1417, lines 1-4.

¹⁰³SCE-38, p. 6, lines 8-10.

¹⁰⁴*Id.* p. 6, lines 10-12.

¹⁰⁵*Id.* p. 6, line 12 – p. 7, line 2.

Where:

Q = Portion of SCE's forecast hourly net long position if SONGS had been available to operate, adjusted for the 2.15% historical forced outage rate for SONGS (expressed in MWh); and

P = Daily average SP-15 index price (expressed in \$/MWh); and

E = estimated price elasticity impact of SONGS not being available to operate (expressed in \$/MWh).¹⁰⁶

Using this equation, SCE estimates that its total SONGS-related foregone energy sales in 2012 were \$131,347,158.¹⁰⁷ SCE's written testimony includes a table that breaks these costs down by month in 2012.¹⁰⁸ As explained in SCE's written testimony, SCE estimates that the company incurred \$13,100,266 in foregone energy sales during the Unit 2 RFO and \$4,513,655 in foregone energy sales during Unit 3's scheduled RFO, for a total of \$17,613,922.¹⁰⁹ The Commission should therefore exclude \$17,613,922 from its calculation of SCE's 2012 foregone energy sales for the purposes of Phase 1A.

Although no party in the OII has set forth competing figures for SCE's 2012 replacement energy costs or foregone sales revenue, various parties have challenged aspects of SCE's methodology. The issues in dispute are as follows: 1) the proper price index for calculating the market price of energy during those hours in which SCE was net short; 2) the proper forced outage rate by which to reduce SCE's calculation of its hourly net open position;

¹⁰⁶See SCE-37, p. 8, line 4 – p. 9, line 2.

¹⁰⁷*Id.* p. 9, lines 4-5.

¹⁰⁸See *id.* p. 9, Table I-3.

¹⁰⁹See *id.* p. 10, Table I-4.

and 3) whether SCE's calculations have a "downward bias." These issues are addressed below.¹¹⁰

C. The Commission Should Adopt SCE's Recommendation To Use The Platts SP-15 Day-Ahead Price Index

Broadly speaking, there are two general types of energy prices in the CAISO's IFM: the price entities receive for providing energy to the market, and the price entities pay to receive energy from the market.¹¹¹ The market is comprised of hundreds of "generation nodes" at which energy enters the grid, as well as hundreds of "load nodes" at which energy is received from the grid for service to customers.¹¹² The load-weighted average of the prices at all load nodes is referred to as the "Default Load Aggregation Point," or "DLAP," and the generation-weighted average at the generation nodes is known as the "Existing Zone Generation Trade Hub Price," or "EZ Gen price."¹¹³ The DLAP price is different for each utility's service area.¹¹⁴ Likewise, the EZ Gen price is specific to geographical "zones," and SONGS is located in the SP-15 zone.¹¹⁵

¹¹⁰At the evidentiary hearings, A4NR also suggested that SCE and SDG&E should have presented the Commission with a unified methodology for calculating replacement power and other costs at issue in this phase. *See, e.g.*, SCE, Cushnie, Tr. 1342-43; SDG&E, Scates, Tr. 1439-40. DRA also holds this view. *See* DRA-02, p. 1, lines 13-14. As Cushnie explained, SCE and SDG&E had "several discussions as to whether or not it made sense to see if we could coalesce around a common methodology. And in some cases, we were able to reach agreement. And in other cases, we have different methodologies." SCE, Cushnie, Tr. 1342, line 28 – Tr. 1343, line 5; *accord* SDG&E, Scates, Tr. 1437, line 26 – Tr. 1438, line 3. SCE believes the methodologies it employed are reasonable.

¹¹¹*See* SCE, Cushnie, Tr. 1417, lines 17-21.

¹¹²*See id.* Tr. 1417, lines 22-24.

¹¹³*See* SCE-02, p. 20, lines 14-16; SCE-37, p. 16, lines 19-22.

¹¹⁴SCE, Cushnie, Tr. 1319, lines 19-20.

¹¹⁵*Id.* Tr. 1320, lines 2-6.

When energy is transmitted from generation to load, line losses and congestion occur.¹¹⁶ This causes the energy supply to be smaller at load nodes than at generation nodes, which results in higher prices at the load nodes.¹¹⁷ The DLAP price, therefore, tends to be higher than the EZ Gen price.¹¹⁸ For the purpose of calculating SCE's replacement power costs and foregone energy sales in 2012, neither the DLAP nor the EZ Gen price would be appropriate standing alone, as the DLAP would generally overestimate SCE's foregone energy sales¹¹⁹ and the EZ Gen price would likewise underestimate SCE's replacement power costs. Theoretically, SCE could use a generation-based price index to calculate its foregone energy sales and a load-based price index to calculate its replacement power costs. If this methodology were adopted, the DLAP in SCE's service area would be an acceptable price index to use for calculating SCE's replacement power costs, as this price index is geographically specific to SCE's customers who received the replacement energy in 2012.¹²⁰ However, there is no available generation-based price index that would be appropriate for calculating SCE's foregone energy sales. This is because the EZ Gen prices in the SP-15 zone in 2012 reflected a market in which SONGS was not generating energy. Because an accurate calculation of foregone energy sales requires knowledge of the revenues that SCE would have collected if SONGS were operating, the generation prices at the SONGS node in 2012—when SONGS was offline for most of the year—cannot be used.¹²¹

¹¹⁶*See id.* Tr. 1418, lines 2-6.

¹¹⁷*See id.*

¹¹⁸*See id.*

¹¹⁹SCE-8, p. 20, lines 12-14.

¹²⁰SCE-02, p. 20, lines 14-16; SCE, Cushnie, Tr. 1319, lines 7-9.

¹²¹*See* SCE-38, p. 3, lines 20-23; *accord* SCE-02, p. 20, lines 16-20 (“[EZ Gen hub] hourly prices at the SONGS generation nodes are not as useful as a price benchmark because SONGS is

SCE therefore proposes using the Platts SP-15 day-ahead index price to calculate both replacement power costs and foregone energy sales.¹²² As explained in SCE’s written testimony, this price index is not “purely load-based” or “purely generation-based,” and therefore provides “a reasonable balance between the load-based DLAP purchase price benchmark and the generation-based sales price benchmark of SP-15 EZ Gen Trade Hub or individual generation price nodes.”¹²³ As Cushnie explained at the evidentiary hearings, the Platts SP-15 day-ahead index price “is a bilaterally negotiated price between buyers and sellers” that market participants report a few hours in advance of the operation of the CAISO’s day-ahead energy market.¹²⁴ For this reason, the SP-15 day-ahead index price is commonly used to settle financial transactions for energy transacted for delivery in Southern California.¹²⁵ Moreover, SCE regularly transacts in the CAISO’s day-ahead energy market to reduce its net open position prior to the operation of the daily market.¹²⁶ Because this price reflects the market price at which buyers and sellers are both willing to transact, Cushnie testified that the Platts SP-15 day-ahead index price “should land somewhere in between the DLAP and the EZ Gen hub price” and allows SCE to “use a single price reference point” for calculating both replacement power costs and foregone energy sales.¹²⁷

not delivering energy at those nodes when the units are not operating, and the published prices are therefore not reflective of what would have happened had SONGS been on-line.”).

¹²²SCE-37, p. 16, lines 19-22.

¹²³*Id.* p. 16, line 19 – p. 17, line 5.

¹²⁴SCE, Cushnie, Tr. 1320, lines 18-21.

¹²⁵SCE-38, p. 3, lines 11-12; SCE-37, p. 17, lines 1-2.

¹²⁶SCE-37, p. 16, line 24 – p. 17, line 1.

¹²⁷SCE, Cushnie, Tr. 1418, lines 15-19.

In his written testimony on behalf of TURN, Woodruff appeared to take the position that SCE should use the DLAP to calculate both its replacement power costs and foregone energy sales.¹²⁸ Woodruff’s rationale for recommending the DLAP is that SCE has stated that it would be an appropriate price for measuring replacement power costs.¹²⁹ Woodruff has repeatedly acknowledged, however, that an unadjusted DLAP price would not be appropriate for calculating foregone energy sales.¹³⁰ Because the relevant price for the purpose of a foregone energy sales calculation would be a generation-based price, and because there is no price index that provides theoretical generation-based prices for a “with-SONGS” scenario, Woodruff suggests that SCE “adjust[]” the DLAP “to a hypothetical ‘with SONGS’ basis for computing foregone energy sales.”¹³¹ In other words, Woodruff suggests that the DLAP can be used to calculate foregone energy sales provided SCE applies a price elasticity adjustment.¹³²

Woodruff’s suggested adjustment is inadequate, as it only solves one of two problems with using the DLAP to calculate foregone energy sales. A price elasticity adjustment would account for the fact that energy prices would have been lower in 2012 if SONGS had operated; SCE agrees that such an adjustment must be made when calculating foregone energy sales. But a price elasticity adjustment does not solve the second problem with using the DLAP to calculate foregone energy sales, which is that the DLAP is a load-based average price and therefore is not reflective of the prices at which SCE could have sold energy into the market,

¹²⁸TURN-04, p. 20, line 24 – p. 21, line 2 & n.33.

¹²⁹TURN-14, p. 14, lines 8-13.

¹³⁰*Id.* p. 14, lines 18-22; TURN-4, p. 21 n. 33; *see* TURN, Woodruff, Tr. 1581, lines 6-8 (“I think if you want to value generation, then generally you would use like an EZ Gen hub price or generation price.”).

¹³¹TURN-4, p. 21 n. 33.

¹³²TURN, Woodruff, Tr. 1581, lines 3-4 (“The adjustment I was suggesting was for price elasticity.”).

regardless of whether SONGS was operating. Furthermore, because line losses and congestion tend to cause the DLAP to be higher, on average, than generation-based price indices, using the DLAP to calculate SCE's foregone energy revenues would artificially inflate the estimate of SCE's foregone energy revenues. This would be arbitrary and punitive.

TURN has suggested no methodology by which the DLAP could be adjusted to account for this difference between generation- and load-based prices. As Cushnie explained at the hearings, it is theoretically possible that SCE could use the DLAP for its foregone energy sales calculation if SCE adjusted the DLAP for both: 1) a price elasticity function; and 2) to account for the historical difference between the DLAP and SONGS generation node prices while the units were operating.¹³³ However, there is no evidence that such a calculation would be more accurate than simply using the Platts SP-15 day-ahead index prices, which are “representative of the short-term markets in which SCE transacts to both serve load and sell generation.”¹³⁴ SCE submits that injecting multiple layers of assumptions and adjustments into its calculations would not tend to improve the accuracy of those calculations. In any event, SCE has not performed the analysis with DLAP as a baseline index price. Requiring SCE to perform this work, with no reasonable expectation that the calculation will be any more accurate than the numbers at which SCE has arrived using the Platts SP-15 day-ahead index prices, would be unjustified.

¹³³SCE, Cushnie, Tr. 1323, lines 19-24.

¹³⁴SCE-37, p. 16, lines 12-13.

D. The Commission Should Reject TURN’s Assertion That SCE’s Calculations Have A Downward Bias

In his written testimony on behalf of TURN, Woodruff argued that SCE’s calculations have a “downward bias.”¹³⁵ Woodruff identified three sources of this alleged bias: 1) SCE’s use of a single price index “implicitly assumes” that load and generation prices “are the same”; 2) “SCE’s use of its actual ‘without SONGS’ day-ahead positions as an input for estimating its hypothetical ‘with SONGS’ day-ahead positions likely overestimated these ‘with SONGS’ positions and thus underestimated its replacement power costs”; and 3) certain “non-quantifiable costs” of the outages were likely incurred in addition to the replacement power costs that SCE has estimated in this OIL.¹³⁶ None of these alleged downward biases exist in SCE’s methodology.

First, SCE’s proposed price index does not assume that load and generation prices are the same. To the contrary, one of the primary reasons that SCE chose the Platts SP-15 day-ahead index price is that it represents a reasonable compromise between load-based prices and generation-based prices, which are different. Moreover, because SCE regularly transacts in the market that underlies the Platts SP-15 day-ahead index, this index is an appropriate and unbiased indicator of the price SCE paid to procure replacement energy and sell load in 2012.¹³⁷

Second, as SCE explained in its written testimony, using SCE’s actual day-ahead net open positions is reasonable in light of the myriad factors that would impact a speculative forecast of SCE’s net open position in a “with-SONGS” scenario.¹³⁸ TURN expressly agrees

¹³⁵TURN-04, pp. 18, line 18 – p.19, line 24.

¹³⁶*Id.*

¹³⁷*See* SCE-37, p. 18, line 12 – p. 19, line 22.

¹³⁸*See id.* p. 19, lines 6-7.

that using SCE's actual energy position in 2012 was reasonable,¹³⁹ but nevertheless maintains that the methodology creates a downward bias because, according to Woodruff, SCE's "with-SONGS" energy positions in 2012 would have been shorter than the energy positions that the company experienced while the units were offline in 2012.¹⁴⁰ This assertion is based on Woodruff's assumption that "without SONGS, additional SCE-controlled generation was likely dispatched due to increases in market prices."¹⁴¹ Woodruff's assumption is based on two layers of speculation: that additional SCE generation was dispatched in response to the outages, and that SCE actually generated more total energy in 2012 than it would have generated if SONGS were operating. There is no evidence in the record to support either of these assumptions.

Furthermore, multiple factors besides SCE's use of its generation resources affect the company's net open position, such as "changes to SCE's procurement prior to day-ahead trading, changes in market prices, . . . changes in CAISO market constraints, and changes in market participant bidding behavior."¹⁴² Any assumption regarding whether SCE's use of its actual net-open position creates a "downward bias" would need to account for all of these factors. This is not possible.

Finally, the Commission should reject TURN's suggestion that "non-quantifiable costs" of the outages create an additional source of "downward bias" in SCE's calculations.¹⁴³ There is no evidence to support TURN's assumption that such "non-quantifiable costs" of the outages outweigh the non-quantifiable benefits SCE realized in 2012 as a result of the outages.

¹³⁹TURN-04, p. 19, lines 20-22.

¹⁴⁰TURN-14, p. 15 n.15.

¹⁴¹*Id.*

¹⁴²SCE-37, p. 19, lines 9-11.

¹⁴³TURN-04, p. 18, line 18 – p. 19, line 24.

Moreover, as SCE explained in its written testimony, “[i]ncreasing the complexity of the calculation methodology and the number of assumptions as to how the market would have responded in the absence of the SONGS outages will not necessarily improve the ‘accuracy’ of SCE’s estimates.”¹⁴⁴ Speculation about the potential impacts of non-quantifiable costs is thus uninformative and cannot reasonably justify an adjustment to the Commission’s determination of SCE’s 2012 costs. Woodruff stated in his written testimony that, because “non-quantifiable costs” are by definition impossible to measure, “the best the Commission can likely do is keep in mind the existence of such costs when making specific findings about replacement power costs.”¹⁴⁵ The apparent purpose of Woodruff’s testimony is to suggest that the Commission should apply an arbitrary upward-bias in its determination of SCE’s 2012 replacement power costs, in order to cancel out SCE’s supposed “downward-bias.” The Commission should decline this invitation, as it is devoid of factual support and requires subjective determinations.

E. The Commission Should Adopt SCE’s Methodology For Adjusting Its Replacement Power Costs And Foregone Energy Sales To Account For Planned And Unplanned Outages At SONGS

In their written testimony, TURN and DRA explicitly endorse the principle that the Commission’s calculation of SCE’s replacement power costs and foregone energy sales in 2012 should exclude those time periods when the SONGS units would have been unavailable regardless of the outages at issue in this OII.¹⁴⁶ As explained above, SCE would have incurred

¹⁴⁴SCE-8, p. 21, lines 3-5.

¹⁴⁵TURN-04, p. 20, lines 18-20.

¹⁴⁶See DRA-02, p. 10, lines 8-9; TURN-13, p. 2, line 28 – p. 3, line 2 (“SCE and TURN agree that [replacement power costs and foregone sales revenue] should not include power supply costs incurred or sales revenues lost during periods during when the SONGS units would have otherwise been on outage.”).

market energy costs and foregone energy sales during all planned RFOs and unplanned outages in 2012 even if the outages at issue in this OII had not occurred.

No party disputes SCE's methodology or results regarding the amount of replacement power costs and foregone energy sales that should be excluded from the Commission's analysis as a result of planned RFOs in 2012. For Unit 2, replacement power costs and foregone energy sales should not be considered during the RFO period of January 9, 2012 – March 5, 2012.¹⁴⁷ For Unit 3, such costs and foregone sales should not be considered for the period of October 8, 2012 – December 2, 2012, when the unit was scheduled for an RFO.¹⁴⁸ The total amount that the Commission should exclude from its analysis, based on these RFOs, is \$65,826,006.¹⁴⁹

DRA, however, disagrees with SCE's methodology for determining the amount of replacement power costs and foregone energy sales that should be excluded based on unplanned outages. DRA's proposed methodology differs from SCE's in two respects: 1) DRA believes that SCE should have used a 5-year period, rather than a 10-year period, when calculating the historical forced outage rate at SONGS;¹⁵⁰ and 2) if the 10-year period is used, DRA believes that the two longest outages during this time period should be omitted from the Commission's analysis.¹⁵¹

The Commission should reject DRA's suggestion to use a 5-year period for calculating the forced outage rate at SONGS. As Cushnie explained at the hearings, for a piece

¹⁴⁷SCE-38, p. 12, lines 5-6.

¹⁴⁸*Id.* p. 12, lines 7-9.

¹⁴⁹SCE-37, p. 10, Table I-4.

¹⁵⁰DRA-02, p. 14, lines 4-6.

¹⁵¹*Id.* pp. 12-13.

of equipment that has operated as long as SONGS has, a longer historical period tends to yield a more meaningful forced outage rate:

The nuclear power plant has been in operation for an extended period of time. And like any large piece of equipment, you'll have periods of time with the power plant when it has a very high availability factor. It runs very well. And you will have other periods of time where incidents occur to prevent the power plant from operating for a period of time. So we felt that ten years was a reasonable period of time that would capture both the periods of time where the power plant was run very well and other periods of time where the power plant had extended outages.¹⁵²

Because SCE's proposed time period is twice as long as DRA's, SCE's methodology captures more data and provides a more comprehensive picture of SONGS' operational history.

Furthermore, SONGS' 10-year forced outage rate of 2.15% is comparable to the U.S. industry-wide rate over the most recent five- and ten-year historical periods, which the NRC reports to be approximately 2%.¹⁵³

DRA argues that a shorter period should be used because it would put more emphasis on the forced outage rate SONGS experienced after the steam generators were replaced.¹⁵⁴ DRA's rationale is that the steam generator replacement was "a major operational change at SONGS," and that the Commission should therefore choose an historical time period that will place special weight on this operational change.¹⁵⁵ SCE does not believe it would be appropriate to take deliberate steps to emphasize particular events in SONGS' operational history when choosing a time period across which to measure the historical outage rate. There is no evidence to support the idea that the forced outage rate in the year following installation of new equipment would be predictive of the forced outage rate going forward, as that equipment begins

¹⁵²SCE, Cushnie, Tr. 1287, line 21 – Tr. 1288, line 7.

¹⁵³SCE-37, p. 7, lines 6-9.

¹⁵⁴See DRA-02, p. 15, lines 6-18.

¹⁵⁵*Id.* p. 15, line 12.

a natural process of degradation. Meddling with the sample size to achieve an historical forced outage rate that is skewed toward the rate SONGS experienced in the first cycle of operation after the steam generators were replaced would produce a biased result. This element of bias is exacerbated by the fact that a 5-year time period would produce a smaller sample size than a 10-year period, which DRA concedes will place more emphasis on fewer events.¹⁵⁶

As Cushnie testified at the evidentiary hearings, SCE did not select a 10-year period in order to arrive at a certain outcome or emphasize specific events.¹⁵⁷ In fact, Cushnie testified that he did not know what the 10-year average would be when he chose this length of time; he simply chose the 10-year period because it was long enough to capture a wide variety of data and produce a meaningful average.¹⁵⁸ The lack of selection bias in Cushnie's decision to use a 10-year period is evident from the fact that 15-year and 20-year time periods would have yielded a significantly greater forced outage rate.¹⁵⁹

The Commission should also reject DRA's suggestion to omit the two longest outages from SCE's 10-year outage rate calculation. According to DRA's witness, Lasko, these two outages should be removed from consideration because they "were large compared to the others," and "statistically when something is outside of [a] certain bandwidth, we call it an outlier."¹⁶⁰ However, DRA has not explained what defines an "outlier," or when such an outlier would be considered statistically significant for such a calculation. Lasko's determination that these two outages are "outliers" appears to have been a gut reaction based on the fact that the

¹⁵⁶DRA, Lasko, Tr. 1532, line 26 – Tr. 1533, line 7.

¹⁵⁷SCE, Cushnie, Tr. 1288, line 28 – Tr. 1289, line 2.

¹⁵⁸*See id.* Tr. 1289, lines 17-20 & Tr. 1288, lines 2-7.

¹⁵⁹*See id.* Tr. 1427, line 25 – Tr. 1428, line 1.

¹⁶⁰DRA, Lasko, Tr. 1530, lines 16-18.

outages were longer than the others, and that removing them from the forced outage rate calculation would yield a lower value.

DRA's recommendation to remove these so-called "outliers" is not principled. As Lasko conceded during the evidentiary hearing, "[t]here's no normal length of an outage," and unplanned outages can happen for a wide variety of reasons.¹⁶¹ It is therefore to be expected that the length of unplanned outages can vary widely, and that an accurate picture of history may include some outages that are significantly longer than the average length of an unplanned outage. But removing these longer outages would create an artificially low forced outage rate compared to the rate at which SONGS was actually able to operate for the 10 years prior to the outages at issue here.¹⁶² As Cushnie explained at the evidentiary hearings, these two longest outages should be included in SCE's calculation of the historic forced outage rate "[b]ecause they happened and they represent the actual availability of the power plant over the ten-year period."¹⁶³

IV. NUCLEAR FUEL

When SCE recorded its estimated 2012 replacement power costs and net foregone energy revenues in the SONGS Outage Memorandum Account, and when SCE first presented testimony to the Commission regarding its calculations of those costs, the company expected that SONGS would return to service. In these initial calculations, SCE therefore adjusted its costs to account for the avoided costs of nuclear fuel, under the assumption that the fuel that SCE had purchased for consumption in 2012 would be used at SONGS in later years. As DRA noted in

¹⁶¹*Id.* Tr. 1531, lines 3-4.

¹⁶²*See* SCE-37, p. 6, lines 18-20 ("Arbitrarily removing the two longest-duration outages from the 10-year historical outage period as DRA proposes will result in a higher-than-realized historical availability factor.").

¹⁶³SCE, Cushnie, Tr. 1290, lines 7-9.

its Reply testimony, however, this adjustment for nuclear fuel is no longer appropriate, as the nuclear fuel that SCE purchased for 2012 cannot be used at SONGS in later years, and the costs therefore were not avoided by SCE.¹⁶⁴ In SCE-37, SCE agreed with DRA’s position and recalculated its replacement power costs and net foregone energy revenues without the adjustment for nuclear fuel. The replacement power costs and net foregone energy sales discussed in this brief reflect the corrected formulas described in SCE-37.

V. **TURN’S RECOMMENDATIONS REGARDING DISALLOWANCES SHOULD BE DEFERRED TO PHASE 3**

In his written testimony on behalf of TURN, Woodruff made various recommendations to the Commission regarding SCE’s ability to recover certain costs from its ratepayers. For example, he recommended that:

utility recovery of replacement power costs should be disallowed for any periods in which the Commission allows the utilities to keep SONGS capital in ratebase and recover operating costs, but should be allowed for any periods in which SONGS capital is out of ratebase and operating costs are not recovered.¹⁶⁵

Likewise, he recommended that SCE’s customers “should not be responsible for the possible failure of the utilities’ claims for reimbursement of replacement power costs from Nuclear Electric Insurance Limited.”¹⁶⁶

As the ALJs in this proceeding have made clear, “[t]he scope of Phase 1A does not include . . . argument about who should bear the costs of replacement power (this will be decided in Phase 3).”¹⁶⁷ At the Phase 1A evidentiary hearing, SCE was prevented from cross-examining Woodruff regarding his disallowance recommendations. When SCE asked for

¹⁶⁴DRA-02, p. 8, lines 14-19.

¹⁶⁵TURN-04, p. 2, lines 7-11.

¹⁶⁶*Id.* p. 2, lines 12-14; *see id.* p. 6, line 9 – p. 7, line 9.

¹⁶⁷Phase 1A: 2012 Replacement Power – Hearing Room Ground Rules For Evidentiary Hearing, p. 1.

clarification regarding whether Woodruff's recommendations were within the scope of Phase 1A, the following exchange ensued:

ALJ DUDNEY: I think we can for now leave the subject of why the Commission would adopt the recommendation aside and just move forward with the understanding that if the condition that the witness recommends becomes true, then his recommendation would follow from that. And I think we can leave until a later phase of this decision for the Commission to adopt that recommendation or not.

MR. WEISSMANN: Okay.

ALJ DUDNEY: Do we need to go down this line?

MR. WEISSMANN: No. I was a little confused as to the scope of Phase 1A. This testimony, you know, is being introduced in 1A. So. But with your Honor's clarification that 1A will not decide any question of recovery of these costs, I can defer this line of questioning to a later phase where it might be more appropriate.

ALJ DUDNEY: Okay. Sure. . . . [L]et's just move on, but yes, with the understanding that the goal of Phase 1 is to come up with a method for quantifying these costs and the determination of recovery will be made later.

MR. WEISSMANN: Okay.¹⁶⁸

In light of ALJ Dudney's ruling that any determination of cost recovery is outside the scope of Phase 1A, SCE reserves its right to challenge Woodruff's disallowance recommendations at a later phase in this proceeding. In particular, SCE reserves the right to challenge Woodruff's suggestion that the Commission disallow any costs in the absence of an imprudence finding against SCE.

VI. ARGUMENTS REGARDING WHICH PROCUREMENT OPTIONS SCE SHOULD HAVE PURSUED IN 2012 ARE OUTSIDE THE SCOPE OF THIS OII

Women's Energy Matters ("WEM") submitted written testimony in Phase 1A that sets forth its position that SCE should have made different procurement choices in 2012.

Namely, WEM believes that SCE's replacement power costs in 2012 could have been lower if

¹⁶⁸TURN, Woodruff, Tr. 1546, line 25 – Tr. 1547, line 24.

SCE had put more emphasis on preferred resources such as solar, wind, demand response techniques, and energy efficiency programs.¹⁶⁹ The ALJs in this proceeding have made clear on several occasions, however, that these arguments are outside the scope of this proceeding. In his opening remarks at the beginning of the Phase 1A evidentiary hearings, for example, ALJ Dudney stated that “[t]he scope of Phase 1A does not extend to discussion of . . . which procurement options should have been pursued. Instead the focus is on quantifying the costs that were incurred.”¹⁷⁰ The thrust of WEM’s testimony regarding Energy Efficiency programs, greenhouse gas emissions, Demand Response programs, Combined Heat and Power, and renewable resources is that SCE should have made different procurement choices in 2012. This testimony is outside the scope of this OII, and the Commission should accordingly reject WEM’s proposals.

Likewise, WEM’s arguments that SCE failed to prevent “gaming of the market” by JP Morgan and that SCE may have been involved in procurement “irregularities” with respect to Huntington Beach Power Plant¹⁷¹ bear no reasonable relationship to the scope of Phase 1A and should not be adopted.

VII. CONCLUSION

The Commission should find that the definition of “replacement power costs” should be limited to the costs SCE incurred to replace lost SONGS generation for hours in which SCE had a net-short energy position in the CAISO’s market. The Commission should also adopt SCE’s methodology for calculating all costs discussed in this brief.

¹⁶⁹WEM-14, p. 2.

¹⁷⁰ALJ Dudney, Tr. 1280, lines 15-27.

¹⁷¹WEM-14, p. 3.

Respectfully Submitted,

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Date: August 29, 2013

Exhibit A

SUMMARY OF SCE’S POSITION REGARDING ITS TOTAL ESTIMATED 2012 COSTS AND THE PORTION THEREOF THAT SHOULD BE CONSIDERED “REPLACEMENT POWER COSTS” FOR THE PURPOSES OF THIS OII

Cost Category	Total SONGS-Related Estimate for 2012	Amount the Commission Should Consider As “Replacement Power Costs”
Replacement Energy	\$259,222,843	\$211,010,759 ¹⁷²
Net Foregone Energy Revenues	\$131,347,158 ¹⁷³	0
Capacity-Related Costs	\$33,141,178	0
Miscellaneous Non-Capacity Related Costs:		
<ul style="list-style-type: none"> • Real Time Imbalance Energy Charges for Day-Ahead Schedule Deviations 	\$39,208	\$39,208
<ul style="list-style-type: none"> • On-site Auxiliary Load Costs 	\$5,524,919	0
<ul style="list-style-type: none"> • Participating Intermittent Resource Program (‘PIRP’) Allocation Charges to SONGS 	\$97,325	0
<ul style="list-style-type: none"> • Congestion Revenue Rights Charges 	\$9,936,084	0
TOTAL:		\$211,049,967

¹⁷²This number differs from SCE’s total 2012 estimate by \$48,212,084; the amount of replacement power costs SCE incurred during scheduled outage periods in 2012.

¹⁷³The net foregone energy revenues that SCE incurred in 2012 as a result of the outages at issue in this OII amounted to \$113,733,236. This number differs from SCE’s total 2012 estimate by \$17,613,922; the amount of replacement power costs SCE incurred during scheduled outage periods in 2012.