

Application No.: 11-05-023

Exhibit No.: _____

Witness: Jan Strack

Application of San Diego Gas & Electric Company
(U 902 E) for Authority to Enter into Purchase Power Tolling
Agreements with Escondido Energy Center, Pio Pico Energy
Center and Quail Brush Power.

A.11-05-023
(Filed May 19, 2011)

PREPARED SUPPLEMENTAL REBUTTAL TESTIMONY OF JAN STRACK

ON BEHALF OF

SAN DIEGO GAS & ELECTRIC COMPANY

FOR AUTHORITY TO ENTER INTO PURCHASE POWER TOLLING AGREEMENTS

WITH ESCONDIDO ENERGY CENTER, PIO PICO ENERGY CENTER AND

QUAIL BRUSH POWER

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

June 6, 2012

1 **PREPARED SUPPLEMENTAL REBUTTAL TESTIMONY OF**
2 **JAN STRACK**
3 **ON BEHALF OF**
4 **SAN DIEGO GAS & ELECTRIC COMPANY**
5

6 **Q1: Do you have a response to NRG’s testimony about the need for generation situated**
7 **in the Encina sub-area?**

8 **A1:** In my April 27, 2012 testimony, I indicated that the need for generation at the Encina site
9 can be eliminated by a relatively minor transmission “reconductoring”; however, NRG’s witness
10 Brian D. Theaker asserts that I “presume[] the continued operation of generation at the San
11 Onofre Nuclear Generating Station (‘SONGS’) into the foreseeable future.”¹ Mr. Theaker states
12 that “reliable operation of the local San Diego area requires a source of dynamic reactive power
13 in the vicinity of SONGS or the Encina site.”²

14 SDG&E maintains that, if the SONGS units are returned to service and remain in service
15 through at least year 2021, which is the current resource planning horizon for this proceeding,
16 then SDG&E sees no basis for NRG’s position that generation must be located in the Encina sub-
17 area to provide dynamic reactive power.

18 However, if both SONGS units are permanently shut down, additional sources of
19 dynamic reactive power will need to be available in the vicinity of SONGS and/or northern San
20 Diego County/southern Orange County. That additional reactive power could be provided by
21 generating units; but, it also could be provided by other means such as synchronous condensers.

¹ Prepared Testimony of Brian D. Theaker on Behalf of the NRG Companies (“NRG Testimony”) at NRG-4.
² *Id.* at NRG-5.

1 Further, if both SONGS units are permanently shut down, SDG&E will lose 440 MW of
2 dependable capacity that is currently being counted towards SDG&E's system Resource
3 Adequacy ("RA") requirements. The dependable capacity of the Product 2 resources will count
4 towards SDG&E's system RA requirements. Accordingly, a no-SONGS scenario enhances the
5 value of and increases the near-term need for the Product 2 resources proposed in SDG&E's
6 Application.

7
8 **Q2: Do you agree with DRA witness Ghazzagh's comments regarding the "Encina sub-**
9 **area"?**

10 **A2:** No. Mr. Ghazzagh fails to acknowledge that the CAISO itself has determined that the
11 138 kV Sycamore Canyon-Chicarita reconductor project would eliminate the Encina sub-area.³

12 Mr. Ghazzagh states that "the CAISO maintained in testimony in this proceeding and
13 before the CEC [California Energy Commission] that an Encina sub-area exists that establishes a
14 local capacity need of 150 MW as the minimum capacity necessary for reliable load serving
15 capacity in the sub-area."⁴ Mr. Ghazzagh notes that SDG&E has proposed a reconductor project
16 that would eliminate the Encina sub-area, but he questions whether the "CAISO agrees with
17 SDG&E that the reconductor project is feasible and will be implemented."⁵

18 Mr. Ghazzagh fails to address the CAISO board-approved 2011-2012 Transmission Plan
19 which finds that the proposed upgrade to the 138 kV Sycamore Canyon-Chicarita line would

³ <http://www.caiso.com/Documents/Board-approvedISO2011-2012-TransmissionPlan.pdf>, Section 4.9 – Policy Driven Results and Mitigations in SDG&E Area, pg. 338. "TL13820 Sycamore-Chicarita 138 kV line. This line shows up as overloaded for the contingency of Encina 230/138 Bank 60 in all four portfolios under peak load conditions. This overload is caused by the potential retirement of the Encina generation. If any generation materializes in Encina area, then this overload would be eliminated. In case no generation is available at Encina, a potential mitigation for this issue would be to reconductor this line."

⁴ Supplemental Testimony of Farzad Ghazzagh on Behalf of DRA ("Ghazzagh Testimony") at 11.

⁵ *Id.*

1 eliminate the Encina sub-area. If the Encina sub-area is eliminated, then, for purposes of
2 satisfying San Diego area local capacity requirements, generation anywhere within the San
3 Diego area would exhibit “electrical equivalence” with generation at Encina.⁶

4
5 **Q3: Do you agree with DRA witness Ghazzagh’s comments at page 11 that an**
6 **“additional conductor” is needed between Miguel and Bay Boulevard substations as a**
7 **result of adding SDG&E’s Product 2 generation?**

8 **A3:** No. As indicated in my April 27, 2012 prepared supplemental testimony, the studies that
9 determine the upgrades that will allow new generation to count towards local capacity
10 requirements are the CAISO’s Phase II interconnection studies. The CAISO’s Cluster 1 and 2
11 Phase II interconnection studies determined that a reconfiguration of taps would allow SDG&E’s
12 Product 2 resources to be counted towards San Diego area local capacity requirements.

13 My April 27, 2012 testimony addressed CAISO witness Mr. Sparks’ assertion that based
14 on a “sensitivity case” conducted by the CAISO, the addition of the Pio Pico and Quail Brush
15 generating resources would create overloads on the 230 kV Miguel-Bay Boulevard line that
16 would require the addition of a second set of wires between Miguel and Bay Boulevard
17 substations – the “additional conductor” referenced by Mr. Ghazzagh. The Cluster 1 and 2 Phase
18 II interconnection studies—the studies used to identify network upgrades that make the Product
19 2 resources deliverable for purposes of counting towards Local Capacity Requirements (“LCR”)
20 in the San Diego area—determined that only the reconfiguration of the taps on the 230 kV Otay
21 Mesa-Miguel Tap-Sycamore Canyon line and the 230 kV Otay Mesa-Miguel Tap-Bay

⁶ Depending on the location, network upgrades may be required in order for such generation to count towards San Diego area local capacity requirements. In the case of SDG&E’s Product 2 resources, only a minor reconfiguration of existing taps is required.

1 Boulevard line is needed for the Product 2 resources to be fully deliverable. No other
2 transmission upgrades are needed.

3 The CAISO's "sensitivity case" does not determine the network upgrades that will make
4 the Product 2 resources deliverable. The tap reconfiguration mentioned immediately above
5 renders the Product 2 generators fully deliverable for local resource adequacy. Thus, DRA's
6 comment that an "additional conductor" is needed between Miguel and Bay Boulevard
7 substations is not correct.

8 Neither Mr. Ghazzagh's nor Mr. Sparks' statements, noted above, affect my testimony
9 that for purposes of satisfying San Diego area local capacity requirements, relatively minor
10 transmission upgrades—a relatively minor reconductor project and a rearrangement of existing
11 taps—are all that is needed to provide "electrical equivalence" between generation located at the
12 Encina power plant and generation at the location of SDG&E's three Product 2 resources.

13
14 **Q4: Do you agree with NRG witness Theaker's analysis comparing the costs and benefits**
15 **of the proposed transmission upgrades?**

16 **A4:** In my April 27, 2012 testimony, I stated that, for approximately \$150,000 per year, a
17 locational procurement constraint that would otherwise exist goes away. However, Mr. Theaker
18 states that my testimony "implies" that the reconductoring project for the 138 kV Sycamore
19 Canyon-Chicarita transmission line "would annually save San Diego ratepayers" \$10.450 million
20 (\$10.6 million – \$0.15 million).⁷ This statement indicates that Mr. Theaker may have
21 misunderstood my testimony. My proposal to eliminate the Encina sub-area simply indicates
22 that, if it is implemented, it is an inexpensive solution for giving San Diego area load serving

⁷ NRG Testimony at NRG-5.

1 entities greater flexibility in meeting their LCR obligations, and it would eliminate the possibility
2 that the CAISO would use its back-stop procurement authority to ensure sufficient generation
3 was available within what is currently the Encina sub-area.
4

5 **Q5: Do you have any thoughts regarding NRG witness Theaker's statements about**
6 **maintaining existing Encina generation and the possibility that this generation would be**
7 **retained via capacity contracts with load serving entities?**

8 **A5:** Yes. Mr. Theaker's testimony states that "with generation at Encina operational and
9 under an RA contract, the CAISO would not need to engage in CPM procurement [back-stop
10 procurement via the CAISO's Capacity Procurement Mechanism] to meet the subpocket need if
11 SDG&E contracted for that capacity."⁸ Mr. Theaker fails to point out, however, that such an RA
12 contract would (i) only be possible if the generation at Encina is in compliance with the State
13 Water Resources Control Board's (SWRCB's) rules governing the use of ocean water for
14 cooling, and (ii) be feasible only if such a RA contract were consistent with least cost/best fit
15 resource selection criteria.

16 With respect to the SWRCB's rules, the March, 2011 OTC implementation plan filed for
17 the Encina Power Station says that the:

- 18 i. existing Encina units 1-3 will be shut down by December 31, 2017 under all
19 scenarios, and
- 20 ii. Existing units 4-5 will also be shut down by December 31, 2017 unless an
21 approved & effective impingement mortality and entrainment (IM&E)
22 mitigation measure is in place.⁹

⁸ *Id.* at NRG-6.

⁹ See NRG's March 2011 OTC implementation plan at 58.

http://www.waterboards.ca.gov/water_issues/programs/ocean/cwa316/powerplants/encina/docs/eps_ipplan2011.pdf.

1 Based on NRG’s OTC implementation plan, Encina units 1-3 would not appear to be
2 available during the time frame when a deficiency of dependable capacity is anticipated for the
3 San Diego local capacity requirement area. Also, according to NRG’s OTC implementation
4 plan, the schedule for Encina units 4-5 to comply with the OTC policy calls for an IM&E
5 mitigation pilot program to be engineered, installed, and operating by July 2012. SDG&E does
6 not believe it is likely that the pilot program will be operational by next month. Accordingly, the
7 basic availability of Encina units 4 and 5 is also in question.

8 In any event, as explained in the testimony of SDG&E’s witness Mr. Anderson, SDG&E
9 has determined that based on the offers received in the 2009 Conventional Supply (“Product 2”)
10 Request For Offer process, procuring 450 MW of generation from the Wellhead-Escondido,
11 Quail Brush and Pio Pico projects is the least cost/best fit way of satisfying SDG&E’s share of
12 projected LCR responsibilities.

13
14 **Q6: Do you agree with NRG witness Theaker’s comments that the “overall flexibility**
15 **provided by CECP [Carlsbad Energy Center Project] better meets the CAISO’s needs**
16 **for... integration services”?**

17 **A6:** As an initial matter, I note that since the CAISO has not yet adopted a formal definition
18 of “integration services” it is not possible to know whether, as compared to SDG&E’s Product 2
19 resources, the CECP “better meets” the CAISO’s needs. I also note that while NRG’s May 18,
20 2012 testimony includes comments regarding NRG’s CECP, the CECP is not at issue in this
21 proceeding. However, in so far as NRG is indicating the general point that local, gas-fired
22 generation will accommodate increasing levels of intermittent renewable generation, SDG&E
23 concurs and notes that its proposed Product 2 resources would do so.

SDG&E’s Product 2 resources will have the following operating flexibilities based on manufacturers’ published information--actual performance may be better. It should be noted that the Pio Pico project and the Quail Brush project are made up of multiple units (3 and 11 respectively). Thus, the ramping capability provided by these plants at any given time depends on how many units are dispatched by the CAISO.

	Capacity per unit (MW)	Number of units at plant	Plant Capacity (MW)	Typical Start Time for each unit (minutes)	Typical Ramp Rate per unit (MW/min)	Typical Ramp Rate for entire plant (MW/min)
Pio Pico units	100	3	300	10	40	120
Quail Brush units	9.1	11	100	10	2	22
Wellhead Escondido unit	48.5	1	48.5	10	15	15
		Combined	~450	10	10.5	157

SDG&E sees the potential for units like these to be started and stopped on a daily basis. This level of usage is already being seen in the existing peaker fleet. As an example, the two units at SDG&E’s Miramar Energy Center, owned by SDG&E, have the same technology as the Wellhead Escondido plant in this Application and were started 136 and 116 times in the first three months of year 2012. This is an average of more than one start per day.

Q7: Do you have a response to DRA witness Spencer’s claim, in his testimony at page 16, that the operating flexibility from the Product 2 resources to support the integration of renewable resources “is not relevant to this proceeding” because the CAISO’s proposal for flexibility attributes (“maximum ramping,” “load following” and “regulation”) “has not been adopted” by the Commission?

A7: SDG&E finds this position to be unreasonably narrow: the operational flexibility benefits of SDG&E’s proposed resources exist regardless of whether the Commission has formally implemented an administrative process for securing resources exhibiting operational

1 flexibility. While the Commission does not yet have a formal process, there is little doubt that
2 the CAISO balancing authority area will require new sources of flexible generating capacity
3 given expected retirements of flexible generating resources that use ocean water for cooling and
4 given the anticipated surge in intermittent renewable resource additions.¹⁰ In fact, the CAISO
5 has publicly indicated a need for 4600 MW of new flexible generating resources by year 2020.¹¹
6 It makes no sense to ignore operating flexibility.

7 In my April 27, 2012 testimony, I indicated that the proposed generators at issue in this
8 proceeding would provide flexibility attributes that would enable the integration of renewable
9 generation. Specifically, I pointed out that the three generating projects would provide the
10 beneficial attributes of maximum ramping, load following and regulation [page JS-13]. Given
11 these operational attributes, the Commission has the opportunity to approve three PPTAs
12 providing 450 MW of capacity that will count towards San Diego area local capacity
13 requirements and, at the same time, support California's efforts to increase the amount of energy
14 supplied from renewable resources.

15
16 **Q8: Does SDG&E agree with CEJA witness Powers' testimony (i), at page 21, that**
17 **peaking gas turbines will not be required to provide "rapid ramping" to accommodate**
18 **existing distribution-level solar photovoltaic systems in the San Diego area, and (ii) at page**
19 **29, that given the amount and profile of San Diego area wind resources, "new peaker**

¹⁰ The Commission recently directed the Investor Owned Utilities to contract with the Sutter Energy Center combined cycle plant to minimize the possibility that the CAISO would use its back-stop procurement authority to ensure that the plant's operational flexibility attributes would not be lost due to retirement.

¹¹ See page 8 of the August 18, 2011 memorandum from Keith Casey to the CAISO Board of Governors.
<http://www.caiso.com/Documents/110825BriefingonRenewableIntegration-Memo.pdf>

1 **resources are not needed to address renewable resource intermittency in SDG&E service**
2 **territory”?**

3 **A8:** In assessing the operating flexibility necessary to accommodate the output of solar and
4 wind resources, Mr. Powers’ mistakenly focuses on the San Diego area rather than the CAISO
5 Balancing Authority as a whole. The need for operating flexibility is a CAISO Balancing
6 Authority area requirement, not a requirement that is limited to the San Diego area. As noted
7 above, the CAISO has publicly indicated a need for 4600 MW of new flexible generating
8 resources by year 2020. This need is for the entire CAISO Balancing Authority given the
9 expected retirements of flexible generating resources that use ocean water for cooling in both
10 southern and northern California, and given the anticipated surge in intermittent solar and wind
11 resource additions throughout the entire CAISO balancing authority area. SDG&E’s Product 2
12 resources provide operating flexibility that can be used to address the integration requirements of
13 intermittent renewable resources, wherever in the CAISO Balancing Authority those renewable
14 resources are located.

15
16 **Q9: DRA witness Fagan relies, in part, on the CAISO’s determination that the N-1-1**
17 **contingency event is more limiting than the G-1/N-1 contingency event to develop an**
18 **estimate of local capacity requirements for the San Diego area that is lower than the**
19 **estimate provided by Mr. Anderson. Do you have any additional information that would**
20 **be useful in establishing which of these contingency events should be used to determine the**
21 **San Diego area local capacity requirement?**

22 **A9:** Yes. Subsequent to receiving a copy of the CAISO’s response to question 1 of CEJA
23 data request number 3, SDG&E performed additional power flow analyses, using current

1 information on expected system conditions for year 2021, to assess the impact of G-1/N-1 and N-
2 1-1 contingencies on estimated local capacity requirements for the San Diego area. These
3 analyses support Mr. Anderson’s estimate that San Diego area local capacity requirements in
4 year 2021 will be 3026 MW.

5 By way of background, DRA witness Robert Fagan references the CAISO’s response to
6 question 1 of CEJA data request number 3, and points out that “the CAISO tested the G-1/N-1
7 condition but found that the loss of two 500 kV transmission lines (the N-1-1 contingency) is a
8 more severe case, and thus used the N-1-1 for its LCR need calculations.”¹² Mr. Anderson’s
9 April 27, 2012 testimony, on the other hand, estimates San Diego area Local Capacity
10 Requirements using the maximum simultaneous import determined in the Sunrise Powerlink
11 proceeding for a G-1/N-1 contingency condition—3500 MW.

12 SDG&E’s recent analysis began with a year 2022 power flow case that is being used in
13 the Company’s annual Grid Assessment process.¹³ San Diego area transmission substation-level
14 loads were set to 5769 MW, and pre-contingency transmission losses were determined to be 153
15 MW; the sum of transmission substation-level loads and transmission losses being equal to the
16 load level used by Mr. Anderson to estimate year 2021 Local Capacity Requirements (5922
17 MW). Under contingency conditions, transmission losses increased to 194 MW such that the
18 sum of transmission substation-level loads and transmission losses is 5963 MW.

19 All generation at Encina was assumed to be retired. The 138 kV Sycamore Canyon-
20 Chicarita reconductor project was modeled as being in place. The Cabrillo II peakers were
21 assumed to be retired. The Otay Mesa combined cycle plant was assumed to be unavailable (a
22 G-1 event). SDG&E’s Product 2 resources were included in the case. All available generators

¹² Supplemental Testimony of Robert M. Fagan on Behalf of DRA (“Fagan Testimony”) at 10.

¹³ This case includes the two units at the SONGS operating at full output.

1 within the San Diego area were then modeled as producing power at dependable capacity levels
2 (“Net Qualifying Capacity”). With this amount of San Diego area generation, simultaneous
3 imports into the San Diego area are high, 3973 MW. The simulated outage of the 500 kV ECO-
4 Miguel line (an N-1 event) for these conditions revealed a thermal overload of the 230 kV Mira
5 Loma-Chino line. Proxy generation was then added within the San Diego area and offset with
6 reductions of thermal generation in the Imperial Valley area—i.e., simultaneous imports into the
7 San Diego area were reduced—until all reliability criteria violations were eliminated. All
8 reliability criteria violations were eliminated at the point where 3643 MW were being
9 simultaneously imported into the San Diego area. At 3643 MW of simultaneous imports, San
10 Diego area local capacity requirements would be 2924 MW (5963 MW – 3643 MW + 604 MW).
11 This compares to Mr. Anderson’s 3026 MW estimate for year 2021 San Diego area local
12 capacity requirements.

13 SDG&E’s recent analysis also tested the N-1-1 contingency event to determine its impact
14 on San Diego area local capacity requirements. SDG&E started with a case having 3905 MW of
15 simultaneous imports. In this case the Otay Mesa combined cycle plant is assumed to be
16 available at full output and this production is offset by reducing the output of thermal generation
17 located in the Imperial Valley area. The contingency event is the loss of the 500 kV Imperial
18 Valley-Suncrest line followed by the loss of the 500 kV ECO-Miguel line. At 3905 MW of
19 simultaneous imports, the N-1-1 contingency event resulted in a non-converged power flow case;
20 i.e., low voltages and a mismatch between reactive power requirements and reactive sources.
21 This power flow case was revised by reducing the output of thermal generation in northern
22 California rather than in the Imperial Valley area. At 3905 MW of simultaneous imports, this
23 revised case converged for the N-1-1 contingency event; however, significant thermal overloads

1 of the 230 kV Mira Loma-Chino line and other transmission lines in the Los Angeles basin were
2 observed. This revised power flow case was further modified by redispatching thermal
3 generation in the Los Angeles and Imperial Valley areas pre-contingency. Proxy generation was
4 then added within the San Diego area with offsetting reductions of thermal generation in the
5 Imperial Valley area—i.e., simultaneous imports into the San Diego area were reduced—until
6 the thermal overloads in the Los Angeles basin for the N-1-1 contingency event were eliminated.
7 These overloads were eliminated at the point where 2747 MW were being simultaneously
8 imported into the San Diego area. Given transmission substation-level loads of 5769 MW and
9 losses of 144 MW, this level of simultaneous imports means there is 3167 MW (5769 MW +
10 144 MW - 2747 MW) of dependable generation within the San Diego area that mitigates the
11 identified reliability criteria violations. This compares to Mr. Anderson’s 3026 MW estimate for
12 year 2021 San Diego area local capacity requirements.

13 As is generally the case with power flow analysis, the results are sensitive to the assumed
14 location of the proxy generation in the San Diego area, as well as the dispatch pattern of
15 generation in other areas of the Western Electricity Coordinating Council (“WECC”). Given the
16 uncertainties associated with long-term projections of local capacity requirements and the range
17 of results indicated by SDG&E’s recent analysis, I recommend the Commission adopt Mr.
18 Anderson’s estimate of 3026 MW for the San Diego area LCR.

19
20 **Q10: Do you agree with CEJA witness Powers’ assertion that SDG&E has misidentified**
21 **the worst-case G-1 contingency event and therefore overstated San Diego area local**
22 **capacity requirements?**

1 **A10:** Given current CAISO policy on the treatment of combined cycle plant outages, no. Mr.
2 Powers complains that “SDG&E assumes the loss of the entire [Otay Mesa] combined cycle
3 plant when a forced outage of the steam turbine occurs.”¹⁴ Mr. Powers asserts that the loss of the
4 steam turbine at either the Otay Mesa or Palomar combined cycle plants should not be assumed
5 to take out the entire combined cycle plant.¹⁵ The result of Mr. Powers’ assertion is that the
6 worst case G-1 contingency event would remove a smaller amount of dependable capacity than
7 the 604 MW assumed in Mr. Anderson’s estimate of San Diego area Local Capacity
8 Requirements.

9 Mr. Powers fails to acknowledge that for purposes of establishing Local Capacity
10 Requirements, SDG&E does not determine what the worst case G-1 contingency event is; the
11 CAISO makes this determination. The CAISO has been clear that unless a combined cycle plant
12 can demonstrate for a 36 consecutive month period that the outage of one of the gas turbines
13 does not trip the remaining steam turbine and gas turbine, or that the outage of the steam turbine
14 does not trip either of the gas turbines, or that any other single failure at the plant does not take
15 out the entire plant, it will be assumed that the outage of the entire combined cycle plant is a G-1
16 contingency event.¹⁶ To date, neither the Otay Mesa combined cycle plant nor the Palomar
17 combined cycle plant has been able to satisfy this test for a consecutive 36 month period. Mr.
18 Powers’ testimony that the outage of the steam turbine and the outage of the gas turbines at a
19 combined cycle plant should be treated as separate G-1 contingency events, is at odds with how
20 the CAISO determines the amount of generating capacity that is assumed unavailable for a G-1

¹⁴ Prepared Direct Testimony of Bill Powers on Behalf of the California Environmental Justice Alliance (“Powers Testimony”) at 28.

¹⁵ *Id.*

¹⁶ The CAISO planning standards provide that an exception can be requested where historical data proves the outage frequency of the entire plant for the loss of any thermally-coupled element is “less than once in three years.”

<http://www.caiso.com/Documents/TransmissionPlanningStandards.pdf>

1 contingency event. The CAISO has determined that the entire capacity of the Otay Mesa
2 combined cycle plant (604 MW) is the amount of generating capacity that must be assumed
3 unavailable when calculating San Diego area local capacity requirements for a G-1/N-1
4 contingency event.

5
6 **Q11: Are CEJA witness Firooz’s and DRA witness Fagan’s views of the probability with**
7 **which the G-1/N-1 and N-1-1 contingency events occur relevant to the issues in this**
8 **proceeding?**

9 **A11:** No. The North American Electric Reliability Corporation (“NERC”), WECC and
10 CAISO reliability standards require that G-1/N-1 and N-1-1 contingency events must be studied
11 and mitigated regardless of how improbable those events may be.

12 CEJA witness Jaleh Firooz comments that “G-1/N-1 or N-1-1 reliability criteria, which
13 establishes the local capacity requirements for certain load pockets—such as the San Diego
14 area—are being applied for conditions which, for all practical purposes, will never happen.”¹⁷

15 Ms. Firooz conducts a probability analysis and estimates that the probability of the G-1/N-1
16 overlapping outage occurring during peak load hours that could be expected during a one-year-
17 in-ten heat wave is “about 0.00002% in any given year.”¹⁸ Witness Firooz calculates that this
18 probability equates to an expected outage of “about 7 seconds in a year” or, cumulatively, “a
19 little more than a minute in a ten year period.”¹⁹ Similarly, DRA Witness Fagan observes that
20 “these are situations that have a low likelihood of occurring.”²⁰

¹⁷ Prepared Direct Testimony of Jaleh Firooz on Behalf of the California Environmental Justice Alliance (“Firooz Testimony”) at 6.

¹⁸ *Id.* at 5.

¹⁹ *Id.*

²⁰ Fagan Testimony at 15.

1 Regardless of how interesting CEJA’s and DRA’s points may be, their analyses are not
2 relevant in determining whether the indicated contingencies must be mitigated in accordance
3 with NERC, WECC and CAISO reliability standards and requirements. Ms. Firooz correctly
4 notes that “under CAISO’s current deterministic approach to contingency analysis, every
5 conceivable N-1, G-1/N-1 and N-1-1 overload must be mitigated regardless of its probability,
6 consequence and cost.”²¹ Mr. Fagan correctly notes that the “CAISO must analyze ways to
7 preserve system reliability even in the event of multiple critical contingencies, occurring on high-
8 load days such as during the highest peak period of the summer.”²² The CAISO and SDG&E
9 have correctly applied the applicable G-1/N-1 and N-1-1 reliability standards in estimating local
10 capacity requirements for the San Diego area.

11
12 **Q12: CEJA witness Firooz suggests at pages 12-13 that the Talega-Escondido/Valley-**
13 **Serrano (TE/VS) Interconnect project should be considered as an alternative to adding**
14 **SDG&E’s Product 2 resources since “it is possible” that simultaneous imports into the San**
15 **Diego local capacity requirement area could be increased “by over 1000 MW.” Do you**
16 **believe the TE/VS Interconnect project is a viable alternative to SDG&E’s Product 2**
17 **resources?**

18 **A12:** The viability of the TE/VS Interconnect project is questionable and the approximately
19 1000 MW increase in simultaneous import capability into the San Diego area claimed by the
20 sponsor of the TE/VS Interconnect project has not been verified .

21 The TE/VS Interconnect project was previously proposed by The Nevada Hydro
22 Company (“TNHC”). THNC submitted an application to this Commission for issuance of a

²¹ Firooz Testimony at 7.

²² Fagan Testimony at 15.

1 Certificate of Public Convenience and Necessity (“CPCN”) to build the TE/VS Interconnect
2 project. On May 24, 2012, the Commission dismissed the CPCN application; no further
3 proposal along these lines is pending.

4

5 **Q13: Does this conclude your testimony?**

6 **A13:** Yes.