

Investigation No.: I.12-10-013
Exhibit No.: SDGE-02
Witnesses: Michael De Marco
Andrew Scates
Robert Schlax

**SAN DIEGO GAS & ELECTRIC COMPANY'S
TESTIMONY PROVIDING INFORMATION REQUESTED IN ADMINISTRATIVE
LAW JUDGE'S DECEMBER 10, 2012 RULING REQUESTING ADDITIONAL
TESTIMONY PERTAINING TO TWENTY FIVE QUESTIONS**

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

January 9, 2013

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	RESPONSE TO QUESTIONS	2
	Question No. 1 (Michael De Marco)	2
	Question No. 2 (Michael De Marco)	3
	Question No. 3 (Michael De Marco)	4
	Question No. 4 (Michael De Marco)	5
	Question No. 5 (Michael De Marco)	6
	Question No. 6 (Michael De Marco)	7
	Question No. 7 (Michael De Marco)	8
	Question No. 8 (Michael De Marco)	9
	Question No. 9 (Michael De Marco)	10
	Question No. 10 (Michael De Marco)	11
	Question No. 11 (Michael De Marco)	12
	Question No. 12 (Michael De Marco)	13
	Question No. 13 (Michael De Marco)	14
	Question No. 14 (Michael De Marco)	15
	Question No. 15 (Michael De Marco)	16
	Question No. 16 (Andrew Scates)	17
	Question No. 17 (Andrew Scates)	20
	Question No. 18 (Andrew Scates)	21
	Question No. 19 (Andrew Scates)	22
	Question No. 20 (Andrew Scates)	23
	Question No. 21 (Michael De Marco)	24

Question No. 22 (Robert Schlab).....	25
Question No. 23 (Michael De Marco)	26
Question No. 24 (Michael De Marco)	27
Question No. 25 (Michael De Marco)	28
III. QUALIFICATIONS	29

1
2
3
4
5
6
7
8
9
10
11

I.

INTRODUCTION

Chapter II of this testimony (Exhibit SDGE-2) provides San Diego Gas & Electric Company's (SDG&E) responses to Questions No. 1-25 posed in the December 10, 2012 Administrative Law Judge's Ruling Requesting Additional Testimony (ALJ Ruling) in connection with the California Public Utilities Commission (Commission) Order Instituting Investigation (I.12-10-13 or OII). As will be seen in SDG&E's responses to Questions 1-15, 21 and 23-25, SDG&E as a non-operating owner is relying on the information provided by SCE as the operating agent for San Onofre Nuclear Generating Station (SONGS) to address these questions.

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II.

RESPONSE TO QUESTIONS

Question No. 1 (Michael De Marco)

Q. A copy of any report issues by the Nuclear Regulatory Commission (NRC) or its staff that addresses the cause(s) of the outage, other than the July 18, 2012 NRC report attached to the OII.

R. SDG&E, as a non-operating owner, is relying on the information provided by Southern California Edison Company (SCE) as the operating agent for SONGS.

1 **Question No. 2 (Michael De Marco)**

2 Q. A copy of any reports (including attachments) provided by any outside
3 consultants retained to assist with the utility's investigation of the cause(s) of the Outage.

4 R. SDG&E, as a non-operating owner, is relying on the information provided by
5 SCE as the operating agent for SONGS to address this question.

1 **Question No. 3** (Michael De Marco)

2 Q. The type and quality of fuel used by the SONGS units.

3 R. SDG&E, as a non-operating owner, is relying on the information provided by

4 SCE as the operating agent for SONGS to address this question.

1 **Question No. 4 (Michael De Marco)**

2 Q. If applicable (e.g., if the units are in any way fuel- or interconnection-limited),
3 describe any limitations on the implications an outage in any one unit may or may not have on
4 the total output of the entire facility.

5 R. SDG&E, as a non-operating owner, is relying on the information provided by
6 SCE as the operating agent for SONGS to address this question because SDG&E does not have
7 independent access to this data.

1 **Question No. 5 (Michael De Marco)**

2 Q. For the last five years, whether or not there were any scheduled outages, and if so,
3 how many and providing, for each one, the date it commenced, its duration (in days), and the
4 purpose of each such outage.

5 R. SDG&E, as a non-operating owner, is relying on the information provided by
6 SCE as the operating agent for SONGS to address this question.

1 **Question No. 6 (Michael De Marco)**

2 Q. For the last five years, whether or not there were any unplanned outages, and if
3 so, how many and providing, for each one, the date it commenced, its duration (in days), and the
4 purpose or cause of each such outage.

5 R. SDG&E, as a non-operating owner, is relying on the information provided by
6 SCE as the operating agent for SONGS to address this question.

1 **Question No. 7 (Michael De Marco)**

2 Q. For periods of time other than those during an outage identified above, were there
3 any periods of time during which this plant, or any unit of this plant, experienced any limitations
4 or restrictions on its capacity or output, other than for economic dispatch purposes, such that its
5 capacity or output was limited or restricted to a level of less than 90% of its nominal rated
6 capacity or output and, if so, how many occasions and providing, for each occasion, the date it
7 commenced, its duration, and the reason for such limitation or restriction on capacity or output.

8 R. SDG&E, as a non-operating owner, is relying on the information provided by
9 SCE as the operating agent for SONGS to address this question.

1 **Question No. 8** (Michael De Marco)

2 Q. SCE's original SONGS Units 2 and 3 Operation & Maintenance (O&M) budget
3 for the last five years.

4 R. SDG&E, as a non-operating owner, is relying on the information provided by
5 SCE as the operating agent for SONGS to address this question.

1 **Question No. 9** (Michael De Marco)

2 Q. The actual SONGS Units 2 and 3 O&M recorded expenses for the last five years.

3 R. SDG&E, as a non-operating owner, is relying on the information provided by

4 SCE as the operating agent for SONGS to address this question.

1 **Question No. 10** (Michael De Marco)

2 Q. SCE's original SONGS Units 2 and 3 capital budget for the last five years.

3 R. SDG&E, as a non-operating owner, is relying on the information provided by

4 SCE as the operating agent for SONGS to address this question.

1 **Question No. 11** (Michael De Marco)

2 Q. The actual SONGS Units 2 and 3 recorded capital spending for the last five years.

3 R. SDG&E, as a non-operating owner, is relying on the information provided by

4 SCE as the operating agent for SONGS to address this question.

1 **Question No. 12** (Michael De Marco)

2 Q. An explanation of the reasonableness of each recorded O&M expense and capital
3 expenditure made in 2012 related to SONGS, taking into account the changed circumstances
4 arising from the extended outages of Units 2 and 3.

5 R. SDG&E, as a non-operating owner, is relying on the information provided by
6 SCE as the operating agent for SONGS to address this question because SDG&E does not have
7 independent access to this data.

1 **Question No. 13** (Michael De Marco)

2 Q. Provide an MS Excel spreadsheet showing quantities and costs for purchased
3 uranium, and its fabrication and enrichment, in side-by-side columns, left to right, with the
4 columns labeled for the relevant years and months, for:

- 5 • each fuel type used during 2011-2012;
- 6 • date for 2013, by month, January through December; and
- 7 • the annual total for 2012.

8 R. SDG&E, as a non-operating owner, is relying on the information provided by
9 SCE as the operating agent for SONGS to address this question.

1 **Question No. 14** (Michael De Marco)

2 Q. Identify the number of nuclear fuel purchase contracts open during 2011 and
3 2012, and provide the terms and conditions of the contracts related to any costs or savings arising
4 from the extended outages of Units 2 and 3.

5 R. SDG&E, as a non-operating owner, is relying on the information provided by
6 SCE as the operating agent for SONGS to address this question.

1 **Question No. 15 (Michael De Marco)**

2 Q. Provide in a single MS Excel, or equivalent and compatible spreadsheet, data for
3 both SONGS units. Beginning on a new row for each SONGS unit, provide:

- 4 • a short, readily identifiable, label or name for each unit (e.g., “SONGS 2”
5 and “SONGS 3”);
- 6 • its California Independent System Operator (CAISO) rated capacity, for each
7 unit, in Megawatt (MW), as of January 1, 2012, in an MS Excel number
8 format;
- 9 • percentage, in MS Excel percentage format, of the capacity of the units, to
10 which the respective co-owners are entitled, as of January 1, 2012;
- 11 • the nameplate rated capacity, for each unit, in MW, as of December 31 of
12 2012;
- 13 • percentage, in MS Excel percentage format, of the capacity of the units to
14 which the respective co-owners are entitled, as of December 31 of 2012; and
- 15 • the average availability factors for each unit over the last five years.

16 R. SDG&E, as a non-operating owner, is relying on the information provided by
17 SCE as the operating agent for SONGS to address this question.

1 **Question No. 16 (Andrew Scates)**

2 Q. Identify any methodology which you believe would provide a better estimate of,
3 or proxy for, the cost of replacement energy for the current SONGS outages, than using the hour-
4 ahead average energy prices published by the CAISO for locations in your service territory (less
5 any appropriate avoided costs, if any), and justify your recommendation.

6 R. SDG&E supports using the hourly day-ahead energy price for the SP15 Trading
7 Hub published by the CAISO as a better estimate of, or proxy for, the cost of replacement energy
8 for the current SONGS outages.¹

9 SDG&E is a participant in the CAISO organized markets. SDG&E bids or schedules its
10 generation resources into the CAISO's energy and capacity markets, and purchases its bundled
11 customers' energy requirements from the CAISO's energy markets. Concerning SDG&E's
12 ownership interest in SONGS, while SCE bids or schedules the entire output of SONGS into the
13 CAISO's markets, SDG&E has in place an Inter-Scheduling Coordinator Trade (IST)
14 arrangement with SCE. This IST has the effect of treating SDG&E's ownership share of
15 SONGS generation as though it had bid or scheduled this output into the CAISO markets that is
16 financially settled by the CAISO through the IST arrangement with SCE. As a result, generation
17 output from a resource, including SONGS, does not directly serve SDG&E bundled load, but
18 instead is sold or scheduled into the CAISO's organized market. Through the IST with SCE,
19 revenue for the energy sale offsets the procurement expense SDG&E incurs for serving its
20 bundled customer load from the CAISO organized markets. The difference between SDG&E's
21 aggregate energy schedules (including ISTs) for generation and purchases for serving bundled
22 load is considered SDG&E's net open position. If SDG&E's awarded supply position is less
23 than its bundled load requirements, the open position is considered "net short." Conversely, if
24 SDG&E's awarded supply position is greater than its bundled load requirements, the open
25 position is considered "net long." For purposes of this response, SDG&E assumes the reference
26 to "the cost of replacement energy" is limited to the energy (measured on a MWh basis) that
27 SONGS could have generated had it been available to operate that would have reduced
28 SDG&E's net short position.

¹ The CAISO runs a day-ahead Integrated Forward Market (IFM) and publishes day-ahead prices on an hourly basis.

1 For the current SONGS Units 2 and 3 outages, SDG&E believes the CAISO published
2 SP-15 Trading Hub day-ahead prices represent the best proxy for the calculation of SDG&E's
3 SONGS replacement energy costs as a result of the outages. A day-ahead market result is more
4 appropriate than an hour-ahead price because a large baseload resource such as SONGS is
5 typically bid or scheduled in the day-ahead market. The CAISO's day-ahead market transacts
6 significantly higher volumes of energy compared to the CAISO's hour-ahead and real-time
7 markets, and therefore is the most appropriate representation of the value of energy for a given
8 hour or day. The only reasonable use of real-time hourly market prices for purposes of
9 calculating replacement energy expenses for a large baseload unit in a forced outage condition
10 would be for the initial hours of the outage event in which the real-time energy price is charged
11 for negative energy deviations relative to the resource's day-ahead or hour-ahead schedule.²

12 SDG&E proposes the use of CAISO SP-15 Trading Hub day-ahead, hourly prices for
13 purposes of estimating its costs of replacement energy. The CAISO SP15 Trading Hub is an
14 appropriate pricing point because the SONGS energy that would have otherwise been produced
15 would have generally served SP15 load. The CAISO SP-15 Trading Hub day-ahead, hourly
16 prices are commonly used to settle financial transactions for energy transacted for delivery in
17 southern California. Further, SDG&E is paid the hourly day-ahead price for its share of SONGS
18 output by the CAISO. As such, SDG&E believes that using the CAISO SP-15 Trading Hub day-
19 ahead, hourly prices is an appropriate approximation of the foregone CAISO revenues resulting
20 from the outage of SONGS 2 and 3. In contrast, the CAISO's day-ahead hourly prices at the
21 SONGS generation nodes are not a useful price benchmark because SONGS is not delivering
22 energy at those nodes when the units are not operating, and the published prices are therefore not
23 reflective of what would have happened had SONGS been on-line.

24 The final adjustment that should be made to any estimate of SDG&E's replacement
25 energy expense as a result of the SONGS outages is an appropriate accounting for the historical
26 availability of the SONGS generators. All power plants experience forced outages from time-to-
27 time, despite the employment of best maintenance practices. To account for the fact that the

² In the case of SONGS Unit 3, SDG&E incurred real-time energy charges for the energy that was not delivered for the balance of January 31, 2012, and all of February 1, 2012, as a result of the forced outage event. Effective February 2, 2012, the day-ahead price is the most appropriate price benchmark for assessing the cost of replacement energy because SONGS energy is typically bid or scheduled into the CAISO's day-ahead market.

1 SONGS Units 2 and 3 may have experienced forced outages for reasons unrelated to the current
2 tube wear-related outages, and therefore would not have been available as part of the normal
3 course of operations, forecasts of replacement energy expense and other market-related costs
4 should be reduced by the historical forced outage rate of the SONGS units. For purposes of this
5 analysis, SDG&E proposes to use a 2.8% annual average forced outage rate, which is reflective
6 of the forced outage rate experienced by SONGS Units 2 and 3 for the ten-year period 2002-
7 2011.

1 **Question No. 17 (Andrew Scates)**

2 Q. Identify any publicly-available source of hour-ahead energy prices, available for
3 every hour of every day of the current outages, if any, which you believe would better represent
4 hour-ahead (when appropriate) replacement energy costs in your service territory than the hour-
5 ahead energy prices published by the CAISO, and justify your recommendation. Provide any
6 such hour-ahead energy prices, for every hour of every day of the current outages, in an MS
7 Excel-compatible spreadsheet.

8 R. Please see the response to Question No. 16. SDG&E believes the use of the
9 CAISO published SP-15 Trading Hub hourly day-ahead price represents the most appropriate
10 price benchmark for the estimation of SDG&E's replacement energy costs associated with the
11 SONGS outages. As also explained in response to Q.16, SDG&E utilized CAISO hour-ahead
12 energy prices for SP-15 Trading Hub as the appropriate replacement energy costs for the hours in
13 which SONGS had received a Day-Ahead award but was unable to actually provide energy due
14 to the outages (January 31 and February 1, 2012). SDG&E is not aware of any other publicly-
15 available sources of hour-ahead energy prices, available for every hour of every day for the
16 current outage period (other than the CAISO published prices).

1 **Question No. 18** (Andrew Scates)

2 Q. Identify any publicly-available source of day-ahead energy prices, available for
3 every hour of every day of the current outages, if any, which you believe would better represent
4 day-ahead (when appropriate) replacement energy costs in your service territory than the day-
5 ahead energy prices published by the CAISO, and justify your recommendation. Provide any
6 such day-ahead energy prices, for every hour of every day of the current outages, in an MS
7 Excel-compatible spreadsheet.

8 R. Please see the response to Questions No. 16 and 17. SDG&E is not aware of any
9 publicly available hourly day-ahead energy prices other than those published by the CAISO,
10 which it believes would more appropriately represent SDG&E's SONGS 2 and 3 replacement
11 energy costs.

1 **Question No. 19 (Andrew Scates)**

2 Q. Describe the objective circumstances, if any, in which the utility can enter into
3 bilateral energy procurement contracts that reliably and predictably incur lower total
4 procurement costs for replacement energy than by relying on CAISO, or other Regional
5 Transmission Organization-based public markets.

6 R. SDG&E explores potential opportunities to transact bilaterally for short-term
7 physical energy. However, it is not possible to know ex-ante if a bilateral energy procurement
8 contract will result in lower cost than reliance on CAISO's IFM or real-time energy markets,
9 unless the contract is specifically priced at a discount to CAISO market clearing prices (*e.g.*,
10 contract price = CAISO IFM price less a fixed \$/MWh discount). Transacting with third party
11 suppliers for physical energy are generally not a feasible contract pricing mechanism and not
12 commercially attainable because sellers will not choose to sell at a discount to CAISO IFM when
13 they could otherwise sell their output at the higher CAISO IFM price. While SDG&E does
14 entertain bilateral third party offers and evaluates them on an economic basis, nonetheless,
15 procuring energy through the CAISO market will typically be the most economic choice.
16 Bilateral physical transactions at CAISO interties can be useful where the objective is to both fill
17 a Resource Adequacy need and an energy short position which, may in fact, result in these types
18 of transactions being economic.

19 As already stated in SDG&E's response to Q. 16 -18, in SDG&E's opinion the CAISO
20 hourly day-ahead price for SP-15 Trading Hub is the best proxy for representing SDG&E's
21 SONGS replacement costs.

1 **Question No. 20 (Andrew Scates)**

2 Q. Identify the methodology, if any, which you believe would readily and reliably
3 provide a good estimate of, or proxy for, the actual costs avoided during the current outages, and
4 justify your recommendation.

5 R. Given the context of the preceding several questions, SDG&E interprets this
6 question as asking about a good estimate of, or proxy for, the actual costs avoided that results
7 from “replacement power”-related costs during the current outages. SDG&E believes that an
8 appropriate proxy for such costs is the cost of nuclear fuel that was otherwise not consumed due
9 to the outages and that can be re-purposed or re-sold. Further, as the re-start of Unit 3 would be
10 predicated on the performance of re-started Unit 2, Unit 3 re-fueling originally scheduled for late
11 2012/early 2013 will be delayed. In the case of SDG&E, outage costs are typically recovered
12 under a balancing account. As a result, these re-fueling and outage-related costs are essentially
13 avoided during the outage period. If the question is asking about broader categories of “avoided
14 costs” due to the outages, SDG&E has no direct knowledge of operational details of SONGS,
15 and would rely on SCE to provide such information. As Operating Agent, SCE would be able to
16 identify if the Unit 3 de-fueling would result in reduced staff efforts and reduced NRC efforts
17 (because the unit is in stasis). Further, they would be the correct entity to determine if
18 contractors used during normal operations could be released.

1 **Question No. 21 (Michael De Marco)**

2 Q. Does the utility believe that it can meet a reasonable manager and /or prudence
3 standard, in its management of SONGS regarding the current outages, and does the utility
4 believe it currently employs an appropriate program of internal audits and controls regarding
5 SONGS operations, including for outages?

6 R. SDG&E, as a non-operating owner, is relying on the information provided by
7 SCE as the operating agent for SONGS to address this question.

1 **Question No. 22 (Robert Schlax)**

2 Q. Other than Sarbanes-Oxley testing, did the utility actually perform any internal
3 audit regarding any aspect of SONGS administration within the last five years? If yes, please
4 specify when the standards under which such internal audit was conducted, the areas addressed, a
5 brief summary of results and a copy of any report of such internal audit.

6 R. No. Given the context of the issues identified in the OII regarding the SONGS
7 steam generator replacement program (SGRP) and the extended outages at SONGS, and the
8 guidance provided by Erik Greene of the Commission's Energy Division during a December 13,
9 2012, at 2:p.m., phone conversation between Russell G. Worden of SCE, Ms. Wendy Keilani of
10 SDG&E, and Mr. Green, SDG&E interprets this question as seeking internal audits related to (1)
11 the SGRP and activities potentially related to SCE's implementation of the SGRP (such as
12 SONGS nuclear oversight, procurement, work control, and corrective action program activities)
13 and (2) the current extended outages (e.g., audits completed in 2012). SDG&E has not
14 performed any internal audit relating to these subjects. SDG&E's Generation Accounting
15 Department has undertaken internal audits but only related to SCE's inter-owner SONGS-related
16 billings. Further, Sempra Energy Audit Services has undertaken control audits as to how
17 SDG&E Generation Accounting accounts for the SCE billed amounts and processes them
18 through to the Sempra financial statement.

1 **Question No. 23 (Michael De Marco)**

2 Q. Provide the daily energy production for each SONGS unit from December 1,
3 2010, through December 31, 2012, in the following format: in an MS Excel spreadsheet, date in
4 MS Excel date format in the first column, daily energy production of Unit 2 in the second
5 column, and daily energy production of Unit 3 in the third column; with daily energy production
6 entered in consistent units.

7 R. SDG&E, as a non-operating owner, is relying on the information provided by
8 SCE as the operating agent for SONGS to address this question.

1 **Question No. 24** (Michael De Marco)

2 Q. Provide any nuclear notifications and/or cited or non-cited nuclear violations
3 associated with the current outages.

4 R. SDG&E, as a non-operating owner, is relying on the information provided by
5 SCE as the operating agent for SONGS to address this question.

1 **Question No. 25 (Michael De Marco)**

2 Q. Provide a copy of the Confirmatory Action Letter issued to SCE by the NRC on
3 March 27, 2012, concerning the SONGS outage, and SCE's response.

4 R. SDG&E, as a non-operating owner, is relying on the information provided by
5 SCE as the operating agent for SONGS to address this question.

6

1 **III. QUALIFICATIONS**

2 My name is Andrew Scates. My business address is 8315 Century Park Court, San
3 Diego, CA 92123. I am currently employed by SDG&E as a Market Operations Manager. My
4 responsibilities include overseeing a staff of schedulers involved in dispatching the SDG&E
5 bundled load portfolio of supply assets for the benefit of retail electric customers. This includes
6 operational administration of DWR contracts, transacting in the real-time wholesale market and
7 managing scheduling activities in compliance with CAISO requirements. I assumed my current
8 position in January 2011.

9 I previously managed the Electric Fuels Trading desks for SDG&E, primarily managing
10 day ahead and forward procurement of Natural Gas. Prior to joining SDG&E in 2003, my
11 experience included five years as an energy trader/scheduling manager.

12 I hold a Bachelors degree in Business Administration with an emphasis in Finance from
13 California State University, Chico.

14 I have previously testified before the Commission.