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**PREPARED DIRECT TESTIMONY  
OF GWEN MARELLI**

**I. PURPOSE**

The purpose of my direct testimony on behalf of Southern California Gas Company (SoCalGas) and San Diego Gas & Electric Company (SDG&E) is to explain the importance of the curtailment rules to maintain system reliability and safety and the need to update these rules to reflect changes in the natural gas and electric markets.

**II. THE MARKETPLACE HAS CHANGED**

The energy industry has changed drastically over the last twenty years, and the California marketplace for electric generation in particular has been at the forefront of many of these changes. New challenges on the electric generation supply front include the adoption of state mandates adding renewables to the resource mix and, in 2013, the permanent closure of the San Onofre Nuclear Generating Station (SONGS). On the technology front, air quality regulations in California have eliminated all non-renewables but natural gas as the energy to generate power.

These changes in dispatch, supply, and technology have created challenges for the supporting role that natural gas provides for electricity generation in California. This application for authority to revise our curtailment procedures takes into account the strong relationship of our gas transportation services to gas-fired electric generation in Southern California, and balances the needs of both the utilities and our customers.

**III. BACKGROUND**

SoCalGas' Rule 23 and SDG&E's Gas Rule 14 (collectively, "Curtailment Rules") provide the SoCalGas and SDG&E System Operator (System Operator) with a tool to provide reliable service to higher-priority natural gas customers during times of system stress. If the

1 System Operator determines that forecasted demand cannot be met, the Curtailment Rules  
2 provide a systematic process for taking load off the system by reducing service to lower priority  
3 customers in order to protect service to higher priority customers. The Curtailment Rules are  
4 designed to protect the core and residential customers, allowing for these customers to continue  
5 being served with natural gas as other end use loads are curtailed. The direct testimony of Mr.  
6 Nguyen provides a detailed review of how the current Curtailment Rules work, and some of the  
7 administrative burdens they create. While the main purpose for the Curtailment Rules has not  
8 changed, the rules do not reflect market changes and new nomenclature. The main purpose of  
9 this application is to update these Curtailment Rules to meet the current and future needs of our  
10 customers in a reasonable and fair manner given the changes in the natural gas and electric  
11 markets since our existing Curtailment Rules were first adopted more than twenty years ago.

#### 12 **IV. THE EXISTING CURTAILMENT RULES NEED TO BE UPDATED**

13 The Curtailment Rules have been in place for many years. Mr. Borkovich provides a  
14 discussion of the procedural history regarding the Curtailment Rules, while Mr. Nguyen details  
15 the current curtailment process. The Curtailment Rules have not been substantially updated to  
16 reflect changes in the natural gas and electric marketplace in Southern California. As mentioned  
17 earlier, California has implemented stricter air quality rules, eliminating the burning of  
18 alternative fuels as an option for customers and thereby increasing the reliance on natural gas and  
19 renewables for electric generation. This trend has spread across the United States, as other states  
20 are also implementing stricter rules on air emissions, thereby increasing the demand for natural  
21 gas. The dispatch of electric generation assets serving California has also changed since the  
22 adoption of the Curtailment Rules, with the formation of the California Independent System  
23 Operator (CAISO) and the increased importance of other grid operators. In SoCalGas and

1 | SDG&E’s service territories there are now only three grid operators: CAISO, Los Angeles  
2 | Department of Water & Power (LADWP), and the Imperial Irrigation District (IID), which  
3 | between them control and direct the electric generation dispatch decisions for grid reliability.

4 |         The technology mix of the electric generation resources in Southern California has  
5 | changed as well. In June 2013, SONGS was decommissioned, taking 2,200 MW of electric  
6 | generation capability out of service. New resources have been added to close the electric  
7 | generation gap created by the retirement of SONGS. These new resources include gas-fired  
8 | generation and renewable resources. The growth of renewable resources has created the need for  
9 | additional backup natural gas-fired electric generation units. The curtailment rule redesign  
10 | proposals in this application will update the Curtailment Rules for SoCalGas and SDG&E to  
11 | better reflect the way the electric system and our natural gas transmission system operate today.

12 | **V. NEW CURTAILMENT RULES AND THE RELATIONSHIP TO THE LOW**  
13 | **OFO/EFO APPLICATION**

14 |         On June 11, 2015, in D.15-06-004, the Commission authorized SoCalGas and SDG&E to  
15 | implement new low Operational Flow Order (OFO) and Emergency Flow Order (EFO)  
16 | requirements. These new low OFO and EFO requirements, which will be in effect year-round,  
17 | replace winter balancing rules in place since the early 1990s with a unified, statewide approach  
18 | to dealing with low levels of flowing supplies during times of system stress. The new  
19 | requirements also obviate the need for provisions related to the curtailment of standby  
20 | procurement service.

21 | **VI. SUMMARY OF THE CURTAILMENT UPDATE PROPOSAL**

22 |         SoCalGas and SDG&E propose to divide the natural gas transmission pipeline system  
23 | into ten local service zones, which generally replicates how gas currently flows through the  
24 | system. More detail regarding this proposal, as well as a map and description of the zones is

1 included in the direct testimony of Mr. Bisi. These ten local service zones would allow for a  
2 more precise approach to curtailments than the current system, affecting fewer customers in the  
3 process. As Mr. Bisi explains, more than one local service zone could be curtailed at the same  
4 time, but this will still allow for SoCalGas and SDG&E to limit the impact of the curtailment to  
5 customers in the affected areas, as opposed to the current rules which could potentially impact  
6 customers in locations across the system.

7           Should a curtailment need to be called in one or more local service zones, it would be  
8 effectuated in the following order, as described in more detail in the direct testimony of Mr.

9 Watson:

- 10           Step 1: Dispatchable Electric Generation (EG) not currently operating
- 11           Step 2: Up to 60% of currently dispatched operating EG load
- 12           Step 3: Up to 100%, pro-rata Cogeneration and non-EG noncore usage<sup>1</sup>
- 13           Step 4: Remaining dispatched and operating EG load
- 14           Step 5: Large Core (Priority 2A)
- 15           Step 6: Small Core Nonresidential (Priority 1)
- 16           Step 7: Residential (Priority 1)

17 When the System Operator identifies a problem on the natural gas system, it will also determine  
18 which local service zones are affected and how much load needs to be reduced in the affected  
19 zones. The System Operator will contact the SoCalGas Energy Markets & Capacity Products  
20 department, which will then post details of the curtailment event, including the affected service  
21 zones and curtailments steps, on SoCalGas' Electronic Bulletin Board, Envoy. The System  
22 Operator would first require that the EG load in the affected zones not exceed the load at the time  
23 of the curtailment until the end of the curtailment episode. This would be accomplished by not  
24 allowing EGs not operating at the time of curtailment to turn on unless another with equal or  
25 greater use of natural gas turns off. Next, the System Operator will curtail electric generation

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<sup>1</sup> Electric generation load that is not dispatchable by an electric grid operator and therefore not subject to curtailment in step 2 will be considered non-electric generation noncore load for the purposes of curtailment.

1 load within the affected zones up to 60% of the currently dispatched electric generation  
2 resources. Operational circumstances permitting, the System Operator will contact the affected  
3 grid operators and give them the opportunity to tell us which EG units in the affected local  
4 service zones to curtail. SoCalGas and SDG&E will then use the information provided by the  
5 grid operators to curtail Step 2 customers. If grid operators are not able to provide such  
6 information, or if there is not enough time to contact grid operators prior to implementing a Step  
7 2 curtailment, the default will be pro rata among all currently dispatched EGs within the affected  
8 zones. In any event, the usage of natural gas by the dispatched EG in the zones will not exceed  
9 the volume set by the System Operator until the curtailment order has been lifted.

10         When the limitation to prevent additional EG load and the reduction of 60% of the  
11 currently dispatched EG load is not enough to meet the amount of load reduction called for by  
12 the System Operator, reductions will be made to the cogeneration and non-EG noncore usage in  
13 the affected local service zones, from 1% up to 100% of their Curtailment Baseline Quantity  
14 (CBQ), as defined in the testimony of Mr. Nguyen (i.e., partial to full curtailment). If this action  
15 still does not achieve sufficient load shedding, and operational circumstances permitting, the  
16 System Operator will contact the grid operator in the affected local service zones and request  
17 additional suggestions for reductions of up to the 40% remaining EG resources to come off the  
18 system or be re-dispatched to unaffected local service zones, which SoCalGas and SDG&E will  
19 then effectuate with these customers via a curtailment order. If grid operators are not able to  
20 provide such information, or if there is not enough time to contact grid operators prior to  
21 implementing a Step 4 curtailment, the default will be pro rata among all currently dispatched  
22 EGs within the affected zones. This process is detailed more fully in Mr. Watson's testimony.

1 As mentioned previously, under this proposal there can be more than one local service  
2 zone affected in a given incident. There are also three local service zones, Southern System east  
3 of Moreno, South LA Basin and North LA Basin, which have two grid operators. In this case,  
4 the System Operator will determine which electric generation units are operating from each grid  
5 operator, and determine the usage cut needed from the units controlled by each grid operator.  
6 Time permitting, each of the grid operators would provide input to the System Operator as to  
7 how they would prefer the load taken off or shifted to other electric generation resources outside  
8 of the affected local service zones. SoCalGas and SDG&E will then effectuate the curtailment  
9 order directly with these EG customers in the manner described above. The System Operator  
10 would determine when the system is stabilized, and will then post a notice on Envoy indicating  
11 that the curtailment is lifted.

12 This Curtailment Rules proposal is the best approach to maintain system reliability while  
13 minimizing electrical system impacts given the recent changes in the natural gas and electric  
14 generation marketplaces. It limits curtailments to those zones where operational needs dictate,  
15 helps us more quickly get load off the system when we need it, and provides additional  
16 protection to EG demand necessary for electric grid stability. It balances electric grid stability  
17 and voltage support needs with natural gas system operational needs, and it provides the grid  
18 operators with dispatch flexibility and choices not currently available under our existing  
19 Curtailment Rules.

20 **VII. WHY DISPATCHABLE ELECTRIC GENERATION LOAD SHOULD COME**  
21 **OFF FIRST**

22 Under the proposal, the curtailment order framework places gas fired electric generators  
23 as the first load off the system in a given local service zone when the System Operator identifies  
24 a system operational issue. This is a logical choice because the grid operators have alternatives



1 to producing electricity, including importing the electricity from other, non-affected local service  
2 zones, from outside of Southern California, or from non-natural gas generated sources of  
3 electricity such as renewables or pumped storage. By limiting the first curtailment order to up to  
4 60% of the currently dispatched gas-fired electric generation, 40% of the gas-fired electric  
5 generation load is preserved to provide grid stability and local voltage support. The direct  
6 testimony of Mr. Watson provides additional details regarding the reasoning behind this 60%  
7 limit for currently dispatched gas-fired electric generation.

8 Taking the needs of the electric grid into consideration in this manner during strained  
9 conditions on our natural gas system should reduce the risk of electric blackouts. The System  
10 Operator is responsible for safely maintaining natural gas system reliability and integrity. Gas-  
11 fired electric generation facilities are large natural gas loads that can quickly bring relief and  
12 stability to the natural gas system when curtailed during a time of system stress.

13 **VIII. FIRM AND INTERRUPTIBLE RATE DISTINCTIONS AND CAPACITY OPEN**  
14 **SEASONS ARE NO LONGER NEEDED**

15 SoCalGas and SDG&E currently offer noncore customers firm or interruptible  
16 transportation services on the integrated gas system. In theory, such services allow the utility to  
17 make system investments commensurate with customers' needs and maximize throughput on its  
18 assets to the benefit of ratepayers by using unused firm customer commitments for interruptible  
19 customers. However, the reality is that we're unable to use the unused firm customer capacity,  
20 interrupt interruptible customers, or get customer commitments commensurate with their firm  
21 needs in potentially constrained areas.

22 The current system works only so long as one can effectively curtail interruptible  
23 transportation service when the capacity is utilized by those holding firm transportation service.  
24 In practice, SoCalGas and SDG&E have found that not to be the case. As a policy, SoCalGas

1 and SDG&E take extraordinary measures to avoid customer curtailment of services, even for  
2 customers that have elected interruptible service. Per Rule 41, we even purchase gas supply to  
3 keep interruptible customers online. This policy has resulted in a well-deserved reputation for  
4 reliable service, which clouds the distinction between firm and interruptible service with our  
5 customers.

6           Additionally, firm service in potentially capacity constrained areas obligates the customer  
7 to accept use-or-pay charges for that capacity. Customers with uncertain load patterns, such as  
8 EGs, have been reluctant to take firm service in these areas for economic reasons, even though  
9 the level of service they require is indeed firm.

10           This has led to situations where a curtailment of interruptible service is needed, but that  
11 interruptible demand cannot be shed for a variety of reasons, ranging from an impact to electric  
12 grid stability to localized manufacturing processes. It has also led to difficulties in planning for  
13 capacity and growth on our system. As discussed in Mr. Bisi's testimony, SoCalGas and  
14 SDG&E are to plan their system to provide certain levels of firm service for noncore customers;  
15 however, we are uncertain as to what exactly the market desires for that firm service since a large  
16 percentage of it is masked as interruptible.

17           For these reasons, SoCalGas and SDG&E propose to do away with the firm and  
18 interruptible designations for noncore transportation service, and simply offer a single noncore  
19 transportation service that puts all noncore customers on the same footing. This is, after all,  
20 exactly the way the system is functioning today for all intents and purposes. Furthermore,  
21 PG&E does not differentiate its noncore transportation service between firm and interruptible  
22 categories, and this has not appeared to present any issues for noncore customers on the PG&E  
23 system. SoCalGas and SDG&E anticipate a similar result on our system.

1           Finally, because the whole point of capacity open seasons in potentially capacity  
2 constrained areas is to allocate the available capacity between customers seeking firm  
3 transportation service, with the elimination of this designation, capacity open seasons are by  
4 definition no longer necessary. Mr. Nguyen provides additional details regarding the contract  
5 and rate schedule changes resulting from the elimination of firm and interruptible rate  
6 distinctions and capacity open seasons.

7 **IX.       PROVISIONS FOR PLANNED OR MAINTENANCE OUTAGES**

8           The changes proposed to the Curtailment Rules generally deal with unplanned  
9 curtailments in which operational constraints require us to reduce end use on the system.  
10 SoCalGas and SDG&E will continue to have the ability to curtail service in order to perform  
11 repairs or improvements on the pipeline system that are set forth in our current rules. As with  
12 our existing rules, SoCalGas and SDG&E will have the right to interrupt the receipt or delivery  
13 of gas, but, when doing so, will try to cause a minimum of inconvenience to the customer. The  
14 testimony of Mr. Borkovich describes the proposed tariff changes related to planned or  
15 maintenance-related outages, which primarily consists of eliminating duplicative provisions and  
16 adding language to enable the utilities and customers affected by such curtailments to mutually  
17 agree on a curtailment order different from the prescribed curtailment order.

18           This concludes my prepared direct testimony.

1 **X. QUALIFICATIONS**

2 My name is Gwen Marelli. My business address is 555 West Fifth Street, Los Angeles,  
3 California 90013. I am employed by SoCalGas as Director of Energy Markets and Capacity  
4 Products for SoCalGas and SDG&E.

5 I received a Master of Business Administration degree from Pepperdine University's  
6 Graziadio School of Business and Management in 1990 and a Bachelor of Science degree in  
7 Mechanical Engineering from the University of California, San Diego in 1986. I have been  
8 employed by SoCalGas since 1991. As of August 2014, I have been serving in the role of  
9 Director of Energy Markets and Capacity Products. In this position, I manage service to the  
10 largest gas customers of SoCalGas, specifically large electric generators, Enhanced Oil Recovery  
11 customers, and wholesale customers. I also manage the unbundled storage program, the  
12 California Energy Hub, and the Gas Scheduling Group, I oversee minimum flowing supply  
13 purchases and maintenance-related supply purchases, scheduling and nominations on the  
14 integrated SoCalGas and SDG&E transmission system, SoCalGas' Electronic Bulletin Board,  
15 and SoCalGas and SDG&E's interconnection and operational balancing agreements with  
16 suppliers delivering natural gas into our system. I also manage the Gas Transmission Planning  
17 Department for both utilities.

18 Prior to joining SoCalGas, I held engineering positions at Bechtel Western Power  
19 Company and McDonnell Douglas Corporation.