

Company: San Diego Gas & Electric Company (U 902 M)  
Proceeding: 2016 General Rate Case  
Application: A.14-11-\_\_\_\_\_  
Exhibit: SDG&E-03

**SDG&E**

**DIRECT TESTIMONY OF DAVID L. GEIER**

**ELECTRIC OPERATIONS RISK POLICY**

**and**

**DIRECT TESTIMONY OF DOUGLAS M. SCHNEIDER**

**GAS OPERATIONS RISK POLICY**

**NOVEMBER 2014**

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





**CHAPTER 1**

**DIRECT TESTIMONY OF DAVID L. GEIER**

**ELECTRIC OPERATIONS RISK POLICY**

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## SUMMARY

- My testimony provides an overview of SDG&E's strong safety culture and commitment to further developing processes and programs designed to manage safety risks and to promote system reliability.
- SDG&E has a well-developed safety culture founded on proven employee-based programs, continuous safety training programs and education of SDG&E's workforce. Our strong safety culture promotes safe, reliable electric system operation that benefits the public and employees.
- SDG&E's safety philosophy and practices include a continued operational commitment to risk management through targeted programs and initiatives, including particular focus in the last decade to minimizing fire risk. My testimony identifies some of the highest priority risks our electric system faces and the specially designed practices SDG&E has in place to mitigate them.
- SDG&E is committed to the continued growth and development of our existing risk management processes into a more fully integrated enterprise risk management (ERM) governance structure.
- Consistent with our commitment to continuous improvement, our GRC test year (TY) 2016 includes capital and operations and maintenance (O&M) proposals to enhance and expand our risk mitigation efforts, such as the Fire Risk Mitigation (FiRM) project.
- Our TY 2016 electric operations funding requests are tied to our risk mitigation processes and will allow SDG&E to continue providing safe and reliable service to our customers at reasonable rates. Through continued risk management efforts, we will maintain our system's reliability and safety well into the future.

1 **DIRECT TESTIMONY OF DAVID L. GEIER**  
2 **ELECTRIC OPERATIONS RISK POLICY**

3 **I. INTRODUCTION**

4 San Diego Gas & Electric (SDG&E) has been committed to delivering safe and reliable  
5 power and exceptional service to our customers since our inception. Today, almost every action  
6 we take is driven by our commitment to safety. SDG&E is ever-cognizant of protecting the  
7 communities we serve, our approximately 4700 employees, and our electric system, by  
8 continuously managing risks while providing safe, reliable electric service to 3.5 million  
9 customers. Safety, security and reliability are central to how SDG&E maintains and operates its  
10 electric delivery system.

11 To that end, SDG&E has always prioritized electric operations risk management in its  
12 General Rate Case (GRC) proposals before the California Public Utilities Commission  
13 (Commission). In its test year (TY) 2016 GRC, SDG&E is additionally responding to the  
14 Commission's recent efforts encouraging utilities to incorporate analysis of safety, security and  
15 reliability risks into GRC testimony, as discussed in Diana Day's direct testimony (Exhibit  
16 SDG&E-02). Ms. Day testifies to SDG&E's and SoCalGas' current risk management practices  
17 and our ongoing efforts and commitments to develop a more comprehensive enterprise risk  
18 management (ERM) process. We recognize the importance of risk management and are taking  
19 steps to more systemically integrate our continuously evolving focus on this issue.

20 My testimony provides an overview of SDG&E's well-developed safety-first culture and  
21 practices designed to manage risks, our current risk management practices and processes for  
22 electric operations, and our GRC TY 2016 testimony proposals intended to mitigate the highest-  
23 priority electric operation risks SDG&E faces today. Specifically, my testimony describes:

- 24 • SDG&E's efforts in implementing and growing a strong safety culture, which is  
25 embedded in everything we do;
- 26 • SDG&E's public safety and reliability philosophy and practices that have  
27 successfully mitigated electric operations risk over many years;
- 28 • SDG&E's consistency in prioritizing safety and reliability risk management in our  
29 investment decision-making; and
- 30 • SDG&E's testimony in this TY 2016 GRC supporting funding requests to manage the  
31 safety and security risks facing our system today.

1 The testimony of Doug Schneider similarly addresses these topics from the gas  
2 operations perspective, for both SoCalGas and SDG&E.

3 **II. SDG&E’S PROVEN SUCCESS IN DEVELOPING A STRONG SAFETY**  
4 **CULTURE**

5 SDG&E has designed over many years our practices and procedures to protect the public  
6 and employees from safety, security and reliability risks. SDG&E’s safety focus is embedded in  
7 what we do and is the foundation for who we are – from initial employee training, to the  
8 installation, operation and maintenance of our utility infrastructure, and to our commitment to  
9 provide safe and reliable service to our customers. Public and employee safety and security are  
10 at the forefront of how SDG&E’s workforce maintains and operates the electric system.

11 SDG&E launched an initiative to build and strengthen its safety culture in the mid-1990s,  
12 when SDG&E had an Occupational Safety and Health Administration (OSHA) recordable  
13 incident rate of approximately 8.5. By 2013, SDG&E’s OSHA recordable incident rate had  
14 dropped to 2.3, an improvement of more than 72%. Also in 2013, SDG&E asked the National  
15 Safety Council (NSC) to compare SDG&E<sup>1</sup> to other companies using its “Safety Barometer”  
16 database. SDG&E’s overall Safety Barometer score was 93 out of a possible 100, which is  
17 considered very high, showing that only 7% of the 580 firms in the NSC Database achieved a  
18 higher overall score than SDG&E.

19 **A. Behavior Based Safety (BBS)**

20 BBS applies on-the-job positive reinforcement and immediate feedback to continuously  
21 promote safe work behaviors, which has helped SDG&E to successfully establish and maintain a  
22 strong safety-focused culture. BBS is a proven safety program that promotes an ongoing cycle  
23 of improved individual safety behavior, through peer-to-peer review, positive reinforcement and  
24 immediate feedback. The BBS process also identifies areas where focus can create permanent  
25 change, which is critical to accomplishing continued long-term safety improvements. SDG&E  
26 has experienced great success with this program and plans to continue developing its strong  
27 safety-focused culture using additional analytical tools available from BBS, as Mr.  
28 Woldemariam testifies.

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<sup>1</sup> National Safety Council Safety Barometer March 2013 SDG&E. 3,175 employees in 19 business functions participated; the survey measured responses to safety and work-related statements in categories that included participation of management, supervisors and employees, as well as “safety support” and organizational activities and climate. Scores are zero to 100.

1           **B.       Grassroots Safety Leadership**

2           SDG&E recognizes the significant role that organizational culture plays on safety  
3 performance. In 2009 efforts began to improve the organizational culture through frontline  
4 employee leadership using Grassroots Safety Leadership. By using its tools, methods and  
5 workshop interventions, the goal is to drive employee accountability and engagement by  
6 addressing organizational culture. SDG&E’s Electric Regional Operations was the first  
7 operational group in the Company to use this program and in 2009 created “Grassroots Teams”  
8 in two of the six electric operating districts. Frontline employee teams are working on a variety  
9 of safety culture projects. Today all six SDG&E service territory districts have Grassroots  
10 Teams and projects underway.<sup>2</sup>

11           **III.     SDG&E’S SAFETY PHILOSOPHY AND PRACTICES THAT HAVE MANAGED**  
12           **RISK OVER MANY YEARS.**

13           SDG&E consistently has been recognized for having an industry-leading electric system  
14 in reliability. Beginning in 2005, SDG&E has been ranked “Best in the West” in reliability by  
15 PA Consulting Group, earning their regional ReliabilityOne award for eight consecutive years.  
16 SDG&E also received PA Consulting Group’s National Award for Outstanding Reliability  
17 Performance in 2010. SDG&E’s electric system continues to be very reliable through its  
18 systemic diligence in maintaining existing equipment, fixing service problems and restoring  
19 service constitute major job functions for SDG&E’s field employees, as Jonathan Woldemariam  
20 testifies (Exhibit SDG&E-10).

21           Much of SDG&E’s success in these areas can be attributed to SDG&E’s efforts toward  
22 building a strong safety culture and commitment to managing safety and reliability risks. These  
23 efforts include implementing proven employee-based programs to improve safety culture, such  
24 as Behavior Based Safety training (BBS), and a “Grassroots Safety Leadership” methodology to  
25 improve safety culture. Mr. Woldemariam’s testimony describes SDG&E’s continuous safety  
26 training programs and education of SDG&E’s workforce to ensure the safe, reliable operations of  
27 our electric system, for the benefit of the public as well as the workforce. Several programs  
28 described in Mr. Woldemariam’s testimony contribute to workforce development training  
29 programs, such as those described below and many others.

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<sup>2</sup> See also Exhibit SDG&E-10, Direct Testimony of Jonathan Woldemariam.



1           SDG&E’s safety philosophy and practices include the strong safety culture described  
2 above as well as a continued operational commitment to risk mitigation through targeted  
3 programs and initiatives. For example, SDG&E began collecting cable failure data in the mid-  
4 1990s in an effort to understand the mode(s) of failure, the failure trends, and the options to  
5 reduce failures in the future. In 1998, SDG&E began to proactively replace cable, targeting  
6 areas of concern identified by analyzing historical data. In the mid-2000s, we began upgrading  
7 our Geographical Information Systems (GIS) to provide us with more comprehensive asset data,  
8 among other things. And in the last decade, we have focused very specifically on the  
9 organization, tools and procedures to minimize fire risk. I identify below some of the highest  
10 priority risks our electric system faces and the specially designed practices SDG&E has in place  
11 to mitigate them.

12           **A.     Fire Risk Mitigation**

13           The firestorms of 2003 and 2007 devastated our community and caused severe damage  
14 and disruption to the electric distribution system. SDG&E continues to address as a top priority  
15 the safety and operational risks caused by the extreme Santa Ana wind conditions throughout  
16 SDG&E’s service territory, given that fire risk is extremely high during wind events, and the  
17 consequences of a fire can be catastrophic. SDG&E has implemented fire risk mitigation  
18 measures that are unprecedented (in both California and the electric industry) to minimize both  
19 the likelihood of fire and any damage caused by fire should an incident occur. Given current  
20 severe drought conditions in California<sup>3</sup> and the increasing number of year-round wind events in  
21 our service territory, SDG&E has needed to even further increase its fire risk mitigation efforts to  
22 adapt to changing field conditions. Mr. Woldemariam describes how day-to-day operations and  
23 fire risk mitigation efforts are now often inextricably linked, and Mr. Jenkins describes  
24 SDG&E’s numerous planned capital projects intended to minimize fire risk. Extensive fire risk  
25 mitigation programs that are discussed in detail in Mr. Woldemariam’s and Mr. Jenkins’  
26 testimonies are identified briefly below.

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<sup>3</sup> On February 17, 2014, Governor Brown issued a “State of Emergency” due to the ongoing drought; and on February 18, 2014, CPUC Safety Enforcement Division acting director Denise Tyrrell issued a letter directing the utilities to increase inspections in fire threat areas, to re-prioritize corrective action items, and to modify electric system fault protection schemes.

1                                   **1.       RIRAT and FiRM**

2                   SDG&E’s Reliability Improvements for Rural Areas Team (RIRAT) program conducts  
3 the systematic risk-based analysis targeted at minimizing impacts of fire risks. RIRAT is a  
4 multi-disciplinary technical team comprising subject matter experts from various departments,  
5 which implements a process to identify, evaluate, prioritize, plan and mitigate fire risks in rural  
6 areas and high fire threat zones. The RIRAT often evaluates aging equipment and utilizes new  
7 systems and technology in order to mitigate these fire risks while taking public safety and  
8 reliability into account. SDG&E has recently incorporated RIRAT and its associated processes  
9 into a more comprehensive Fire Risk Mitigation (FiRM) program.

10                  The FiRM program will address electric system hardening and pole loading issues in fire  
11 prone areas, replacing aged conductors, equipment and/or line elements known to have a  
12 heightened probability of failure. The FiRM program is very similar to the Pipeline Safety  
13 Enhancement Program (PSEP) taking place on the gas side of the business, as it aggressively  
14 modernizes the system in areas of high risk, through significant investment. Much of SDG&E’s  
15 urban system is underground, but the rural areas most susceptible to fire risk are predominantly  
16 served using our overhead system. The RIRAT is developing initiatives to mitigate the risks  
17 presented by an aging overhead system.

18                                   **2.       Vegetation Management**

19                  Vegetation management mitigates fire and reliability risks caused by vegetation contact.  
20 Through various methodologies and processes, SDG&E evaluates risk of vegetation growing  
21 near SDG&E equipment based on factors such as: current tree clearance, minimum line  
22 clearance, line voltage, location of tree, expected tree growth rate, condition of the tree, line sag,  
23 and wind sway. SDG&E prides itself in having successful processes in place to reduce  
24 vegetation-related outages and fire risk, as evidenced by our outstanding electric reliability  
25 record (discussed below). SDG&E’s vegetation management activities have proven to be very  
26 successful and have resulted in a 75% decrease in distribution outages due to vegetation contact  
27 in the last 5 years at SDG&E.

28                  Mr. Woldemariam supports SDG&E’s proposal to implement a vegetation management  
29 two-way balancing account in this TY 2016 GRC, to prepare for potentially large (but  
30 circumstantially difficult to predict) vegetation management costs necessary to protect the public  
31 and the system from vegetation-related fire risks, particularly during the current widespread

1 drought conditions. Increased drought-related fire risk mitigation efforts include increased  
2 targeted vegetation management efforts to monitor tree mortality, to assess additional concerns  
3 beyond what is planned, and to respond as necessary.

### 4 **3. Wind and Fire Emergency Response Protocol**

5 SDG&E's TY 2016 request also includes costs contributing to fire risk preparedness and  
6 emergency response activities to mitigate the impacts of wildfires. Mr. Woldemariam's  
7 testimony discusses SDG&E's strategic electric operational protocol during Red Flag Warnings,<sup>4</sup>  
8 Elevated Wind Conditions<sup>5</sup> and Protocol and Safety Patrol Costs for Restoration of Outages in  
9 high risk fire areas. During these high fire risk events, SDG&E implements a crew mobilization  
10 plan to increase standby staffing in areas adjacent to identified risks within the service territory.  
11 Standby staffing includes observers, contracted fire response teams, helicopter surveillance,  
12 Electric Trouble Shooters and Electric Construction Crews, who remain on standby around the  
13 clock, as appropriate. These activities are coordinated through SDG&E's Emergency Operations  
14 Center (EOC).<sup>6</sup> SDG&E's electric distribution operations group, its Meteorology group and its  
15 fire coordination group perform a joint risk analysis to determine the number of deployed  
16 personnel and to identify areas needing coverage. The presence of fire weather, the curing of  
17 fuels and the current system configuration are all factors that are considered in fire risk  
18 mitigation analysis and decision-making. SDG&E also has cameras stationed to support visual  
19 fire awareness and risk mitigation, particularly in non-populated areas where a camera could  
20 provide the first initial identification of a fire. Some of these cameras feature a complex  
21 software algorithm that detects and alerts a control center regarding a potential fire.

### 22 **B. Other High Priority Risks**

23 SDG&E must address new risks as they arise. One emerging risk is the threat of attack  
24 on critical assets (for example, the recent attack on PG&E's Metcalf substation).<sup>7</sup> Another

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<sup>4</sup> A Red Flag Warning is a forecast warning issued by the U.S. National Weather Service to inform area firefighting and land management agencies that conditions are ideal for wildland fire ignition and rapid propagation. See <http://www.weather.gov/>. As of June 2014, the SDG&E service territory has already experienced five Red Flag Warnings out of six expected for the entire year.

<sup>5</sup> SDG&E mobilizes crews and implements emergency management procedures very similar to Red Flag Warning protocol during "Elevated Wind Conditions," when SDG&E assesses a severe fire risk threat due to wind and humidity forecasts.

<sup>6</sup> See the direct testimony of Ms. Sarah Edgar, Exhibit SDG&E-24.

<sup>7</sup> The "Metcalf Incident" occurred on April 16, 2013. See "PG&E Metcalf Incident and Substation Security" report, Raymond Fugere, PE, Safety and Enforcement Division, CPUC, February 27, 2014.

1 relatively new risk is the threat of cybersecurity attack. Stephen J. Mikovits (SDG&E-19), Mr.  
2 Woldemariam and Mr. Jenkins testify regarding risk mitigation efforts (such as protection of  
3 customer privacy and SCADA<sup>8</sup> system protection) that address certain cybersecurity threats.  
4 Each of these risk mitigation initiatives demonstrates our continued commitment to incorporating  
5 risk-based assessments into our GRC applications. Section V of this testimony lists some of the  
6 projects and programs whose primary function is risk mitigation, and the associated funding  
7 requested in this GRC.

#### 8 **IV. SDG&E'S PROCESS FOR INCORPORATING SAFETY AND SECURITY RISK** 9 **INTO ITS INVESTMENT PORTFOLIO**

10 The approach SDG&E uses to address risk is a combination of bottom-up and top-down  
11 identification and management of risks, involving both capital projects and operations and  
12 maintenance (O&M) programs. Mr. Woldemariam and Mr. Jenkins describe these processes in  
13 further detail. As described above, the predominant risk SDG&E faces is due to fire threats.  
14 SDG&E has responded during recent years with a variety of programs and projects aimed  
15 specifically at mitigating that risk. The funding in many cases has come from closely related  
16 reliability efforts, but the increasingly important attention to fire risk mitigation threatens to  
17 overwhelm the funding available to non-fire related reliability improvements alone.

18 The capital decision methodology is a bottom-up process that begins with engineers and  
19 project managers using their experience and, in some cases, historic asset life and failure data, to  
20 identify which projects should be considered for capital funding. In the early stages of planning,  
21 alternative risk mitigation solutions will be considered. As the subject matter experts converge  
22 on a preferred approach<sup>9</sup> to mitigate a particular risk, alternatives will progressively be set aside  
23 and further study expenses will not be made on them.<sup>10</sup> The project managers then review their  
24 proposals with their functional director.

25 The portfolio of electric distribution capital projects is categorized as follows: Mandated,  
26 Safety & Risk Management, Reliability/Improvements, New Business, Capacity/Expansion,  
27 Franchise, Materials, Equipment/Tools/Miscellaneous, Overhead Pools, and Transmission/FERC  
28 Driven Project. The projects within these categories are prioritized, and the list of prioritized

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<sup>8</sup> Supervisory Control and Data Acquisition (SCADA).

<sup>9</sup> A preferred approach is determined based on a combination of factors including engineering feasibility, cost, time to complete.

<sup>10</sup> Discarded or unworkable alternatives to projects have not been formally documented.

1 projects is then reviewed by our internal Capital Budget Committee, where individual projects  
2 are challenged to ensure they meet a reasonableness review for risk mitigation and compliance.  
3 Changes can and are made in the Capital Committee before the proposed budget is presented to  
4 the Executive Finance Committee (EFC). Examples of risk-mitigation projects in this GRC can  
5 be found in the Safety and Risk Management category of projects in Mr. Jenkins' testimony,  
6 which includes these capital projects planned for 2014-2016 (in rounded values):

- 7 • Fire Risk Mitigation (FiRM) in three phases, addressing the most threatened  
8 geographic zones first:
  - 9 ○ Phases 1 and 2, \$38 million; and
  - 10 ○ Phase 3, \$80 million;
- 11 • Pole replacements and reinforcement, \$46 million;
- 12 • Sulfur hexafluoride (SF6) switch replacement, \$10 million;
- 13 • Distribution aerial marking and lighting, \$420,000;
- 14 • A Cleveland National Forest (CNF) blanket budget to address aging  
15 infrastructure replacements tied to an agreement with the CNF as part of the  
16 renewal of the Master Special Use Permit, \$10 million; and
- 17 • Replacement of 'Live Front' equipment, \$2.5 million.

18 The O&M decision methodology is closely linked to the capital decision methodology,  
19 because the O&M component of any given capital project follows as a necessity to completing  
20 the project.<sup>11</sup>

21 The large majority of O&M activities are driven by compliance activities; and as shown  
22 above and described in Mr. Woldemariam's testimony, these compliance activities are enhanced  
23 by SDG&E's strong commitment to public and employee safety and maintaining a safety culture.  
24 For example, Electric Distribution Operations has responsibility for our Outage Management  
25 System (OMS), and is also the home of our meteorological staff whose wind and weather  
26 modeling systems, in-field instrumentation, weather stations and camera hardware are dedicated  
27 to fire preparedness and response. Electric Regional Operations contains the manpower required  
28 to inspect and maintain our system, restore service due to outages, repair service problems, and  
29 address other customer issues. Our Construction Services department houses the Corrective

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<sup>11</sup> Mr. Jenkins and Mr. Woldemariam discuss the percentage allocations for capital and O&M components of capital project costs.

1 Maintenance Program group, which develops and centrally manages the patrol, inspection and  
2 maintenance elements related to the General Order (G.O.) 165 Corrective Maintenance Program  
3 (CMP). The Construction Services department also houses our Fire Coordination and Prevention  
4 group. The Reliability and Capacity Analysis department supports our Community Fire Safety  
5 Program. A year-round coordinating effort is conducted from our Engineering department to  
6 prepare for fire season, using a “scorecard” methodology. The scope of those coordinating  
7 efforts includes all departments with fire preparedness responsibilities. Our Vegetation  
8 Management programs are also important to mitigating fire risk. Troubleshooting and Skills  
9 Training are keys to successful prevention and response to minimize risk exposure at the source.  
10 Funding for these activities also undergoes a rigorous challenge and review at the Operating  
11 Budget Committee and EFC sessions. For TY 2016:

- 12 • Electric Region Operations, \$38 million;
- 13 • Electric Distribution Operations, \$15 million;
- 14 • Troubleshooting, \$8 million;
- 15 • Skills Training, \$5 million; and
- 16 • Vegetation Management (Tree Trimming and Pole Brushing), \$29 million.

17 From time to time risks and requirements may emerge during the fiscal year. An example is the  
18 physical security risks that became more visible after PG&E’s Metcalf substation attack that  
19 occurred in April 2013, and the requirements that may arise from the related amendments to  
20 California Senate Bill 699 (Hill) that were triggered by that event. In situations where risks and  
21 requirements emerge outside of SDG&E’s traditional investment planning cycle, SDG&E  
22 management will re-prioritize work to ensure risk mitigation and compliance.

23 **V. THE SAFETY AND SECURITY RISKS BEING MANAGED BY CAPITAL AND**  
24 **O&M SPENDING IN THE TY 2016 GRC**

25 SDG&E has always been cognizant of risks associated with its electric distribution  
26 system; however, the CPUC has recently engaged in efforts to bring utility analysis of those risks  
27 into a much more formal framework. SDG&E has cultivated a mature, successful safety culture  
28 over many years. As Ms. Day testifies, SDG&E is committed to developing a more fully  
29 integrated ERM structure and incorporating those principles and practices into our operations.  
30 SDG&E’s current processes have facilitated identifying and planning investment in risk-  
31 management efforts for purposes of this TY 2016 GRC.

1 To demonstrate this, I have compiled the approximate funding requests addressing broad  
2 risk categories from various witness testimonies, shown in the list, table and chart below. These  
3 risk categories are similar to safety risks that SDG&E identified as part of the Commission’s  
4 Risk-Framework OIR,<sup>12</sup> combined here for purposes of my testimony. Cost requests to address  
5 the identified risk categories were compiled from electric distribution, electric generation, and  
6 information technology subject areas.<sup>13</sup> The “Public & Employee Safety, Disaster Recovery”  
7 category of risk also includes emergency operations cost requests from SDG&E’s Customer  
8 Services and Human Resources, where expenses for emergency customer notification and  
9 emergency operations centers are reflected.

10 Risk mitigation efforts naturally overlap and defy distinct boundary definitions. For  
11 example, fire risk mitigation efforts also enhance system reliability and public safety. Efforts to  
12 maintain and improve system reliability inherently also improve public safety. General Order  
13 compliance, by design, also improves system infrastructure integrity. With those considerations,  
14 the risk category list below attempts to identify costs exclusive of other risk mitigation efforts, so  
15 that the same cost category is not identified twice. Neither the risk category list nor the funding  
16 request compilation is inclusive, but represents an effort to demonstrate in broad categories  
17 SDG&E’s electric-related funding requests to mitigate certain types of risk known at this time.  
18 The risk categories are expected to evolve as circumstances change and SDG&E’s ERM  
19 governance structure evolves. The risk categories are summarized as follows:

20 **System Reliability:** This category includes the costs of replacing underground cable and  
21 transformers, restoration of service, substation and distribution reliability improvements, and  
22 power plant enhancement projects.

23 **Fire Risks:** This category includes fire risk mitigation costs including tree trim and pole  
24 brushing vegetation management costs, FiRM costs, weather measurement devices, our Wildfire  
25 Strike Team, and costs of infrastructure enhancements to prevent ignition sources such as in the  
26 Cleveland National Forest.

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<sup>12</sup> See December 20, 2013, Response of [SDG&E] to Data Request in Attachment A of Order Instituting Rulemaking 13-11-006.

<sup>13</sup> The Information Technologies (IT) costs are shared services, with the bulk of O&M being incurred at SDG&E and the bulk of capital being incurred at SoCalGas. The SDG&E incurred costs for IT included in the table are not apportioned to SoCalGas.

1           **Infrastructure Integrity, Physical Security and Environmental:** Infrastructure  
2 integrity includes pole replacements and reinforcements (other than FiRM costs), substation  
3 security, switch replacements and avian protection. This category would also include physical  
4 security costs to address sabotage and terrorism risks, Senate Bill 699 (Hill, System Security)  
5 impacts, and any required physical NERC/CIP<sup>14</sup> compliance.

6           **Public & Employee Safety, Disaster Recovery:** This category identifies other costs  
7 directed at mitigating public and employee safety risks (e.g., training, personal protective  
8 equipment, climbing gear and tools, and enclosed space apparatus) that do not fall into the other  
9 major categories of Fire, Infrastructure Integrity or System Reliability. This category also  
10 includes costs related to prepare for natural disasters other than wildfire (e.g., earthquakes,  
11 floods, landslides, and civil disturbances) and the Emergency Operations Center.

12           **Cybersecurity and Customer Data Privacy:** This category includes costs intended to  
13 protect data system integrity and comply with electronic NERC/CIP standards; and mitigate risks  
14 of denial-of-service attacks, and confidentiality/integrity/availability attacks. Also included are  
15 the costs of taking physical and electronic precautions to protect customer information.

16           The capital forecasts represent the sum total cost requests for 2014, 2015 and 2016, while  
17 the O&M represents forecasted expenses in TY 2016.

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<sup>14</sup> North American Electric Reliability Corporation (NERC)/Critical Infrastructure Protection (CIP) standards.



1

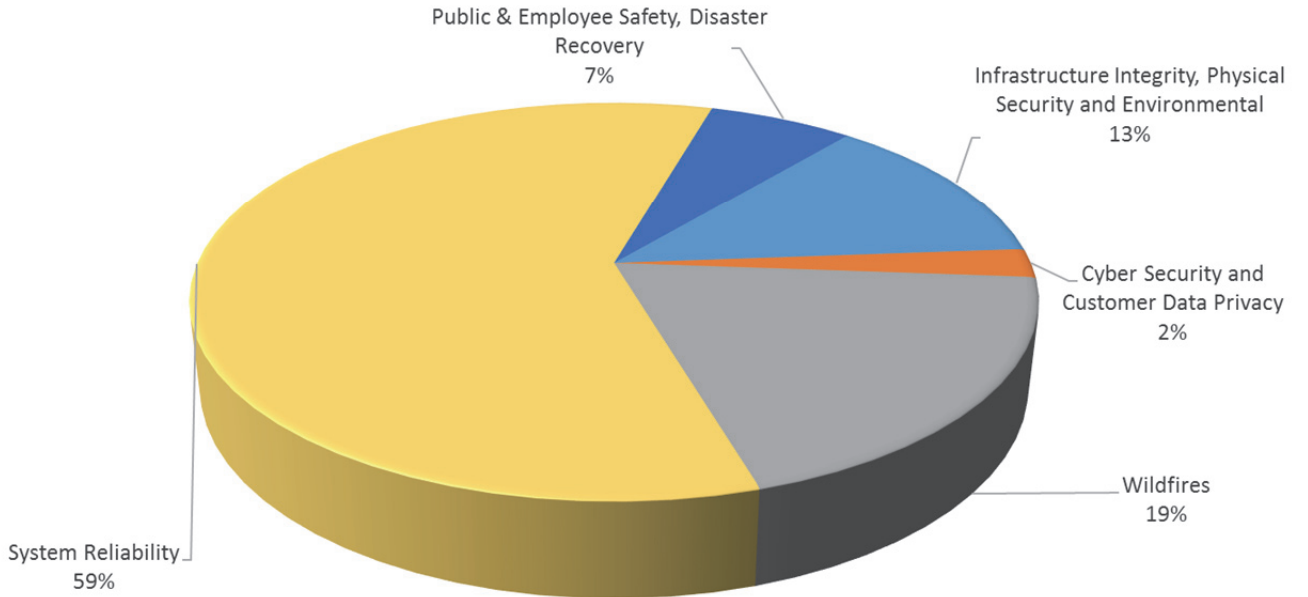
Risk Category	Capital (\$ 000's)	O&M (\$ 000's)
Infrastructure Integrity, Physical Security and Environmental	\$100,497	\$11,220
Cyber Security and Customer Data Privacy	\$11,584	\$6,541
Wildfires	\$140,112	\$28,851
System Reliability	\$395,467	\$123,901
Public & Employee Safety, Disaster Recovery	\$31,074	\$26,715

2



### SDG&E Electric Risk Mitigation

- Infrastructure Integrity, Physical Security and Environmental
- Cyber Security and Customer Data Privacy
- Wildfires
- System Reliability
- Public & Employee Safety, Disaster Recovery



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4

1 **VI. CONCLUSION**

2 In conclusion, SDG&E has a strong safety culture and a demonstrated history of public  
3 and employee safety risk management – not only in its day-to-day operations, but in the  
4 evaluation of the projects it proposes to be funded through rates. SDG&E is committed to  
5 developing its ERM governance structure to become more fully integrated with SDG&E’s  
6 existing risk management processes through its electric operations, as Ms. Day testifies. Mr.  
7 Woldemariam and Mr. Jenkins testify regarding SDG&E’s current and proposed safety, security,  
8 and risk mitigation efforts in electric operations, and support costs to continue and grow these  
9 efforts. SDG&E’s risk management efforts are strong, although its ERM tools and protocols are  
10 still in development. SDG&E will continue to develop its ERM structure and demonstrate its  
11 evolution in future GRC funding requests.

12 This concludes my prepared direct testimony.

1 **VII. WITNESS QUALIFICATIONS**

2 My name is David L. Geier. I am Vice President of Electric Transmission and System  
3 Engineering for San Diego Gas & Electric (SDG&E). In my present position I oversee the  
4 planning, design and engineering of SDG&E's distribution, transmission and substation  
5 facilities. I am also responsible for operating the transmission grid.

6 I have held several previous management positions at SDG&E, including director of  
7 electric grid and distribution services, manager of direct access implementation, and supervisor  
8 of several SDG&E operations and facilities. Before joining SDG&E in 1980, I worked for  
9 Wisconsin Electric Power Co. in Milwaukee. I hold a bachelor's degree in Electrical  
10 Engineering and Power Engineering curriculum from the University of Illinois, Urbana. I also  
11 hold a Master's Degree in Electrical Engineering and Computer Engineering curriculum from  
12 San Diego State University. I am a registered professional engineer in California.

13 I have previously testified before the Commission.

## APPENDIX - GLOSSARY

<b>ACRONYM</b>	<b>DEFINITION</b>
BBS	Behavior Based Safety
CIP	Critical Infrastructure Protection
CNF	Cleveland National Forest
EFC	Executive Finance Committee
ERM	Enterprise Risk Management
FiRM	Fire Risk Mitigation
GIS	Geographical Information Systems
GRC	General Rate Case
IT	Information Technology
NERC	North American Electric Reliability Corporation
NSC	National Safety Council
O&M	Operations and Maintenance
OMS	Outage Management System
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PSEP	Pipeline Safety Enhancement Program
RIRAT	Reliable Improvements for Rural Areas Team
SCADA	Supervisory Control and Data Acquisition
SDG&E	San Diego Gas & Electric Company
SoCalGas	Southern California Gas Company
TY	Test Year

**CHAPTER 2**

**DIRECT TESTIMONY OF DOUGLAS M. SCHNEIDER**

**GAS OPERATIONS RISK POLICY**

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## SUMMARY

- My testimony provides an overview of SoCalGas and SDG&E's strong safety culture and commitment to further developing processes and programs designed to manage safety risks and to promote system reliability.
- SoCalGas and SDG&E have well-developed risk management processes and programs in place for gas operations, from daily operations and maintenance (O&M) activities to the extensive Integrity Management Programs for transmission (TIMP) and distribution (DIMP) facilities.
- SoCalGas and SDG&E are committed to the continued growth and development of our existing risk management processes into a more fully integrated enterprise risk management (ERM) governance structure.
- Consistent with our commitment to continuous improvement, our general rate case (GRC) test year (TY) 2016 includes proposals to enhance and expand our gas operations risk management practices. For example, SoCalGas proposes to implement a new Storage Integrity Management Program for underground storage wells (SIMP).
- Our TY2016 gas operations funding requests are tied to our risk management processes and will allow SoCalGas and SDG&E to continue providing safe and reliable service to our customers at reasonable rates. Through continued risk management efforts, we will maintain our system's safety and reliability well into the future.

1                   **PREPARED DIRECT TESTIMONY OF DOUGLAS M. SCHNEIDER**  
2                                   **GAS OPERATIONS RISK POLICY**

3 **I.       INTRODUCTION**

4           Southern California Gas Company (SoCalGas) and San Diego Gas & Electric (SDG&E)  
5 have always focused on delivering natural gas safely and reliably to our customers. Combined,  
6 SoCalGas' and SDG&E's over 117,000 mile natural gas pipeline transmission and distribution  
7 network delivers gas to Southern California businesses and residents through approximately 6.7  
8 million meters.<sup>1</sup> Our approach to operating our pipeline system has always been, and continues  
9 to be, safety-driven.<sup>2</sup> My testimony provides an overview of SoCalGas and SDG&E's safety  
10 culture and our commitment to further developing processes and programs designed to mitigate  
11 safety risks and maintain system reliability.

12           Our approach to safety is founded upon a commitment to continuous improvement.  
13 While we take great pride in our long history of providing safe and reliable service, we  
14 continually seek out opportunities to enhance and improve our risk management practices. Data,  
15 knowledge and new technologies are analyzed and utilized with the goal of preventing  
16 conditions or circumstances that could negatively impact safety and reliability. The use of data  
17 to drive actions is the foundation of a risk-based approach to safety and has been in place and  
18 improved upon over the last several decades at both SoCalGas and SDG&E. As explained in the  
19 testimony of Diana Day (SCG-02, SDG&E-02), SoCalGas and SDG&E are committed to further  
20 developing processes that address safety and reliability within a comprehensive Enterprise Risk  
21 Management (ERM) framework.

22           Our GRC test year (TY) 2016 gas operations funding requests allow SoCalGas and  
23 SDG&E to continue to perform the work to operate the gas system safely and reliably. The  
24 requests include funding for necessary resources to continue to perform foundational (and often  
25 required) safety-driven activities and to enhance our programs and capabilities using technology  
26 and systems to assess infrastructure and to act upon those assessments. Investing in new  
27 technologies and establishing programs to enhance our ability to gather, preserve and analyze

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<sup>1</sup> SoCalGas has 102,471 miles of pipeline and 5.8 million customer meters. SDG&E has 14,821 miles of pipeline and 865,300 customer meters.

<sup>2</sup> The California Public Utilities Code has long-required utilities to “furnish and maintain such adequate, efficient, just, and reasonable service ... to promote the safety, health, comfort, and convenience of its patrons, employees, and the public.” Cal. Pub. Util. Code § 451.



1 information and to manage safety risks through prevention and mitigation of potential  
2 consequences is a cornerstone of our risk-based approach to safety and reliability.

3 My testimony describes:

- 4 • How SoCalGas and SDG&E implement a strong safety culture;
- 5 • How SoCalGas and SDG&E implement gas operations practices and programs to  
6 address safety and reliability risks;
- 7 • How SoCalGas and SDG&E continuously consider safety and reliability risk within  
8 our gas operations investment prioritization decisions; and
- 9 • How SoCalGas' and SDG&E's testimonies in this TY 2016 GRC supports funding  
10 requests to mitigate safety, reliability and security risks facing our system today.

11 The testimony of Dave Geier similarly addresses these topics from the SDG&E electric  
12 operations perspective.

## 13 **II. SAFETY CULTURE**

14 SoCalGas and SDG&E's longstanding commitment to safety focuses on three primary  
15 areas –public safety, customer safety, and employee safety. This safety focus is embedded in  
16 what we do and is the foundation for who we are – from initial employee training, to the design,  
17 installation, operation and maintenance of our utility infrastructure, to our commitment to  
18 provide safe and reliable service to our customers.

19 Both SoCalGas and SDG&E launched initiatives to build and strengthen our safety  
20 cultures in the mid-1990s. At that time, SoCalGas had an Occupational Safety and Health  
21 Administration (OSHA) recordable incident rate of approximately 8.0 and SDG&E had a  
22 recordable incident rate of approximately 8.5. By 2013, SoCalGas' and SDG&E's OSHA  
23 recordable incident rates per year had dropped to approximately 3.5 and 2.3, respectively.

24 In 2013, SoCalGas and SDG&E asked the National Safety Council (NSC) to assess and  
25 compare the safety cultures of SoCalGas and SDG&E to other companies using its "Safety  
26 Barometer" database. SoCalGas and SDG&E each achieved overall Safety Barometer scores of  
27 93 out of a possible 100, which is considered very high, showing that only 7% of the 580 firms  
28 in the NSC Database achieved a higher overall score than SoCalGas and SDG&E.<sup>3</sup>

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<sup>3</sup> National Safety Council Safety Barometer March 2013 SoCalGas. 6238 employees across 75 locations participated; the survey measured responses to safety and work-related statements in categories that included participation of management, supervisors and employees, as well as "safety support" and organizational activities and climate. Scores are zero to 100.

1 SoCalGas and SDG&E have broad safety programs that incorporate employee  
2 involvement in furthering our safety culture. The safety cultural experience at SoCalGas and  
3 SDG&E begins with the formalized training employees receive when they begin their career,  
4 which is emphasized on the job, and is then re-emphasized during the training employees receive  
5 as they advance into new jobs.

6 SoCalGas and SDG&E conduct frequent, and in many cases, daily, meetings with  
7 employees who work in field jobs during which time health and safety topics are discussed. Job  
8 observations are also conducted where employees' safe behaviors are reinforced and coached.  
9 Over 500 employees serve on safety committees, whose membership rotates among the  
10 workforce. Safety committee members work on projects to reduce or eliminate hazards, prevent  
11 injuries and raise safety awareness, through person-to-person interaction. SoCalGas and  
12 SDG&E seek to enhance the mindset that keeps employees watchful of each other's safety.

13 In 2012, SoCalGas and SDG&E implemented natural gas safety plans in accordance with  
14 California Public Utilities Code Sections 961 and 963. The Safety Plans convey SoCalGas' and  
15 SDG&E's safety performance expectations and describe the various programs, policies,  
16 standards, and procedures that are designed to accomplish those expectations. In the hierarchy of  
17 documents that communicate SoCalGas and SDG&E's gas operations safety program, this  
18 Safety Plan is at the top. In addition, as described in our respective gas safety reports, SoCalGas  
19 and SDG&E prioritize work to comply with laws and regulations and provide system integrity  
20 and reliability in accordance with our commitment to safety.<sup>4</sup>

21 Because our focus on safety is deeply embedded in our culture and everything that we do,  
22 nearly all of our witnesses further elaborate on our safety culture in their respective testimony  
23 volumes. A few examples of subject areas that particularly highlight our safety focus in gas  
24 operations: Sarah Edgar (SDG&E-24) and Mark Serrano (SCG-23) support costs for programs  
25 utilized by each utility to address employee safety. The Gas operations witnesses Frank Ayala  
26 (SDG&E-04, SCG-04), Maria Martinez (SDG&E-07, SCG-08), Ray Stanford (SDG&E-06,  
27 SCG-07), John Dagg (SDG&E-05, SCG-05) and Phil Baker (SCG-06) address gas operations

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<sup>4</sup> See Southern California Gas Company, January 1 – June 30, 2013 Gas Transmission, Distribution and Storage Safety Report, p. 6. SDG&E's Safety Plan includes a similar commitment. See San Diego Gas & Electric Company, January 1 – June 30, 2013 Gas Transmission, Distribution and Storage Safety Report, p. 6.

1 and the associated risk mitigation activities that SDG&E and SoCalGas undertake in designing,  
2 constructing, operating and maintaining the gas systems.

### 3 **III. GAS OPERATIONS AT SOCIALGAS AND SDG&E MANAGE RISK**

4 As described above, SoCalGas and SDG&E's gas operations safety philosophy and  
5 practices are rooted in a strong safety culture that is focused on continuous improvement and an  
6 operational commitment to risk mitigation through targeted programs and initiatives. SoCalGas  
7 and SDG&E have long-recognized the need for a reliable and safe natural gas system. The goal  
8 of providing natural gas safely and reliably to customers is considered at every stage of design,  
9 materials selection, construction, operation and maintenance of the natural gas systems.

#### 10 **A. SoCalGas and SDG&E's Risk Management Practices**

11 SoCalGas and SDG&E manage gas operations risks daily through O&M and capital work  
12 elements based on a variety of risk factors and work drivers, such as conditions found during  
13 inspections, federal and state regulatory requirements, customer and pipeline growth  
14 expectations, franchise obligations, and permitting requirements. Company policies require that  
15 immediate safety and compliance considerations be prioritized first, and subsequent work is then  
16 actively prioritized considering factors such as regulatory compliance deadlines, customer  
17 scheduling requirements, weather, and overall infrastructure condition.

18 SoCalGas and SDG&E also invest in a variety of capital improvements. Specific factors  
19 considered in the prioritization process of capital work may vary depending on the type of  
20 project. The prioritization of pipeline projects (*e.g.*, mains, services, cathodic protection, valves,  
21 and regulator station replacements) is driven by a review of maintenance activities and findings,  
22 results of field workforce inspections, and the ability of the system to meet changing customer  
23 requirements. Other factors considered for the replacement of assets include the properties of the  
24 infrastructure, general equipment reliability, and/or design obsolescence.

25 The performance of cast iron, copper, and PVC (polyvinyl chloride) pipe for the  
26 distribution of natural gas have proven to be of concern. SoCalGas and SDG&E have removed  
27 pipe made with these material from its system. The replacement of these materials starting in the  
28 1980s is an example of using risk to drive prioritization of capital investment. Current programs  
29 to address pipeline replacements are addressed by the appropriate operational witness.

1           **B.       SoCalGas and SDG&E’s Risk Mitigation Through Integrity Management**

2           SoCalGas’ and SDG&E’s Transmission and Distribution Integrity Management

3 Programs demonstrate the implementation of processes and technology as part of continuous  
4 improvement and our risk-driven approach to operating and maintaining our system. Through  
5 these pipeline integrity programs, SoCalGas and SDG&E continually evaluate the pipeline  
6 system by gathering and integrating data and then proactively taking action based upon the  
7 information to perform inspections, replacements and other remediation activities that verify and  
8 enhance safety and reliability.<sup>5</sup> As DIMP and TIMP programs mature, the ability to compare the  
9 risk of various threats to the safety and reliability of the system will improve. In addition, as  
10 discussed in the testimony of Phillip Baker (Exhibit SCG-06), we propose to adopt a new  
11 Storage Integrity Management Program (SIMP) that will apply integrity management principles  
12 to underground storage assets and are not part of TIMP and DIMP. As Ms. Day testifies,  
13 SoCalGas and SDG&E are committed to continued development of an ERM governance  
14 structure.

15           The threats and associated risk identified through TIMP and DIMP include risks to public  
16 and employee safety, system reliability and physical security. The loss of pipeline or facility  
17 equipment could impact system reliability by reducing system capacity, inhibiting the ability to  
18 efficiently move gas through the system and/or diminishing deliverability of gas to customers.  
19 This could have a particularly significant impact on customers that provide key health and safety  
20 services, such as hospitals and electric generators. Similarly, interruptions of natural gas supply  
21 to refineries and other critical infrastructure could disrupt the economy and quality of life of  
22 Californians.

23           An essential component of an effective risk management program is the prioritization of  
24 assessment and resultant mitigation activities. For example, in TIMP pipeline assessments in  
25 populated areas are prioritized to be completed prior to the completion of non-populated areas.  
26 The assessment results are then used to drive specific mitigation activities.<sup>6</sup> Another example is  
27 the sewer lateral inspection program (SLIP) in DIMP. Areas where cross bores of natural gas

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<sup>5</sup> In D.14-06-007, the CPUC approved SoCalGas’ and SDG&E’s Pipeline Safety Enhancement Plan. Information gathered in the execution of the plan will be integrated with other data as part of integrity management activities.

<sup>6</sup> Discarded or unworkable alternatives to performing assessments or mitigation have not been formally documented.

1 pipes with sewer lines are known to have occurred receive a higher priority to be inspected  
2 compared to areas where the data indicate solely a potential for cross bore. Additional  
3 information on these programs is included in the testimony of Ms. Martinez.

4 **IV. SOCALGAS AND SDG&E'S PROCESS FOR INCORPORATING SAFETY AND**  
5 **SECURITY RISK MANAGEMENT**

6 SoCalGas and SDG&E's request is largely driven by performing activities to monitor and  
7 the integrity and reliability of the system. Various activities are performed to identify changes to  
8 operating environments and take action when appropriate to maintain safety and reliability. The  
9 health of the pipeline systems are monitored by verifying the status of several parameters  
10 including natural gas odorization, corrosion control measures, pressure control equipment status  
11 and system pressures.

12 Equally important to the monitoring of the system integrity and reliability is the effective  
13 implementation of programs designed to prevent damage to the pipeline, and in the event that an  
14 unintentional release of natural gas occurs, the public and emergency responders are prepared  
15 and the consequence of the release is minimized. SoCalGas and SDG&E have excavation  
16 damage prevention and public awareness programs in place that promote pipeline safety and  
17 minimize risk.

18 Throughout the years, SoCalGas and SDG&E have built upon the successful safety  
19 practices that are reflected in our long history of safely and reliably operating and maintaining  
20 our gas system. While achieving compliance with applicable laws and regulations is a priority at  
21 SoCalGas and SDG&E, in the spirit of continuous improvement, both utilities strive to identify  
22 prudent opportunities to implement safety enhancements. These activities and programs are  
23 further explained by Mr. Stanford (Exhibits SCG-07 and SDG&E-06), Mr. Ayala (Exhibits  
24 SCG-04 and SDG&E-04), Mr. Dagg (Exhibits SCG-05 and SDG&E-05) and Mr. Baker (Exhibit  
25 SCG-07).

26 **V. THE SAFETY AND SECURITY RISKS BEING MANAGED BY CAPITAL AND**  
27 **O&M SPENDING IN THE TY 2016 GRC**

28 SoCalGas and SDG&E are committed to more fully developing an ERM governance  
29 structure, as discussed in the testimony of Diana Day (Exhibits SCG-02 and SDG&E-02). In an  
30 effort to give a very high-level sense of how our GRC requests address broad categorical types of  
31 risk, we have approximated funding requests from various witness testimonies in a list of risk  
32 categories below. These categories are similar to a list of safety risks SoCalGas identified as part

1 of the Commission's Risk-Framework Rulemaking,<sup>7</sup> combined here for purposes of my  
2 testimony. Of the many types of risk that confront our operations, these top categories address  
3 public and employee safety, system integrity, data security and reliability. The gas operational  
4 areas that are included in this risk categorization effort are: Gas Distribution, Gas Transmission,  
5 Gas Engineering, Pipeline Integrity, Gas Storage and Information Technologies.<sup>8</sup>

6 Risk mitigation efforts naturally overlap and preclude distinct boundary definitions. For  
7 example, infrastructure integrity efforts also enhance system reliability and public safety. Efforts  
8 to maintain and improve system reliability inherently also improve public safety, for example, by  
9 maintaining: reliable service to natural gas-fired power plants, local distributed generation  
10 facilities, refineries and commercial, industrial and residential heating and boiler systems.  
11 General Order 112-E compliance, by design, also improves system infrastructure integrity. And  
12 as previously discussed, safety is a consideration in everything we do. The risk category list  
13 below nevertheless attempts to identify costs exclusive of other risk mitigation efforts (like  
14 safety), so that the same cost category is not identified twice. Neither the risk category list nor  
15 the funding request compilation is all-inclusive. Rather, this represents our preliminary effort to  
16 demonstrate in broad categories the gas-related GRC requests for both SoCalGas and SDG&E  
17 that mitigate certain types of identified risks. These risk categories, summarized as follows, are  
18 expected to evolve as circumstances change and SoCalGas and SDG&E continue to develop and  
19 enhance our ERM governance structure:

20 **System Reliability:** This category includes the cost of pressure betterment, compressor  
21 upgrades and replacements, new business installations, routine pipeline replacements, storage  
22 field compressors, gas compression stability and control, storage field operations, asset  
23 management, training and engineering support.

24 **Infrastructure Integrity, Physical Security and Environmental:** This category  
25 includes costs for major infrastructure integrity programs such as TIMP, DIMP and SIMP,  
26 distinguished from reliability or security costs in other categories. Also in this category are  
27 cathodic protection, inspection and maintenance tool (pig) launcher and receiver installations,

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<sup>7</sup> See December 20, 2013, Response of [SoCalGas] to Data Request in Attachment A of Order Instituting Rulemaking 13-11-006.

<sup>8</sup> The Information Technologies (IT) costs are shared services, with the bulk of O&M being incurred at SDG&E and the bulk of capital being incurred at SoCalGas. The SoCalGas incurred costs for IT included in the table are not apportioned to SDG&E.

1 meter installations and relocations, leak repairs, new storage wells and upgrades, storage field  
2 perimeter security and stormwater control, and general pipeline integrity activities such as aerial  
3 photography, in-line inspections, external corrosion detection inspections, and database  
4 maintenance. Physical security risk includes sabotage and terrorism, as distinguished from  
5 reliability or security in other categories.

6 **Public & Employee Safety, Disaster Recovery:** This category includes costs directed  
7 at mitigating public safety risks not included in other categories, and costs directed at employee  
8 safety not included in other categories (for example, training, personal protective equipment and  
9 work methods) that do not fall into the other major categories of System Reliability and  
10 Infrastructure Integrity. This category also includes costs related to natural disaster preparation  
11 and disaster recovery, such as to operate the Gas Emergency Centers.

12 **Cyber Security and Customer Data Privacy:** This category includes costs intended to  
13 protect data system integrity and mitigate risks of denial-of-service attacks, and  
14 confidentiality/integrity/availability attacks. Also included are the costs of taking physical and  
15 electronic precautions to protect customer information.

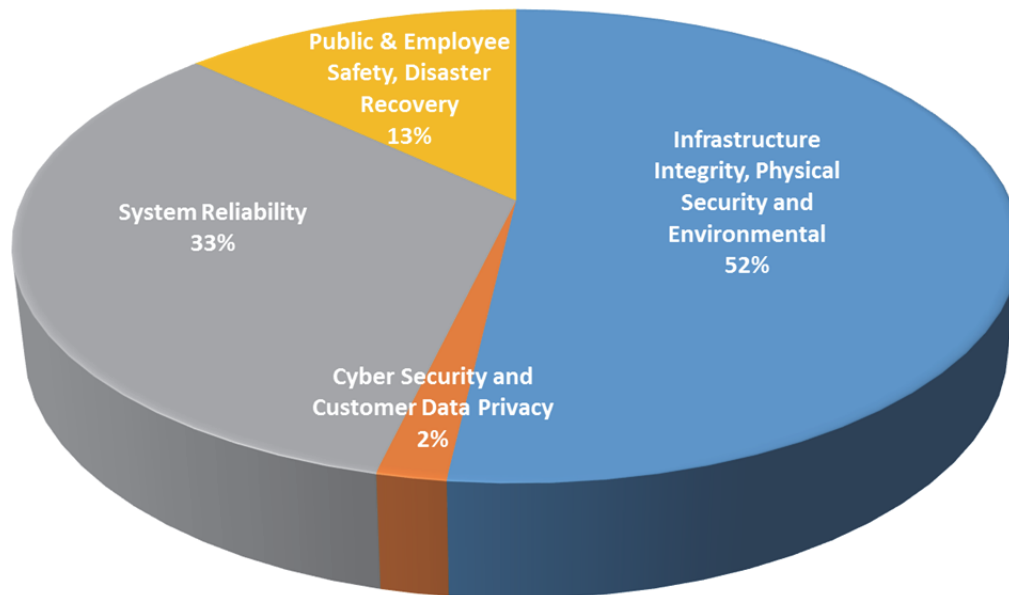
The capital forecasts represent the sum of 2014, 2015 and 2016, while the O&M forecasts represent TY 2016 expenses. The figures below include gas risk mitigation efforts for both SoCalGas and SDG&E.

Risk Category	Capital (\$ 000's)	O&M (\$ 000's)
Infrastructure Integrity, Physical Security and Environmental	\$757,015	\$204,410
Cyber Security and Customer Data Privacy	\$31,570	\$1,294
System Reliability	\$502,395	\$115,077
Public & Employee Safety, Disaster Recovery	\$171,274	\$71,312



## SoCalGas and SDG&E Gas Risk Mitigation

- Infrastructure Integrity, Physical Security and Environmental
- Cyber Security and Customer Data Privacy
- System Reliability
- Public & Employee Safety, Disaster Recovery





1 **VI. CONCLUSION**

2 In conclusion, SoCalGas and SDG&E have demonstrated a strong gas operations safety  
3 culture that is reflected in our long history of prioritizing and investing in public and employee  
4 safety risk management – not only in our day-to-day operations, but in our evaluation of the  
5 projects we propose to fund through rates. Through the active management of the design,  
6 construction, operation and maintenance of our natural gas system, SoCalGas and SDG&E  
7 collect information and employ risk principles to drive maintenance activities and capital  
8 investment. SoCalGas and SDG&E have managed risk through our routine operations,  
9 maintenance and capital activities and our integrity management programs. SoCalGas and  
10 SDG&E are currently further developing formal risk management tools and protocols.  
11 SoCalGas and SDG&E are committed to developing an ERM governance structure to become  
12 more fully integrated with our existing risk mitigation processes and will demonstrate the  
13 evolution of this formal program in future rate cases.

14 SoCalGas and SDG&E are proud of our long history of providing safe and reliable  
15 service to our customers at reasonable rates. Through continued innovation, sound investing,  
16 and new programs we will maintain our system’s safety and reliability well into the future.

17 This concludes my prepared direct testimony.

1 **VII. WITNESS QUALIFICATIONS**

2 My name is Douglas M. Schneider. I am employed by Southern California Gas Company  
3 and San Diego Gas & Electric Company as Vice President – Gas Engineering and System  
4 Integrity. My business address is 555 West Fifth Street, Los Angeles, California 90013-1011.

5 I graduated from Rutgers University in 1988 with a Bachelor of Arts degree in Chemistry  
6 and from California State University Fullerton in 1993 with a Master of Business Administration  
7 degree. I am also a registered professional engineer in California and have over 20 years of  
8 industry experience related to pipeline safety and corrosion control.

9 I have been employed by SoCalGas since 2001. In my current position my  
10 responsibilities include overseeing the transmission and distribution pipeline integrity programs,  
11 natural gas related major construction projects, the gas engineering function and the gas  
12 operations support of geographic and maintenance and inspection information systems for  
13 Southern California Gas Company and San Diego Gas & Electric Company. My previous  
14 experience includes positions of increasing responsibility including Engineering Design  
15 Manager, Technical Services Manager, Special Projects Manager, Pipeline Integrity Manager  
16 and Director of Pipeline Integrity.

17 I have previously testified before the Commission.

## APPENDIX - GLOSSARY

<b>ACRONYM</b>	<b>DEFINITION</b>
ERM	Enterprise Risk Management
DIMP	Distribution Integrity Management Program
IT	Information Technology
NSC	National Safety Council
OSHA	Occupational Safety and Health Administration
PSEP	Pipeline Safety Enhancement Program
PVC	Polyvinyl Chloride
SDG&E	San Diego Gas & Electric Company
SIMP	Storage Integrity Management Program
SLIP	Sewer Lateral Inspection Program
SoCalGas	Southern California Gas Company
TIMP	Transmission Integrity Management Program
TY	Test Year