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SDG&E

DIRECT TESTIMONY OF CAROLINE A. WINN

(POLICY OVERVIEW)

October 6, 2017

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



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**SDG&E DIRECT TESTIMONY OF
CAROLINE A. WINN
(POLICY OVERVIEW)**

I. INTRODUCTION

My name is Caroline Winn and I am the Chief Operating Officer of San Diego Gas & Electric Company (SDG&E or the Company). This exhibit provides overarching policy testimony to generally describe how the proposals and requests included in SDG&E's 2019 General Rate Case (GRC) Application reflect our strong commitment to delivering safe, clean, and reliable electric and natural gas service to customers at reasonable rates.

A. Safety Overview

At SDG&E, safety isn't a goal – it is part of the Company's DNA. Nothing is more important than keeping our employees, contractors and the public safe. We are making strategic investments in culture, technology, system upgrades and community partnerships to enhance the safety of our customers and the communities we serve. Among other things:

- We are making investments in modernizing our infrastructure to improve safety and reliability, such as in the projects below:
 - Cleveland National Forest Project
 - Fire Risk Mitigation Program
 - Pipeline Safety Enhancement Project
 - Pipeline Safety and Reliability Project
 - South Orange County Reliability and Enhancement Project
- By the end of 2017, our gas emergency crews will be operational on a pilot basis with a goal of a 60-minute or less response time 24 hours of the day, 7 days a week.
- We have replaced more than 10,000 wood poles with fire-hardened steel poles to help reduce the risk of wildfires and limit damage to the electrical system when fires occur.
- We have developed and operate the nation's largest energy company-owned weather network, which informs our operations and increases situational awareness for the Company and first responders throughout the region.
- We created tools like the Santa Ana Wild Fire Index and Fire Potential Index that leverage information collected from the weather networks to predict a region's fire potential to help prepare the Company and community for potentially catastrophic wildfires.
- We partnered with computer scientists to build a cutting-edge computer program to model wildfire ignition rates, growth potential and impact allowing us to prioritize

1 fire hardening projects.

- 2 • Since 2010, we have partnered with San Diego County to bring one of the largest
3 firefighting helicopters in the world into our region.
- 4 • Our vegetation management program involves cataloging and maintaining clearances
5 for some 462,000 trees growing near power lines.
- 6 • Desert Star Energy Center is the first power plant in Nevada to receive the OSHA
7 Voluntary Protection Program certification and the Palomar Energy Center recently
8 filed an application for certification in California.
- 9 • Our SAFE San Diego Giving Initiative supports programs and projects that encourage
10 safety and emergency preparedness at home, at local businesses and in our
11 neighborhoods.
- 12 • Our Operational Field Emergency Readiness Program was developed as a flexible,
13 scalable, sustainable and measurable scene management process that is consistent and
14 effective across all SDG&E operational groups and first responder agencies.

15 **B. Clean Energy Overview**

16 We are leaders in clean energy, advancing electric vehicles, and developing and operating
17 a low-carbon energy infrastructure. We execute on opportunities to conserve water, reduce
18 waste and protect environmental resources in our daily operations. Among other things:

- 19 • We are among the nation’s leaders in delivering clean, renewable energy to our
20 customers. Forty-three percent of the electric energy we deliver comes through
21 renewable sources.
- 22 • We developed the Renewable Meter Adaptor, which makes it safer, easier and less
23 expensive for customers to install private rooftop solar, saving our customers tens of
24 thousands of dollars.
- 25 • Our “Fast Track” process makes it easier and faster for customers to install private
26 solar. In 2016, the average customer wait from completion of inspections to
27 connection was three days.
- 28 • With EcoChoice, customers can buy up to 100% of their energy from renewable
29 resources without installing private solar.
- 30 • We are making clean driving more accessible with Power Your Drive, expanding
31 access to electric vehicles charging at businesses, multi-family communities and
32 disadvantaged neighborhoods.
- 33 • Our Desert Star Energy Star Center uses dry-cooling, which requires only 10% of the
34 water used by traditional wet-cooled power plants. Our Palomar Energy Center uses
35 reclaimed water in the electric generation process saving nearly 700 million gallons
36 of fresh water in 2016.
- 37 • Our energy efficiency programs saved more than 342 million kWh in 2016, which

1 equates to taking 50,000 cars off the road.

- 2 • Four million gallons of water are saved each year at SDG&E’s headquarters with our
3 water-wise landscaping.
- 4 • All of our fleet passenger vehicles are alternative fueled.
- 5 • SDG&E’s Energy Innovation Center is one of the first 10 buildings in the world to
6 achieve double LEED Platinum certification.
- 7 • Our Environmental Champions initiative supports non-profit organizations whose
8 programs promote environmental education, community engagement and stewardship
9 in underserved communities throughout our service territory.

10 **C. Reliability Overview**

11 We deliver reliable gas and electric service, which our customers expect and deserve. We are
12 modernizing and redefining how to operate a highly reliable energy grid, from balancing renewable
13 energy to integrating battery storage to how and when customers charge their electric vehicles.

14 Among other things:

- 15 • For 11 straight years, we have received the “Best in the West” award for electric
16 reliability. A typical customer experiences only one power outage every other year.
- 17 • We built the world’s largest lithium ion battery storage facility to enhance regional
18 energy reliability while maximizing renewable energy use.
- 19 • We are enhancing the safety and reliability of energy distribution systems by
20 replacing aging mobilehome park-owned electric and natural gas distribution systems
21 with new utility-owned systems.
- 22 • We utilize smart grid technology that uses real-time information about outages to
23 dispatch crews to the location to quickly correct problems.
- 24 • We have undergrounded more than 60% of our electric distribution system.
- 25 • We have expanded the use of supervisory control and data acquisition throughout the
26 electric distribution system to restore service faster during an outage.
- 27 • We are the first utility in the nation to receive approval from the Federal Aviation
28 Administration to research, test and train flight crews on Unmanned Aircraft Systems,
29 which are now used for surveying activities on fire hardening projects and piloting
30 patrols of our transmission and distribution systems.
- 31 • The Borrego Springs Microgrid is the first of its kind in the area that uses Smart Grid
32 technology including local power generation, energy storage and automated
33 switching to create a more robust, resilient power grid.

34 In summary, we are very proud of what we have achieved and the goals we have set for
35 ourselves, while, at the same time, recognizing that there will be challenges in reaching these goals.

1 In the remainder of this testimony, I first describe in more detail the efforts SDG&E is making
2 to build a strong safety culture and how these efforts fit into the broader context of the Commission's
3 new risk-informed GRC process (Section II). I next provide an overview of SDG&E's GRC request
4 (Section III), then more details on some of the key issues we focus on from an operational perspective
5 (Section IV).

6 **II. THE RISK-INFORMED GRC PROCESS AND SDG&E'S SAFETY CULTURE**

7 **A. The Risk-Informed GRC Process**

8 As further discussed in the testimony of Diana Day and Jamie York (Ex. SDG&E-02), SDG&E
9 has embraced efforts to enhance the safety of our industry through the Commission's new risk-
10 informed GRC framework. SDG&E's risk assessment mitigation phase (RAMP) report presented our
11 top safety risks and proposed plans for the mitigation those risks. This focus on safety and risk
12 mitigation within this new framework are major components of this 2019 GRC. SDG&E and
13 Southern California Gas Company (SoCalGas) are the first utilities in the State to integrate RAMP
14 into a GRC cycle.

15 Our focus on safety is not new. We have invested in safety projects through the history of the
16 Company that contribute to the rate base in place today. In fact, we currently perform many of the
17 activities that we identified in our first-ever RAMP filing, including inspections, pipeline patrol,
18 cathodic protection, pipeline integrity programs, security projects, and records management on the gas
19 side, and wood pole replacements and vegetation management on the electric side.

20 Despite our strong safety record and the comprehensive safety activities that SDG&E already
21 implements, constant vigilance, preparedness, and incremental investment to mitigate our top safety-
22 related RAMP risks are needed to maintain and enhance our safety record in a transparent and
23 performance-driven manner, as the Commission envisioned when establishing the new risk-informed
24 GRC framework. While one of the Commission's objectives is for utilities to evolve from
25 qualitatively identifying risks and risk mitigation to a quantitative manner, we are still at a nascent
26 stage in this iterative process. However, the RAMP-to-GRC integration process is not a theoretical or
27 academic exercise. SDG&E is committed to getting this process right to inform the decisions made
28 from an operational perspective and for the benefit of customers.

29 **B. SDG&E's Safety Culture**

30 We view safety as a three-pronged effort that requires vigilant attention to: (1) employee
31 safety, (2) customer/public safety, and (3) the safety of our gas and electric delivery systems. In their
32 testimony, Diana Day (Ex. SDG&E-02) and Tashonda Taylor (Ex. SDG&E-30) describe in greater

1 detail what SDG&E is doing to build a strong safety culture, but here are a few examples that I would
2 like to highlight:

- 3 • Our safety focus isn't something that is left to our front-line employees to champion.
4 At SDG&E, it starts at the top. The first agenda item at every utility board meeting,
5 senior management meeting and weekly operating council meeting is a safety
6 discussion led by one of our operating officers.
- 7 • Beyond active board and senior management oversight, the Company is organized to
8 reflect safety as a core value. Just one example of this additional oversight is our
9 Executive Safety Council. Comprised of top leadership, the council meets quarterly
10 to engage directly with front-line employees and supervisors to listen and reinforce
11 key safety tenets and have an open dialogue on safety issues, performance and
12 culture.
- 13 • We employ the Environmental & Safety Compliance Management Program
14 (ESCMP), an environmental, health and safety management system to plan, set
15 priorities, inspect, educate, train, and monitor the effectiveness of environmental,
16 health and safety activities in accordance with the internationally accepted standard,
17 ISO 14001.
- 18 • We expect our workforce to take responsibility for safe and healthy behavior to create
19 an incident-free workplace. Sixty local safety committees within Company
20 departments and throughout our districts provide leadership in maintaining our safety
21 culture. These committees are made up of represented workforce and management
22 and meet monthly to engage in and address potential safety issues and solutions
23 around our operations.
- 24 • For the last 15 years, we've hosted an Annual Safety Congress to provide a forum for
25 safety committee members and safety leaders to share and exchange information and
26 ideas through networking and workshops. Safety stand-outs who embrace the safety
27 culture and demonstrate safety leadership are recognized with individual and team
28 safety awards.
- 29 • We are also striving to improve processes and procedures that enhance employee and
30 public safety.
- 31 • SDG&E employees, regardless of rank or title, are given the authority to "stop a job"
32 at any time if they spot a safety hazard, and are encouraged to raise a red flag
33 whenever they feel it is needed.
- 34 • We employ Behavior Based Safety (BBS) programs that use a proactive approach to
35 safety and health management, focusing on principles that recognize at-risk behaviors
36 as a frequent cause of both minor and serious injuries. BBS is intended to reduce the
37 occurrence of at-risk behaviors by modifying an individuals' actions and/or behaviors
38 through observation, feedback and positive interventions aimed at developing safe
39 work habits.
- 40 • We have always valued our constructive relationship with our union leadership and

1 their cooperation in managing personnel in continuing to improve our safety
2 programs. In partnership with the International Brotherhood of Electrical Workers
3 (IBEW) (Local 465), we developed Grassroots Safety Culture teams to further instill
4 safety ownership and accountability on a peer-to-peer basis. Our front-line workers
5 and union leadership deserve a ton of credit for enhancing the safety culture at the
6 company.

- 7 • We partnered with the IBEW to revise our electric overhead safety work rules and
8 practices, which are now the most stringent of the State's investor-owned utilities.
- 9 • With the IBEW, we are implementing a new Code of Excellence initiative with the
10 SDG&E field workforce to promote greater union and management collaboration and
11 teamwork, safety focus and operational excellence.
- 12 • We are partnering on safety initiatives with our contractors, who are in many ways an
13 extension of our workforce. Since 2012, we've held an annual Contractor Safety
14 Summit to provide a forum for safety leaders from the contractor workforces to share
15 and exchange information, ideas and safety best practices with our leadership team.
16 This is in addition to the quarterly meetings held with contractor leadership.
- 17 • We also work with an external consulting company to ensure contractors are
18 thoroughly screened, vetted and evaluated, and performance is closely monitored.
19 They facilitate collection of self-reported contractor safety information in a
20 centralized database, which helps us review contractors to ensure they meet SDG&E
21 standards.
- 22 • Earlier this year, we became members of the Gold Shovel Standard (GSS), a
23 nonprofit organization committed to public safety by driving consistent contractor
24 participation in preventing excavation dig-ins. Any contractor doing excavation work
25 for SDG&E is now required to register for the GSS program to be eligible for
26 SDG&E contracts. Our hope is that this program will make a positive impact by
27 encouraging contractors to adopt safe excavation processes.

28 In 2016, our efforts to maintain a strong safety culture were subjected to an independent
29 assessment by the National Safety Council, a credible and independent third party non-profit
30 organization and a leading advocate for safety. The evaluation was based on an employee perceptions
31 study and resulted in a report indicating that SDG&E's safety culture compares very favorably to
32 those of peer utilities and companies.¹ Indeed, in comparison to over 580 companies, SDG&E's
33 overall safety barometer score was in the 85th percentile (top 15% of companies surveyed). This is a
34 high score, but it is not as good as 2013, so this has made us all the more determined to double down
35 on our safety efforts, as described above. For example, as explained in the testimony of Tashonda

¹ 2016 Safety Barometer Survey Results, San Diego Gas & Electric Company, National Safety Council.

1 Taylor (Ex. SDG&E-30), in response to the survey results, SDG&E teams created action plans for
2 making safety improvements.

3 **III. OVERVIEW OF GRC REQUEST**

4 Our GRC request reflects SDG&E's forecast of revenues needed to continue delivering safe
5 and reliable gas and electric service at reasonable rates and enhance the integrity of our system, while
6 meeting the new challenges we expect to face in the test and post-test years and meeting State and
7 federal mandated policies and programs.

8 In this section of my testimony, I summarize our test year 2019 revenue requirement request
9 and bill impacts, our RAMP GRC request, our Fueling Our Future efficiency initiative and our post-
10 test year ratemaking proposal.

11 **A. TY 2019 Revenue Requirement**

12 SDG&E's GRC Application requests that the Commission authorize a combined \$2.199 billion
13 revenue requirement (\$433 million gas and \$1.766 billion electric), to be effective January 1, 2019. If
14 approved, this revenue requirement would be an increase of \$218 million over the as-expected
15 authorized 2018 revenue requirement.

16 When the impact of commodity costs and other ratemaking items such as regulatory account
17 balances are included, these increases result in a 2019 system average electric rate revenue increase of
18 \$208 million (+5.0%) and a system average gas rate revenue increase of \$112 million (or +18.1%),
19 when compared to the as-expected authorized revenue requirement for 2018.

20 **B. Bill Impacts**

21 If the 2019 revenue requirement identified above is approved by the Commission, a typical
22 electric residential customer² will see a monthly bill increase of \$6.13 (+4.8%), as compared to as-
23 expected authorized rates for 2018. For gas customers, a typical residential customer³ will see a
24 monthly bill increase of \$7.57 (or +21.1%), as compared to as-expected authorized rates for 2018. On
25 a combined electric and gas bill, a typical residential customer will see a monthly bill increase of
26 \$13.70 (+8.4%), as compared to as-expected authorized rates for 2018.

27 **C. RAMP GRC Request**

28 As stated above, SDG&E and SoCalGas are the first utilities to formally incorporate a risk-
29 informed framework into their respective GRC showings. Of SDG&E's \$218 million total 2019 GRC
30 increase, about 39% (\$84 million) is directly related to addressing SDG&E's top RAMP safety risks.

² Inland customer usage of 500 kWh.

³ 25 therms per month.

1 Of the RAMP costs, about \$34 million is capital related (~41%), and \$50 million is O&M expense
2 (~59%). Past safety projects are part of the total rate base. Therefore, the RAMP incremental
3 spending (\$84 million) identified in this Application focuses on this GRC cycle, test year 2019, and
4 the revenue requirement increase that is related to RAMP. SDG&E's witnesses will address in greater
5 detail how the RAMP filings have been incorporated into their GRC requests. A few examples of
6 RAMP areas of focus within GRC testimony include mitigating wildfire risks under the Fire Risk
7 Mitigation program (FiRM) and mitigating aging infrastructure and asset failures outside of the fire
8 threat zone via the Pole Risk Mitigation and Engineering program (PRiME) (Alan Colton testimony,
9 Ex. SDG&E-14), mitigating medium pressure pipeline failure risk (Gina Orozco-Mejia, Ex. SDG&E-
10 04, and Maria Martinez, Ex. SDG&E-11), and cross-cutting risks that are addressed by multiple
11 witness areas to address Employee, Contractor, Customer and Public Safety.

12 **D. Fueling Our Future, Operational Efficiencies and Reasonableness of Rates**

13 At SDG&E, we work to instill in employees a mindset of continuous improvement in which
14 they constantly are seeking out new and better ways of doing business to increase the efficiency of
15 core operations and customer service. For example, we train employees in Lean Six Sigma methods, a
16 data-driven approach to improve business processes using statistical analysis. Employees then are
17 encouraged to apply lessons learned with their teams and in their work, whether in the field,
18 collections, the customer contact center, or elsewhere.

19 It is in this context of continuous improvement that the Company launched the Fueling Our
20 Future (FOF) initiative in May 2016 to identify and implement efficient operations improvements.
21 The effort resulted in savings that reduced SDG&E's revenue requirement request from what it
22 otherwise would have been and is discussed in more detail in the testimony of Hal Snyder and Randall
23 Clark (Ex. SCG-3/SDG&E-03) and other witnesses.

24 While SDG&E is continuously looking for ways in which to serve our customers more
25 efficiently, at the same time, the Company is complying with an ever-increasing number of State and
26 federal mandates and responding to heightened customer expectations. In addition, while the
27 Commission has made significant progress in residential rate reform, more work is necessary. All of
28 these issues contribute to rate pressures, but SDG&E will continue to focus on delivering safe and
29 reliable service to our customers at reasonable rates.

30 **E. Post-Test Year Ratemaking**

31 SDG&E proposes a post-test year (PTY) ratemaking mechanism to adjust the authorized
32 revenue requirement in the post-test years by applying separate attrition adjustments for operating and

1 maintenance (O&M) expenses (including a separate attrition adjustment for medical expenses),
2 capital-related costs, and exogenous cost changes. SDG&E believes that it is reasonable to apply
3 separate attrition adjustments for different types of costs because these costs have different drivers. As
4 explained in more detail in the testimony of Ken Deremer (Ex. SDG&E-43), such an approach also is
5 not unlike what Pacific Gas and Electric is using. Adoption of SDG&E's proposal will more
6 accurately reflect SDG&E's actual costs between rate cases and thus provide SDG&E with sufficient
7 revenues during the PTY period to continue providing safe and reliable service to its customers, while
8 providing a fair opportunity for SDG&E to earn the authorized rate of return.

9 SDG&E also supports the adoption of a four-year GRC term because it would free up scarce
10 resources needed to litigate a GRC every three years. Moving to a four-year GRC cycle would give
11 both the CPUC and the utilities more flexibility to manage additional responsibilities created by the
12 integrated Safety Model Assessment Proceeding (S-MAP), RAMP, and GRC proceedings. The four-
13 year term would reduce the administrative burden on all parties and allow the utility to more
14 effectively operate its business while implementing new risk mitigation and accountability structures,
15 processes, and reporting requirements. For more details on SDG&E's PTY proposals, see Mr.
16 Deremer's testimony cited above.

17 **IV. OPERATIONAL FOCUS**

18 The following is provided as a general description, from a high-level policy perspective, of
19 SDG&E's operational focus as it relates to safety, reliability, customer service, environmental
20 stewardship, and investing in our workforce. More details are provided in the testimony and
21 workpapers of individual witnesses.

22 **A. Safety**

23 Although our continued focus on safety is embraced and supported by all organizations within
24 our Company, there are several areas warranting special attention, including gas and electric
25 operations, which are outlined below.

26 **1. Gas Operations**

27 SDG&E has a strong track record in employee and public gas safety that reflects the strong
28 safety culture that is embedded in our Company culture at every level. While we are proud of our
29 safety record, we know there are always opportunities to enhance the overall safety of our pipeline
30 system and infrastructure. To maintain our strong track record into the future, we cannot become
31 complacent. We must always strive to improve by applying forward-looking safety strategies, and
32 challenge ourselves to be even more diligent in maintaining the safety of our natural gas system. Our

1 aim is to continuously drive process improvements throughout our pipeline system and operations, to
2 meet or exceed state and federal safety regulations, and to stay abreast of industry leading practices.

3 In this GRC, we seek authorized funding for the maintenance, operation, and replacement of
4 gas infrastructure necessary to maintain our commitment in this area and for several important
5 upgrades and enhancements to the system and operating practices. For example, as discussed in the
6 Gas Distribution testimony of Gina Orozco-Mejia (Ex. SDG&E-04), we propose funding to continue
7 to survey our gas distribution system for leaks, with some major enhancements such as: changing the
8 inspection cycle for pre-1986 Aldyl-A plastic pipe from the current five-year survey cycle to an annual
9 cycle; installing additional barricades for the protection of meter installations; and enhancing cathodic-
10 protection stations for corrosion prevention of steel pipelines. SDG&E also is employing new
11 technology in its mapping system to assess gas distribution infrastructure to meet leak survey
12 compliance requirements and is improving its recordkeeping systems and methods to establish
13 verifiable, traceable and complete records for all high-pressure pipeline facilities. Our Gas
14 Distribution request also includes funding to continue to: repair identified main and service line leaks;
15 locate and mark facilities to avoid third party damage; and replace or abandon pipeline facilities (e.g.,
16 mains, services, regulating and metering equipment, cathodic protection systems, and electronic
17 equipment) that have reached the end of their useful lives or are experiencing deterioration. SDG&E
18 must also conduct gas line relocations for various municipal and CalTrans road and highway re-routes
19 and expansions, such as the 2016 Mid-Coast Corridor trolley expansion.

20 As discussed in the Pipeline Integrity for Transmission and Distribution testimony of Maria
21 Martinez (Ex. SDG&E-11), SDG&E continues to further its safety goals by retrofitting transmission
22 pipelines with in-line inspection (ILI) technology, commonly known as “pigging.” Sixty-four percent
23 of the integrated SoCalGas/SDG&E gas transmission system currently is capable of being assessed
24 using in-line inspection tools. Although the cost of retrofitting a pipeline to allow for in-line
25 inspection may be higher than other alternative assessment methods, the information obtained through
26 an in-line inspection about the condition of the pipeline is extensive and can aid in analyzing time
27 dependent threats such as external and internal corrosion. We propose to continue to increase our
28 ability to inspect transmission pipelines using in-line inspection methods, even in non-High
29 Consequence Areas that are not subject to the prescriptive assessment requirements established for
30 transmission pipelines under federal and state regulations. Efforts such as this to exceed minimum
31 system safety requirements demonstrate our strong commitment to continuous improvement and
32 enhanced emphasis on proactive measures that are intended to enhance the safety of our natural gas

1 transmission and distribution systems for our customers and the communities we serve. SDG&E's
2 gas operations is increasing its proactive action for employee training, qualification and work quality.
3 As explained in Ms. Orozco-Mejia's testimony, an integral component of overall workforce
4 proficiency is the Operator Qualification program. Operator Qualification compliance is closely
5 monitored and employees are trained whenever significant changes occur in a work task or as required
6 per SDG&E's Gas Standards, per the recently revised CPUC General Order 112-F and 49 CFR Part
7 192. SDG&E forecasts several incremental activities to support this important safety aspect including
8 new computer based training systems, incremental employee training, additional instructors, and
9 additional field inspection personnel.

10 As discussed in the Gas Transmission testimony of Beth Musich (Ex. SDG&E-06) and the Gas
11 Engineering testimony of Deanna Haines (Ex. SDG&E-09), we propose funding consistent with
12 historic levels to perform annual leak surveys of all SDG&E transmission pipeline facilities, conduct
13 surveillance of third-party construction activities around the vicinity of buried pipeline facilities,
14 perform locate-and-mark services to identify the location of buried facilities, proactively replace or
15 abandon aging pipeline facilities, conduct engineering studies and update standards and training
16 materials. These types of day-to-day system maintenance and replacement activities are essential to
17 achieving the continued safe operation of our gas distribution and transmission facilities.

18 **2. Electric Operations**

19 Public safety also is a key driver in our approach to electric operations, as demonstrated by our
20 strong track record in this area. Fire risk continues to be a major concern and is particularly
21 heightened in areas of our service territory characterized by inland valleys and mountainous areas with
22 smaller communities, lower density development and significant wildland areas. The risk of
23 catastrophic wildfires in our service territory has intensified in recent years, as exemplified by the
24 2003 and 2007 wildfires, which burned large swaths of our service territory. The effects of the
25 drought California has experienced (which leads to dry fuel conditions) coupled with climate change
26 means that fire season is getting longer and is a more serious risk than it once was, both for our
27 customers and our system.

28 Accordingly, in this GRC SDG&E not only continues but has increased its focus on
29 aggressively seeking ways to improve the operations and maintenance of the electric distribution
30 system in high fire threat zone areas. As described in the Electric Distribution – Capital testimony of
31 Alan Colton (Ex. SDG&E-14) and the Electric Distribution – O&M testimony of Will Speer (Ex.
32 SDG&E-15), SDG&E is proposing to make additional significant capital investments to further reduce

1 wildfire risk and enhance safety by continuing efforts to harden overhead distribution infrastructure in
2 the backcountry, continuing our wood-to-steel pole replacement program, enhancing inspections
3 above and beyond compliance requirements, modifying our operations during high risk periods, and
4 undergrounding overhead lines in strategic locations. Two major programs address this risk. The
5 FiRM directly addresses the electric distribution components of poles, conductors and equipment in
6 the fire threat zone. The PRiME program addresses pole integrity over the entire service territory
7 using advanced technology such as Light Detection and Ranging (LiDAR) survey data, 3-dimensional
8 analytical software and the use of unmanned aircraft system (UAS), commonly known as drones. In
9 addition, SDG&E is improving our knowledge and situational awareness of the wind and weather
10 conditions in our service territory. In order to continue enhancing the safety of the community and to
11 maintain the integrity of the electric distribution system, SDG&E seeks the resources necessary to
12 meet both these fire-related and pole integrity challenges and to implement steps that will result in
13 further progress toward achieving a more fire-safe system, which is a common goal shared by
14 employees, regulators, customers and the public at large.

15 **B. Reliability**

16 SDG&E is an industry leader in delivering reliable power to our customers, and the continued
17 reliability of the gas and electric systems is a primary focus of our operations. As described below,
18 SDG&E's forecasted activities in this area are based on our experience with maintaining and/or
19 modernizing infrastructure, leveraging technology, and planning for the region's future energy needs.

20 **1. Gas Operations**

21 SDG&E is committed to providing safe and reliable natural gas service at a reasonable cost. In
22 order to maintain our strong reliability track record, SDG&E proposes O&M and Capital spending
23 consistent with historic trends to help mitigate the risk of customer outages or loss of service. As
24 discussed in the testimony of Gina Orozco-Mejia (Ex. SDG&E-04), areas of routine spending that
25 affect reliability in Gas Distribution include: locate and mark; leak survey; leak repairs; measurement
26 and regulation; main, service, and regulator station replacements; and pressure betterment
27 installations. Locating and marking gas facilities is necessary to mitigate third party dig-ins that may
28 interrupt gas service to our customers. The RAMP process has identified third-party dig-ins as one of
29 the top risks to the gas system. Through leak surveys, leaks are identified so that they can be
30 classified and scheduled for leak repair before they affect the safety or reliability of the main or
31 service line. Measurement and regulation activities include inspecting and maintaining measurement
32 and regulation equipment, and repairing or replacing the equipment, as necessary. Through pipeline

1 and regulator station replacements, infrastructure that is aging, corroding, or defective is proactively
2 replaced before it can impact gas reliability. Pressure betterment installations are performed when
3 there is insufficient capacity or pressure to meet load growth, in order to maintain system reliability
4 and service to all customers. Similar system maintenance and pipeline replacement activities are
5 described in the Gas Transmission testimony of Beth Musich (Ex. SDG&E-06) and the Gas
6 Engineering testimony of Deanna Haines (Ex. SDG&E-09).

7 To improve the reliability of the SDG&E gas system, SDG&E is proposing to replace (in
8 phases over several years) the Moreno gas compressor station. As described in the joint testimony of
9 Beth Musich and Mike Bermel (Ex. SDG&E-07), the Moreno gas compressor station is an important
10 link in the gas transmission supply chain to the San Diego area. The Moreno gas compressor station
11 became operational in 1955 and was expanded in the 1970's and 1990's, but many of the major
12 replacement components are no longer available. Moreno's continued, uninterrupted operation is key
13 to the reliable delivery of natural gas to homes, businesses and industries in the SDG&E service
14 territory, as well as to the natural-gas fired power plants that provide electricity to the area.
15 Replacement of the aged compressors and drive systems will reduce the risk of a major equipment
16 failure that could prove detrimental to reliable delivery of gas to SDG&E customers.

17 **2. Electric Operations**

18 SDG&E has been recognized as being an industry leader for its very reliable electric system.
19 In addition to the "Best in the West" awards for eleven consecutive years since 2005, SDG&E also
20 received the PA Consulting Group national ReliabilityOne award in 2014, and was recognized in 2015
21 for Outstanding Response to a Major Event. SDG&E also has received awards for achievements in
22 the area of vegetation management, an area that has a significant impact on reliability of the overhead
23 electric system, and has been awarded the "Tree Line USA" award from the Arbor Day Foundation for
24 15 consecutive years. This award recognizes excellence in the categories of quality tree care, annual
25 worker training, tree planting, and public education.

26 In order to fulfill our strong commitment to delivering safe and reliable power to our
27 customers, SDG&E must continue to adapt to California's changing energy landscape. The electric
28 industry is undergoing changes unlike any period in its history, including a significant expansion of
29 distributed generation and growth in the use of electric vehicles. SDG&E is striving to meet this
30 challenge by investing in technologies that advance clean energy for our customers and the
31 environment. SDG&E has been working to make the electrical grid more reliable and more able to
32 incorporate large-scale renewables, plug-in electric vehicles, and rooftop solar panels by employing

1 energy storage and other technologies. Advanced technologies will support system stability by
2 offsetting the intermittency of large-scale wind and solar through large scale battery storage
3 installations, and will help us operate our electric system more safely, reliably and efficiently with
4 fewer greenhouse gas (GHG) emissions.

5 SDG&E also is preparing to accommodate Distributed Energy Resources (DER), most
6 commonly in the form of “rooftop solar” installations. As discussed in the testimony of Alan
7 Dulgeroff (Ex. SDG&E-13), SDG&E is setting the stage for the enablement of increased DER
8 installations throughout its service territory. SDG&E was the first California investor-owned utility to
9 reach its Net Energy Metering (NEM) 1.0 cap, which occurred in 2016. At the end of 2010, SDG&E
10 had approximately 11,700 DER installations throughout its system, installed at a rate of just over
11 3,000 per year. In 2016, SDG&E enabled 30,000 installations through a combination of a streamlined
12 on-line interconnection process and innovative technology, such as the Renewable Meter Adaptor, a
13 tenfold increase from 2010. SDG&E realized over 110,000 interconnections by July 2017, with a
14 nameplate capacity of approximately 750 MW. Those 110,000 installations represent approximately 1
15 in every 13 households in SDG&E’s service territory. As the price of rooftop solar systems continue
16 to fall, it is anticipated these installations will grow not in a few discrete locations, but will proliferate
17 throughout the service territory. SDG&E is seeking funding for the necessary instrumentation and
18 control systems that will enable the safe operation of these new DER sources within the distribution
19 grid, protecting utility workers, communications workers and the public against the increased
20 occurrence of two-way power flows on what were circuits originally designed for point-source one-
21 way power distribution.

22 **C. Customer Service**

23 Providing value-added services to our customers is our goal. SDG&E understands that for
24 customers to make wise decisions regarding their energy use they must have access to information
25 about their energy consumption, energy prices, and tools to manage and control their energy use.
26 SDG&E’s customers encompass a wide range of market segments with varying levels of market
27 knowledge understanding and communications needs. We make it a priority to actively engage
28 customers by listening to them, gathering and incorporating their feedback, modifying processes, and
29 delivering services, innovative solutions, and tools to meet individual customer needs. As reflected in
30 the Customer Service testimony of Jerry Stewart (Ex. SDG&E-18) and Lisa Davidson (Ex. SDG&E-
31 19), our goal is to become our customers’ “Trusted Energy Advisor” by offering integrated and
32 personalized solutions, giving them more choice, convenience, and control over how they interact with

1 us and manage their energy use, while continuing to maintain safe, efficient, effective, and reliable
2 customer service.

3 SDG&E also is dedicated to providing customers with more choices in their energy pricing
4 plans and program options that will allow them to select the best rate that meets their lifestyle or
5 business needs. SDG&E's business customers are now on time-varying pricing plans, and we have
6 several proposals targeted at preparing residential customers for future phases of rate reform and the
7 transition to default time-of-use (TOU) pricing plans. Our overarching goal is to increase residential
8 customers' awareness, understanding, and engagement with rate options and the energy management
9 tools and behaviors that can help better manage electricity use and thereby increase adoption and
10 retention of customers on TOU. SDG&E also has proposals to support the expected growth in interval
11 billed accounts that will result from residential rate reform and the continued growth in NEM
12 customers noted above.

13 SDG&E supports State policy goals to reduce GHG emissions through clean transportation
14 initiatives. These initiatives are critically important because in San Diego, over 50% of GHG
15 emissions are attributable to the transportation sector. Our Clean Transportation team provides
16 customers with electric transportation information on metering, rates, demand response programs,
17 charging equipment, installation, safety, reliability, and the benefits of off-peak charging. In addition,
18 this team evaluates all aspects and activities of transportation electrification, such as determining its
19 value and potential, developing enabling policies and business processes around transportation
20 electrification and supporting enabling technology development.

21 Information technology also has revolutionized customer service in the energy industry.
22 Starting with the deployment of Smart Meters, SDG&E customers have access to information about
23 how and when they use energy, what contributes to their energy bill, and, most importantly, how they
24 can better manage and control their energy use to meet their needs. As a result, SDG&E has been
25 connecting its customers to an array of smart energy solutions – tools, programs and services – that
26 will help them better understand and control how they are using energy and assist them in creating
27 their own energy plan to ultimately save them money and energy. Moreover, through multiple
28 communication channels (from mobile applications (apps) to social media and web-based technology),
29 SDG&E is responding to customers' expectations for more convenient interactions through modern
30 communication channels. As described by Ms. Davidson (Ex. SDG&E-19), there is a steady increase
31 in the use of our digital channels by our customers to interact with SDG&E, and we are continuously
32 enhancing these channels to streamline the experience and enhance the available offerings.

1 SDG&E also is investing in required upgrades and enhancements to its smart meter network.
2 Due to Verizon and AT&T discontinuing support of 3G communication devices, SDG&E must
3 replace approximately 2,800 cell relay devices that provide routing functions for over 2.2 million gas
4 and electric meters. SDG&E is seeking to install new cell relays with enhanced capabilities not
5 specifically related to metering, offering broadened opportunities for greater visibility and control of
6 our electric and gas distribution systems, in addition to exploring piggybacking opportunities with
7 water agencies.

8 Pursuant to resolution G-3500, approved in July 2015, SDG&E also launched a pilot program
9 in April 2016 offering customers the option to purchase parts and service needed for repairs related to
10 their gas appliances and will be expanding this pilot territory-wide.

11 SDG&E also takes customer privacy very seriously and has established both an Office of
12 Customer Privacy and has designated the Vice President of Customer Services to be SDG&E's Chief
13 Customer Privacy Officer. We have worked diligently to engrain customer privacy into our system
14 designs, relationships with third parties, business controls, and day-to-day work habits. Employees
15 have been trained and are reminded of the importance of customer privacy and their role in ensuring
16 the privacy of our customers' information. We also are enhancing our systems and processes to make
17 it easier for customers to securely share their energy data with third parties.

18 **D. Environmental Stewardship**

19 Investing in technologies that advance clean energy for our customers and the environment is
20 one of SDG&E's primary goals. In addition to playing a key role in making it easier for our customers
21 to own electric vehicles and to install private rooftop solar systems in San Diego, SDG&E is
22 committed to being a responsible environmental steward and operating in compliance with all
23 applicable environmental laws and regulations. According to the U.S. Forest Service, the San Diego
24 region is a "hotspot" for biodiversity and threatened and endangered species management, and the
25 region has more rare, threatened, and endangered species than any comparable land area in the
26 continental United States. As such, SDG&E complies with more than 400 federal, state, and local
27 environmental laws protecting natural resources (such as threatened or endangered animals and
28 plants), air quality, water quality, cultural resources, waste and hazardous materials. As described in
29 the Environmental testimony of Nancy Clancy (Ex. SDG&E-23), SDG&E subjects its construction,
30 operations and maintenance activities and projects that may impact the environment to a multi-
31 disciplinary environmental review to ensure compliance.

1 SDG&E remains committed to cost-efficient initiatives and efforts that avoid or minimize our
2 environmental impacts, including in such areas as greenhouse gas emissions, water usage reduction,
3 greening the supply chain, and promoting the use of alternative fuel vehicles, including electric
4 vehicles, through our support of grid-integrated charging.

5 **E. Investing in Our Workforce**

6 Vital to SDG&E's efforts to continue to maintain and expand our safety achievements is
7 adequate funding for employee training, compensation and benefits and human resources. It takes a
8 highly-skilled workforce to execute our ambitious safety expectations and efforts.

9 Safety is rooted in all phases of electric and gas operations training. Maintaining a skilled,
10 qualified, dedicated and diverse workforce is critical to SDG&E's continued success. It is through the
11 efforts of these employees that SDG&E can continue to deliver safe and reliable service to customers
12 and maintain the integrity of its infrastructure at reasonable cost.

13 SDG&E is experiencing increased pressures associated with maintaining a highly-trained and
14 qualified workforce. Increased turnover, due primarily to retirements and employee movement as a
15 result of promotions and transfers, continues to pose challenges to SDG&E, particularly in the areas of
16 knowledge transfer, skills development, and overall proficiency of the replacement workforce.

17 The Company is taking appropriate measures to maintain its highly-skilled workforce,
18 recognizing that safety and system reliability cannot be sacrificed during times of employee transition.
19 As new and less experienced employees step in to replace highly-skilled employees, SDG&E is
20 conscientiously training and mentoring them, giving them on-the-job experiences, and providing
21 greater levels of supervision and quality assurance to instill a continued focus on proficiency and
22 safety.

23 Finally, SDG&E must attract and retain the best possible talent by offering a competitive total
24 compensation package including pension and post-retirement health benefits. A new pension funding
25 policy is appropriate so that the interest of either retirement system beneficiaries or the future
26 generation of ratepayers will not be jeopardized by underfunding challenges posed by previous
27 policies, as explained in the Pension and Post-Retirement Benefits testimony of Debbie Robinson (Ex.
28 SDG&E-29).

29 **V. CONCLUSION**

30 SDG&E remains strongly committed to delivering safe and reliable energy, through a strong
31 safety culture. We are dedicated to taking steps to more systemically demonstrate our continued focus
32 on risk management and to investing in technologies that advance clean energy for our customers and

1 the environment. However, we must have the proper resources necessary to meet the needs of the
2 communities we serve. With the proper resources, we will continue to take steps to enhance our
3 customer service, including using technology to bring greater choice and empowerment to our
4 customers and greater operational efficiency to our business. We will also continue to take the steps
5 necessary to successfully procure renewable energy from a wide variety of sources and will integrate
6 these resources, many of which are intermittent resources, into our grid in a manner that maintains
7 safety and reliability. We will also continue our efforts to be good stewards of the environment by
8 reducing environmental impacts and fully complying with all environmental laws and regulations.

9 This concludes my prepared direct testimony.
10

1 **VI. WITNESS QUALIFICATIONS**

2 I am the Chief Operating Officer for SDG&E. Since joining the company in 1986 as an
3 associate engineer, I have held a number of leadership positions at SDG&E and SoCalGas, including
4 various positions within the electric transmission and distribution engineering and operations areas.
5 Prior to my current position, I was the Chief Energy Delivery Officer and the Chief Energy Supply
6 Officer. Before that, I was the Vice President Customer Services and Chief Customer Privacy
7 Officer. Previously, I was director of supply chain management for both SDG&E and SoCalGas,
8 following my role as director of transmission and distribution asset management where I was
9 responsible for distribution planning, electric reliability, compliance management and information
10 technology management.

11 I have a bachelor's degree in electrical engineering from California State University
12 Sacramento and am registered as a professional engineer in the state of California. I serve on the UC
13 Davis Energy Efficiency Board of Advisors. In addition, I serve on the Board of Directors of the San
14 Diego Regional Chamber of Commerce (as well as its Management Council), the Western Energy
15 Institute and Veloz, a non-profit organization to advance electric cars. I have previously testified
16 before the Commission.

Appendix A

Glossary of Terms

BBS	Behavior Based Safety
DER	Distributed Energy Resources
ESCMP	Environmental & Safety Compliance Management Program
FiRM	Fire Risk Mitigation
FOF	Fueling Our Future
GHG	Greenhouse Gas
GRC	General Rate Case
GSS	Gold Shovel Standard
ILI	In-Line Inspection
LiDAR	Light Detection and Ranging
NEM	Net Energy Metering
O&M	Operating and Maintenance
PRiME	Pole Risk Mitigation and Engineering program
PTY	Post-Test Year
RAMP	Risk Assessment Mitigation Phase
SDG&E	San Diego Gas & Electric Company
SoCalGas	Southern California Gas Company
TOU	Time-Of-Use
UAS	Unmanned Aircraft System