

Application No.: 15-06-020

Exhibit No.: _____

Witness: Brad Bouillon

Application of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 G) for Authority to Revise their Curtailment Procedures.

Application 15-06-020

**TESTIMONY OF BRAD BOUILLON
ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR
CORPORATION**

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

Application of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 G) for Authority to Revise their Curtailment Procedures.

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Q. What is your name and by whom are you employed?

A. My name is Brad Bouillon. I am employed by the California Independent System Operator Corporation (CAISO), 250 Outcropping Way, Folsom, California as Director, Regional Operations Initiatives.

Q. Please describe your educational and professional background.

A. I have more than 25 years' of experience in utility operations and have worked with the ISO for over 18 years. During my time at the CAISO, I have also worked as Director, Day-Ahead Operations and Real-Time Operations Support, as well as a manager of the settlements and market quality departments. I have a Bachelor of Science degree in accounting as well as a Master's of Business Administration in management, a Master's of Science degree in computer information systems, and an Advanced Masters' Certificate in applied project management.

Q. What are your job responsibilities?

A. I manage a group of employees responsible for providing specific operational support involving policy, regulatory and regional issues that have potential impact on bulk electric system operations. This team also works with entities in the Western region, including gas pipelines, to coordinate

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1 operational issues involving the transmission system under the CAISO's
2 operational control.

3

4 **Q. What is the purpose of your testimony?**

5 **A.** The purpose of my testimony is to address the following issue set forth in
6 Assigned Commissioner's November 6, 2015 Scoping Memo and Ruling:

7 1. Should natural gas curtailments to electric generation facilities be
8 coordinated with the operational and reliability requirements of the
9 CAISO?

10

11 **Q. What are your recommendations in this proceeding?**

12 **A.** I recommend that the Commission find that SoCalGas and SDG&E should
13 coordinate natural gas curtailments to electric generation facilities with the
14 operational and reliability requirements of the CAISO in order to ensure, to
15 the maximum extent possible, that the CAISO can accommodate these
16 curtailments without undermining electric reliability. In addition, the
17 Commission should authorize SoCalGas and SDG&E to establish more
18 granular operating zones based on gas system constraints for natural gas
19 curtailments to electric generation customers and allow for some greater
20 level of curtailment priority for electric generation under SoCalGas and
21 SDG&E's tariffs. I discuss these recommendations in the following
22 paragraphs.

23

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1 **COORDINATING CURTAILMENT OF NATURAL GAS TO ELECTRIC**
2 **GENERATION WITH THE OPERATIONAL AND RELIABILITY**
3 **REQUIREMENTS OF THE CAISO IS IN THE PUBLIC INTEREST**
4

5 **Q. Please generally describe the CAISO's efforts to coordinate with gas**
6 **pipelines like SoCalGas and SDG&E?**

7
8 **A.** The CAISO has developed a set of coordination practices with gas pipelines
9 such as SoCalGas and SDG&E to assess whether sufficient gas supplies
10 exist for generators serving electric load in the CAISO's balancing authority.
11 These practices include sharing information about conditions on the electric
12 system with gas pipelines and also seeking information from gas pipelines
13 about conditions on the natural gas system.

14
15 By way of example, in the longer-term planning horizon, the CAISO
16 undertakes to evaluate scheduled electric generation and transmission
17 outages with scheduled outages of gas pipeline facilities. As necessary, the
18 CAISO will work with affected generation and transmission owners and
19 operators to assess staging outages as well as identifying infrastructure
20 work that could potentially be cancelled or deferred to ensure electric
21 reliability.

22
23 On a daily basis, the CAISO shares with SoCalGas/SDG&E the total hourly
24 projected gas burn by CAISO participating generators on the
25 SoCalGas/SDG&E systems. This information provides gas pipeline
26 operators with an indicator of gas consumption that will occur each hour
27 over the next operating day by its electric generator customers. The CAISO
28 refers to this report as the day ahead gas-burn report or D+1 gas burn
29 report. The day ahead estimates are based on the CAISO's day-ahead
30 market results that reflect financially binding day-ahead commitments and

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1 the results of the CAISO's residual unit commitment process. The gas burn
2 estimate relies on the heat content of the natural gas provided by the gas
3 company, and the heat rate for each generator provided by the generator's
4 scheduling coordinator. The CAISO also provides gas pipelines with a two
5 day gas burn report or D+2 report that reflects preliminary information about
6 gas consumption that will occur each hour over the next operating day by its
7 electric generator customers two days in advance.

8

9 In addition, the CAISO has issued operating procedure 4120 that explains
10 coordination activities the CAISO undertakes in real-time with gas pipelines
11 during curtailments of gas to electrical generation. Those activities are
12 addressed in the prepared testimony of my colleague Robert Kott.

13

14 **Q. Why should the Commission encourage SoCalGas and SDG&E to**
15 **coordinate natural gas curtailments to electric generation facilities with**
16 **the operational and reliability requirements of the CAISO system?**

17

18 **A.** Natural gas-fired resources play a critical role in maintaining electric system
19 reliability. These resources help balance system supply and demand in
20 real-time and contribute ramping capability to manage the variability of wind
21 and solar resources on the CAISO system. As such, the Commission
22 should encourage gas pipeline companies like SoCalGas and SDG&E to
23 coordinate with the CAISO prior to making gas curtailments to electric
24 generation. This coordination will help maintain both gas and electric
25 reliability to the extent possible.

26

27 **THE COMMISSION SHOULD AUTHORIZE THE USE OF MORE**
28 **GRANULAR OPERATING ZONES BASED ON GAS SYSTEM**
29 **CONSTRAINTS FOR NATURAL GAS CURTAILMENTS TO ELECTRIC**
30 **GENERATION**

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2 **Q. Do SoCalGas and SDG&E use operating zones in connection with**
3 **curtailments to electric generation?**

4 **A.** My understanding is that they do. Currently, the CAISO uses groupings of
5 gas-fired generating units in the D+1 and D+2 gas burn reports provided to
6 SoCalGas and SDG&E. The CAISO developed these groups of generating
7 units based on input from SoCalGas/SDG&E. My understanding is that
8 these groupings correspond with identified gas operating zones on
9 SoCalGas and SDG&E's system.

10

11 **Q. Does the CAISO support SoCalGas and SDG&E's proposal to divide**
12 **their gas transmission system into ten local service zones?**

13 **A.** The CAISO supports efforts to identify more granular groups of generating
14 units based on gas system constraints on SoCalGas and SDG&E's systems.
15 Although the CAISO has not conducted an analysis that supports the
16 proposed local zones, to the extent that SoCalGas and SDG&E can pinpoint
17 curtailment to electric generation necessary to ensure gas system reliability
18 this precision may provide the CAISO with more options to maintain electric
19 grid reliability. A more granular approach may also help SoCalGas/SDG&E
20 and affected participating generators identify the most fuel efficient
21 resources across operating zones in order to help maintain electric reliability
22 while not exacerbating adverse pressure conditions on the gas system.

23

24 **THE COMMISSION SHOULD ALLOW SOCALGAS AND SDG&E TO**
25 **OFFER A GREATER LEVEL OF PRIORITY FOR SOME PERCENTAGE**
26 **OF ELECTRIC GENERATION UNDER THEIR CURTIALMENT**
27 **PRACTICES**

28

29 **Q. Does electric generation currently have any priority under SoCalGas**
30 **and SDG&E's natural gas curtailment priorities?**

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2 A. The CAISO understands that under SoCalGas and SDG&E's tariff electric
3 generation customers are the first natural gas customer curtailed on
4 SoCalGas and SDG&E's system. The CAISO understands SoCalGas and
5 SDG&E are proposing to provide up to 40 percent of electric generation gas
6 customers with a higher priority under their curtailment practices.

7

8 **Q. How does the percentage of electric generation in a gas operating zone**
9 **relate to electric grid reliability?**

10 A. Based on the grouping of generating units the CAISO uses to develop D+1
11 and D+2 gas burn reports, the gas service operating zones of SoCalGas
12 and SDG&E are not the same as CAISO transmission constrained areas
13 (local capacity areas). Operating conditions on the CAISO controlled grid
14 vary based on a number of variables including, but not limited to, demand,
15 resources in service, resources out of service, transmission in service, and
16 transmission out of service. Each year, the CAISO completes a local
17 capacity technical report to identify resource adequacy needs in
18 transmission constrained areas known as local capacity zones during peak
19 N-1 operating conditions. Within those local capacity zones and depending
20 on system conditions, the CAISO may need a percentage of electric
21 generation within these local capacity areas to be available to operate.

22

23 **Q. What percentage of electric generation customers on SoCalGas and**
24 **SDG&E's system should receive increased priority in the context of**
25 **SoCalGas and SDG&E's curtailment priorities?**

26

27 A. The CAISO has not conducted an analysis that specifies what percentage of
28 electric generation customers should receive this priority but SoCalGas and
29 SDG&E's proposal of up to 40 percent is at least directionally appropriate.
30 Operating conditions vary on the electric system because of numerous

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1 conditions, including but not limited to weather, seasons, generation
2 resources and transmission facilities out on maintenance, load levels, and
3 distributed energy resource production. It is possible that the percentage of
4 electric generation on SoCalGas and SDG&E's systems necessary to
5 ensure electric grid reliability might vary at any time based on many of these
6 conditions. However, establishing some priority for electric generation under
7 SoCalGas and SDG&E's curtailment practices recognizes the connection
8 between the gas system and reliable electric operations. All else being
9 equal, adopting a priority for electric generation under SoCalGas and
10 SDG&E's curtailment practices will increase the reliable operation of the
11 electric grid.

12

13 **Q. Does this conclude your testimony?**

14 **A.** Yes, it does.

15