BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop a Risk-Based Decision-Making Framework to Evaluate Safety and Reliability Improvements and Revise the General Rate Case Plan for Energy Utilities.	FILED PUBLIC UTILITIES COMMISSION NOVEMBER 14, 2013 SAN FRANCISCO, CALIFORNIA RULEMAKING 13-11-006

RESPONSE OF SAN DIEGO GAS & ELECTRIC COMPANY (U902M) TO DATA REQUEST IN ATTCHMENT A OF ORDER INSTITUTING RULEMAKING 13-11-006

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December 20, 2013

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Pursuant to the Ordering Paragraph 5 of Order Instituting Rulemaking (OIR) 13-11-006, San Diego Gas & Electric Company ("SDG&E") provides its response to the data request contained in Attachment A of the OIR.[1] SDG&E's Response is included as Appendix 1 hereto.

Respectfully submitted,
SAN DIEGO GAS & ELECTRIC COMPANY

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[1] The OIR at p. 12 refers to the set of questions in Attachment A as a data request to the respondent utilities.

APPENDIX 1

SDG&E's Response to Questions in Attachment A of OIR 13-11-006

OIR ON THE COMMISSION'S OWN MOTION TO DEVELOP A RISK-BASED DECISION-MAKING FRAMEWORK TO EVALUATE SAFETY IMPROVEMENTS AND REVISE THE GENERAL RATE CASE PLAN FOR ENERGY UTILITIES
(ISSUED ON NOVEMBER 14, 2013-R.13-11-006)
(DATA REQUEST ON NEW OIR)

Preface

The two California Sempra utilities, San Diego Gas & Electric (SDG&E) and Southern California Gas Company (SoCalGas), have been given to understand that an individual response from each utility is desired for the data request Attachment A questions to this OIR R.13-11-006.

It is worth noting that these two Sempra utilities SDG&E and SoCalGas, have sought, and been granted, combined applications for their General Rate Cases since 2004. Since that time, the gas operations of the two utilities have progressively integrated such that many of the operations have become similar, with policy direction primarily from SoCalGas and local management at SDG&E. The responses to these data request questions from the gas operations perspective will be often nearly identical for the two utilities, with minor differences where operations or facility differences yet exist; for example, SDG&E does not have any gas storage fields.

Where differences in the response to particular questions exist between the electric operations and gas operations at SDG&E, these are noted.

Many of the questions invite similar, or related, responses. In some cases, the reader is referred to a related response from another question.

SDG&E's goal is to continuously drive process improvements throughout its electric, gas and customer service operations, and stay abreast of industry best practices. Accordingly, these data request responses represent a snapshot in time, and are likely to develop further during the workshops we anticipate in the course of this proceeding.

QUESTION 1:

Please provide a description of your risk management units/divisions, programs, functions, and process, including organization charts.

RESPONSE 1:

SDG&E and SoCalGas take similar approaches to risk management although they are not identical due to their business nature and environment. As the result of recent organizational changes, the position of Vice President of Business Process Improvement and Enterprise Risk Management was created. This newly created VP position will oversee the enterprise risk management functions for both SDG&E and SoCalGas. While the supporting staff structure is still under development, SDG&E's current Director of Risk Management and Strategic Analysis (discussed below) will now report to the VP of Business Process Improvement and Enterprise Risk Management. It is also anticipated that there will be a staff position created at SoCalGas to support risk management activities, including support to SoCalGas' newly created Risk Management Committee.

Both companies actively manage their business risks and report their risk management activities to their respective Boards of Directors on an annual basis.

Although we have defined the roles and responsibilities for the Boards and all involved business functional areas ("BFA"), we strongly believe that, ultimately, managing risk is the responsibility of every employee and we have created and re-enforced a risk culture that puts safety and reliability as a top priority.

SDG&E's Enterprise Risk Management ("ERM") policy provides the guiding principles and defines the roles and responsibilities for risk management. Figure 1-1 depicts SDG&E's risk management governance structure.

Figure 1-1 SDG&E ERM Governance Structure

The oversight and governance responsibilities for risk management activity reside with the Board of Directors. The Board is responsible for establishing SDG&E's overall risk tolerance and approving the overarching framework for risk management. The Board delegates the ongoing managing and monitoring activities to the management. The executive Enterprise Risk Management Committee ("ERMC"), led by SDG&E's President and Chief Operations Officer, is responsible for consistency and accountability. The ERMC is supported by the Risk Management Department and an ERM Advisory Council, which consists of a number of directors and managers from various BFA's and is led by the Director of Risk Management. The members of the ERM Advisory Council are nominated by risk owners and approved by the ERMC. The ERMC also assigns a risk owner (an executive) to each corporate level risk, who is ultimately responsible for the risk. The risk owner can elect to identify a Risk Manager to implement the mitigation/contingency plans needed to manage the risk.

The responsibilities of each risk management area are described below.

The ERMC's responsibilities are summarized as follow:

- Leading cross company dialogue on risk assessments and developing a holistic view of the Company's portfolio of risks.
- Reviewing and approving the methodologies and processes to be used within the company to assess the potential and degree of risk associated with the Company's operations and risk treatment plans.
- Assigning risk owners for each key risk and evaluating the risk owner's risk analysis and treatment plan(s). ERMC assesses opportunities for improvement and/or necessities of coordination among different BFAs and assign executive responsibility for implementation.
- Monitoring the implementation of the "key risk" mitigation/treatment plans to assess whether risks are properly mitigated.
- Assessing whether the company's business plans adequately identify all key risks and include mitigation and contingency plans for the unmitigated and/or residual risks.
- Providing an annual report to the SDG&E Board of Directors on the company's risk management activities and results.
- Meeting quarterly (or as needed) to review key risks and discuss emerging risks.

The Risk Management Department has the following responsibilities:

- Assisting the ERMC in managing SDG&E's key risks, fulfilling its responsibilities (as described above) and administering the committee meetings.
- Assisting risk owners in effectively managing their key risks including facilitating the development of Risk Mitigation Plan(s).
- Working with BFAs to quantify risks and develop measurements (Key Risk Indicators) to gauge the effectiveness of their risk mitigation plans.
- Facilitating communications and sharing best practices or lessons learned among various BFAs.
- Managing SDG&E's Risk Register and facilitating a holistic approach to risk management across BFAs.
- Implementing, monitoring and adjusting the ERM process in order to timely update the key risks and reviewing the mitigation and contingency plans for key risks.
- Developing and providing risk owners/BFAs with appropriate risk management tools.

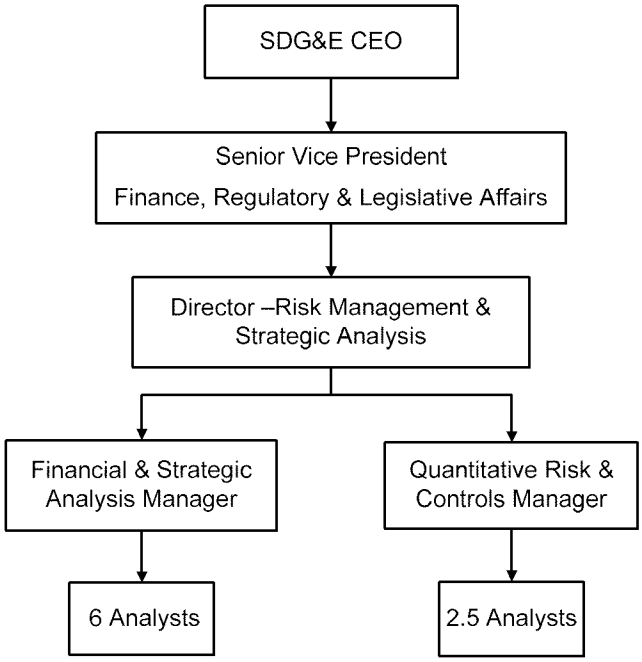


Figure 1-2 SDG&E's Current Risk Management Organization Chart

The ERM Advisory Council's responsibilities are as follows:

- Meeting Monthly/bi-monthly (or as needed) with the Risk Management Department to discuss the key risks that need the ERMC's attention.
- Providing input and feedback to the Risk Management Department on ERM policies, procedures and processes.
- Providing operational and business expertise to facilitate that a holistic risk treatment plan is developed for each key risk.
- Advocating and cultivating enterprise risk management culture within SDG&E, which includes being the liaison between the Risk Management Department and each individual BFA for periodic risk treatment reviews and updates.
- Identifying new key risks and working with the Risk Management Department to see that the key risks are addressed.
- Sharing best practices among BFAs and Council members.

Risk Owner is responsible for managing the risks in the BFA, including

- Seeing that risk analysis are properly conducted.
- Reviewing the risk mitigation plan(s).
- Overseeing the development and implementation of mitigation plans.
- Overseeing Contingency Plans are in place for residual risks.
- Increasing risk awareness throughout the organization.
- Assigning Risk Managers.

Risk Manager is responsible for carrying out daily activities and has the following duties:

- Utilizing risk analysis tools (i.e. risk registers, root-cause analysis, risk quantification methodology) to identify, track and measure the risks associated with the BFA;
- Implementing the organization's risk mitigation plan;
- Acting as the liaison between the organization and the Risk Management Department;
- Coordinating an annual review of Risk Mitigation and Contingency Plans and, if applicable, perform tabletop exercises with the team for awareness of individual responsibilities;
- Updating mitigation plans after deficiencies or changes are identified in the annual review;
- Coordinating with other BFAs to determine that plans are feasible and not in conflict with other business unit priorities;
- Helping coordinate the execution of the Contingency Plan in the event that a risk event occurs.

QUESTION 2:

How do you currently identify and characterize risk?

RESPONSE 2:

The risk management process/framework shown in Figure 2-1 is put into place at SDG&E to provide process guidance to all BFA's in risk identification, analysis and evaluation.

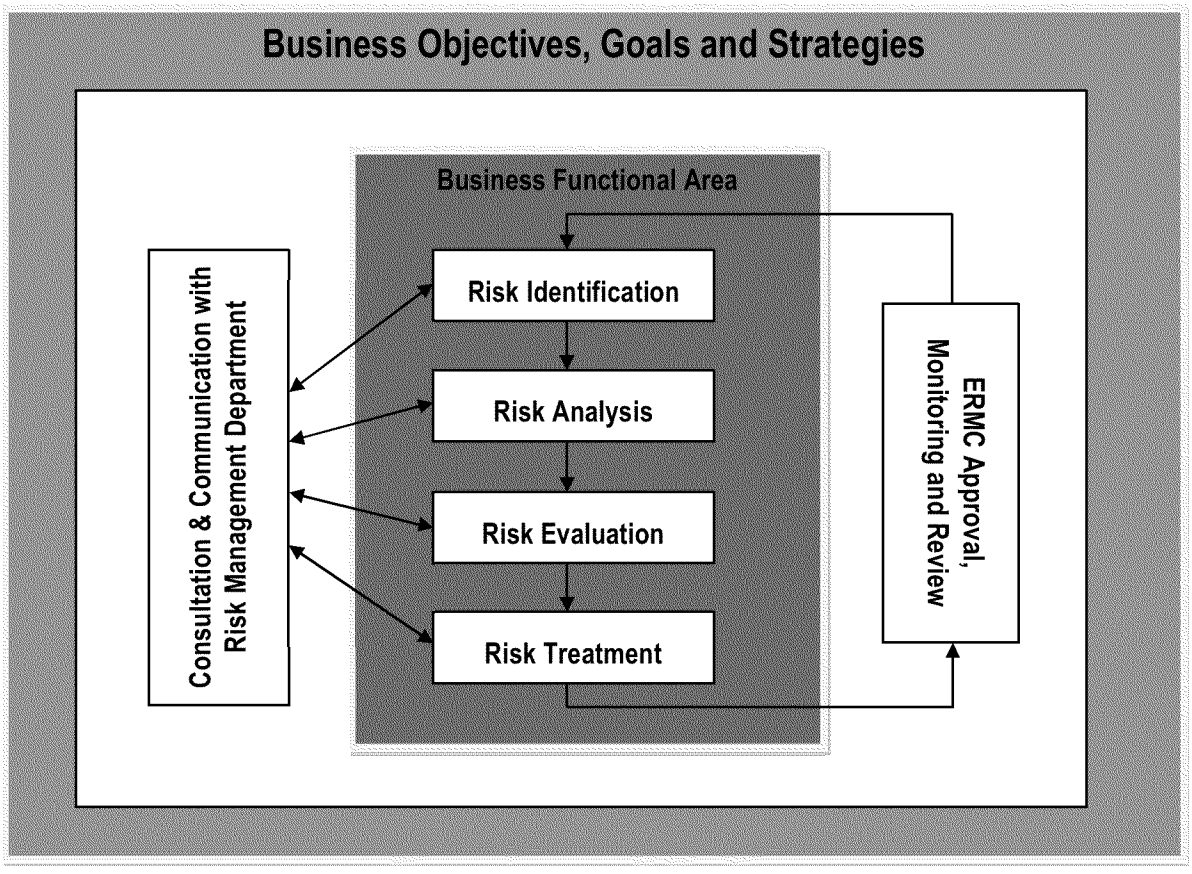


Figure 2-1 SDG&E ERM Process

Risk Identification Process

Risk identification starts with a review of the organization business objectives, goals and strategies. Once an organization (Company, a BFA or a project team) defines its objectives, goals and strategies, it generates and documents (typically in the form of a

risk register) a comprehensive list of risks that might hinder the organization from achieving its objectives.

Depending on the nature of a risk, there are different approaches to generating this comprehensive risk register, including brainstorming sessions with stakeholders and/or subject matter experts, data mining, devising "what if" scenarios, interviewing key stakeholders at various levels of management and frontline employees.

Risk identification is a recurring process. SDG&E periodically reviews and updates its risk register based on industry trends, changes of business environment and/or strategy, etc.

Risk Analysis Process

The Risk Owners/Managers, in collaboration with the Risk Management Department, conduct thorough risk analysis. The risk analysis provides enough information about the risks so that appropriate decisions on risk treatment can be developed. The risk analysis involves identifying potential risk triggers/cause and the detectability of each risk cause. Risk analysis can be undertaken with varying degrees of detail depending on the nature of the risk and the information, data and resources available at the time.

Risk Evaluation Process

The evaluation of risks includes the assessment of the effectiveness of the existing controls (aka, Strength of Controls), the consequence and the likelihood of a risk and the calculation of a residual risk gap score. While the inputs to develop the risk gap score are inherently subjective, the evaluation results are directionally correct. The purpose of risk evaluation is to aid in deciding, in accordance with legal, regulatory and other requirements, which risks need mitigation/treatment and the priority for implementation.

Implement Risk Mitigation/Treatment/Contingency Plans

Risk Owners and Risk Managers are responsible for preparation, completion implementation and periodic updating of pertinent mitigation/treatment plans. The mitigation plans are intended to provide an overview of the risk, and outline the risk treatments being conducted and those individuals responsible for ensuring the treatments are implemented and completed.

Risk treatment can include the following options:

- Removing the Risk Trigger/Cause;
- Sharing the risk with another party or parties (including contracts and insurance);
- Changing the likelihood and/or consequences;
- Retaining the risk by informed decision;
- Avoiding the risk by deciding not to start or continue with the activity that gives rise to the risk;
- Taking or increasing the risk in order to pursue an opportunity.

Risk mitigation/treatment involves a cyclical process of:

- Evaluating the current mitigation/treatment plan;
- Deciding whether the residual risk level is within the risk tolerance;
- If not, generating a new risk mitigation/treatment plan; and
- Assessing the effectiveness of the mitigation/treatment plan.

Risk contingency planning may involve a process of:

- Risk analysis (see above section on Risk Analysis);
- Prioritizing risks which may require contingency plans (taking into account likelihood and severity);
- Building scenarios of probable impacts for those risks identified as needing a contingency plan;
- Developing a contingency plan(s) for the most probable scenario(s); and,
- Updating plans for any significant changes.

QUESTION 3:

What are your top ten safety risks?

RESPONSE 3:

For SDG&E Electric Operations:

These safety risks are not in ranked in any order of risk. The safety risks can be due to damage to, or failure of SDG&E facilities as a result of normal deterioration or external factors.

- Fire Risk

  Includes damage to facilities caused by firestorms and facilities causing fires.

- Natural Disaster Impacts (and recovery from Natural Disasters)

  Natural disasters include earthquake, wind, storms, and firestorms.

- Pole Loading

- Physical Security

  Physical security risks include threats to critical power delivery infrastructure resulting from sabotage, tampering, theft, vandalism, disgruntled employees, terrorism, trespassing, or intentional hazardous chemical or fuel release.

- Cyber Security

  Cyber security has been identified as a key risk to the company. Cyber security risk owners and managers have the authority and responsibility for identifying, measuring, and managing cyber security risks in addition to implementing effective risk mitigation and contingency plans.

- Massive Smart Meter Outage

- Substation, Transmission, and Distribution Reliability

  Aging infrastructure is a key factor for system reliability which can have an impact on customer safety (e.g. outages to customers with life support or outages to traffic lights) In particular substation, transmission, and

distribution infrastructure can be a source of fire to both employees and the general public.

- Renewable Penetration – safety risk associated with reverse power flow
- Vegetation Management
- Aviation Accident

For SDG&E Gas Operations:

SDG&E's top priority is to protect the safety of employees, customers and general public. In the response to Data Request No. 2, we set forth the process we use to identify and analyze risk, including safety risks.

Listed below are the current major safety risk areas, some of which have several elements, that were identified as part of risk management process discussed in the preceding data request response.

- Public Safety
- Employee Safety
- Infrastructure Integrity
- Customer Data Privacy
- Environmental Risks
- Wildfires
- Cyber Security
- Systemwide Reliability
- Failure of Disaster Recovery
- Physical Sabotage or Terrorism

QUESTION 4:

How do you identify changes to address these risks? Are practices beyond compliance with current regulation considered?

RESPONSE 4:

For SDG&E Electric Operations:

Addressing Risk Overall

Once risks are identified they are presented to key stakeholders to develop and agree upon technically feasible, cost-effective solutions in the form of projects or programs. Upper Management approval is requested to proceed with projects or programs to address the risks and approved projects are funded and prioritized through a capital budget committee. Typically, project teams or program management teams are established to manage the activities related to risk reduction. For example, to address fire risk, SDG&E developed a comprehensive Community Fire Safety Program and assigned a Project Manager to oversee the program. Generally, SDG&E will go above and beyond current regulations to ensure we remain in compliance at all times.

SDG&E identifies risks associated with our facilities through various efforts. The following are examples of some of these efforts.

- RIRAT, the Reliability Improvements in Rural Areas Team (see additional discussion in Question 5)
- PoleCare, a program to analyze the current structural integrity of distribution wood poles and initiate remedial action beyond that performed through GO165 procedures.
- RAT, the Reliability Assessment Team, a longstanding team of distribution engineering specialists to review system robustness and recommend enhancements and upgrades. (see additional discussion in Question 5)
- Vegetation Management, a specialized program to manage the vegetation management and pole brushing efforts throughout the service territory in conformance to federal, state and local requirements, which employs career arborists with additional consultation from firefighting professionals.

- Substation Equipment Assessment (SEA) Team – This team addresses operational reliability and safety risk associated with substation infrastructure. These projects may include replacement of aging/obsolete infrastructure, substation rebuilds to address reliability concerns, hardening for seismic events, installation of additional reactive capacity, purchase of emergency equipment to reduce the duration of outages and facilitate repairs, and/or replacement of overstressed circuit breakers

Physical Security

Physical security risks at SDG&E electric system facilities are mitigated by:

- 24/7 full time network connected security monitoring
- Multiple intrusion detection trip points and sensor types (Microwave, Thermal, Motion and Fire vapor)
- Improved monitoring capabilities (expanded monitoring stations, additional monitors)
- Control House Card Key Access – ingress/egress
- Medeco "intelligent" electronic key access (audit capabilities, timed auto expiration, Lock cylinder audit abilities, etc.)
- Integrated alarm and video with maps
- Redundant alarm receivers at Mission Control and main Corp Security Operations Center
- Strengthened facility barriers
- Annual Awareness training (NERC-CIP training in MyInfo)
- Partial insurance coverage for acts of terrorism
- Corporate Security contacts with outside agencies (i.e., FBI, DHS, etc.) for threat intelligence and classified threat briefings

Cyber Security

Additionally, with the increased reliance on digital systems and communications to operate, manage and monitor the electric systems, cyber security is a major risk-management effort. These risks are addressed by:

a) Cyber security risks are defined as threats to information or technology assets that affect the confidentiality, availability, or integrity of the information systems that may have a negative impact to company operations or finances.

   Risks are assessed based on a measurement of the effectiveness of controls designed to manage risk. If the controls operate as expected, the risk posture is reflected in the outcome. These controls are generally a subset of other business controls designed to manage risk across the company. Control gaps and

deficiencies are measured as control failures. For these instances a compensating control and acceptance of an underlying risk can be used as an acceptable risk treatment.

b) While adhering to regulatory compliance objectives is a major focus for the company, the risks from cyber security threats cannot be mitigated by compliance alone. To be effective and evolve with the constantly changing threat landscape, cyber security practices must extend beyond current and proposed regulatory frameworks.

Fire Risk

Fire risks are constantly being evaluated through the disciplines and workings of the cross divisional team already noted above called the Community Fire Safety Program. This program utilizes the talents of many areas of the company to focus its efforts to identify risks related to fire, propose solutions, gain executive approval and funding, and then track the progress of the work through the CFSP Scorecard. This program was developed in-house in response to the wildfires of 2003 and 2007 and encompasses everything from operational changes, to customer outreach, to engineering work across SDG&E's system. This program is forward looking, is not mandated by a regulatory agency, is cutting edge in the utility sector and is ever expanding in its reach and function within SDG&E. SDG&E is an industry leader in the area of fire prevention and ignition reduction and goes well above current regulations to ensure we remain in compliance at all times and reduce sources of ignition on SDG&E's overhead electric system.

For SDG&E Gas Operations:

The safety risk management process is an ongoing effort described in the response to question 1 and 2. SDG&E takes an integrated approach to the identification and mitigation of risk in its operations, beginning with the design and construction of facilities and followed by continuous evaluation and improvement of operation and maintenance activities. Our safety performance is regulatory monitored and evaluated, and metrics developed and evaluated, as appropriate, to foster a culture of continuous improvement. Our goal is to continuously drive process improvements throughout our pipeline system and operations and stay abreast of industry best practices.

Once a risk has been identified, the risk is evaluated and mitigation plans put in place. The responsible BFA propose changes as necessary to address changes in an identified risk area. Although one specific department may be responsible, generally teams are formed to address the aspects of the change or the new risk. Programs to mitigate the change are then developed/modified and submitted for approval by an appropriate oversight committee. For pipeline safety, SDG&E and SoCalGas have recently created a Pipeline Safety Oversight Committee (PSOC). This Committee will now have primary oversight responsibility over SDG&E's and SoCalGas' pipeline safety programs and plans, including the utilities' Distribution Integrity Management Program (DIMP), Transmission Integrity Management Program (TIMP), Pipeline Safety Enhancement Program (PSEP), Public Awareness Plan (PAP), and the Natural Gas System Operator Safety Plans (Safety Plans) for both SDG&E and SoCalGas.

With respect to going beyond current regulations, as stated in Chapter 6 of the Utilities Safety Plan[1] the Utilities keep abreast of industry best practices and go beyond prescribed code minimums where appropriate. See Response 11 for additional details.

[1] The safety Plan was developed in accordance with PUC §961 and §963, and was approved by the CPUC in June 2013.

QUESTION 5:

Currently how do you decide on resource expenditures to address recognized risks? Who decides? How is inspection and record-keeping used in this process?

RESPONSE 5:

For SDG&E Electric Operations:

Certain risks are recurring such as deterioration of equipment due to age, environmental exposure and operational wear and tear. Resource expenditures to address these recurring risks are budgeted for on an annual basis generally based on previous years' expenditures with modifications for anticipated changes in the years to come. If new risks are identified, depending on their nature and scope, they may be funded separately as a special initiative, or integrated into the larger recurring risk mitigation expenditures. Decisions regarding resource expenditures to address risk generally are initiated based on recommendations from experienced mid-level management and subject matter experts. These recommendations are flowed up through management and are ultimately prioritized and approved by a cross functional officer team.

Inspections and record keeping are tracked by the group responsible for managing the type of work (e.g. Vegetation Management tracks work related to Vegetation risk, the Program Management team tracks records related to CMP inspections, etc.). Specific details for certain risks are further discussed below.

GO165 Maintenance Inspection
In regards to SDG&E's Maintenance Inspection program, the details are determined through evaluation of GO165 requirements combined with field experience and engineering oversight. Expenditures are generally determined through evaluation of historical expenses and then revised based on known upcoming program changes or system issues. Program review is undertaken with input from the Operating Districts, Engineering, Compliance Management and Legal departments. Analysis of ongoing system records allows SDG&E to identify trends in both technical issues and financials.

Distribution System Reliability

SDG&E prioritizes distribution system reliability improvements based primarily on cost-effectiveness. Historic outage results are used to prioritize circuits for analysis. District engineers develop alternatives for improving the high-priority circuits in their region. Each alternative is analyzed for benefit and cost. The benefit of each alternative is derived from the predicted improvements in SAIDI and SAIFI that it would produce. A benefit/cost ratio which compares the predicted SAIDI and SAIFI benefit of the alternative to the estimated construction cost is calculated for each alternative. Factors which go into this analysis include:

- The current configuration of the circuit
- Age, condition, and statistical failure rates of existing equipment
- Presence and location of automated switching (SCADA)
- Presence and location of emergency ties to adjacent circuits

The alternatives are then presented to SDG&E's Reliability Assessment Team and reviewed for technical merit. After the circuit analysis presentation, the Reliability Assessment Team approves the alternative that will provide the most cost effective reliability benefit, or requests that further analysis of the circuit be done. Approved projects are then engineered, designed, issued to construction, and funded through the Reliability Capital budget. Decision-making about reliability improvements may also consider subjective factors, such as:

- customer mix
- special needs customers
- customer complaint history
- outage history of the affected area
- availability of new technology

The Reliability Assessment Team is comprised of technical experts from various departments, including Distribution Operations, Electric Reliability, Distribution Planning, System Protection, Engineering Standards, and Regional Operations and Engineering (Districts). The primary purpose of the Reliability Assessment Team is to provide strategy and guidance to improve system reliability, and manage reliability improvement budgets. The Reliability Assessment Team also coordinates ongoing reliability improvement programs such as SCADA system expansion and the underground cable replacement program.

System Capacity

Capacity related projects are identified through the Distribution Planning Engineering team. Each specific capacity project is engineered to mitigate potential safety and reliability impacts, and preferred and alternate solutions are identified as part of this engineering process. Prior to requesting funding for specific capacity projects, each specific capacity project is presented to the Technical Review Committee (TRC). The TRC is composed of various management and technical experts from across Company departments. The TRC's is tasked with providing technical input to ensure that potential technical risks are vetted prior to specific budget being submitted for budgeting approval.

Substation Capacity and Reliability

Substation capital resource expenditures are allocated to capacity and reliability related projects. Capacity related projects are required for load growth and compliance with planning and operating criteria (e.g., addition of a transformer bank). These projects are identified via distribution planning or transmission planning (approved by the CAISO).

Substation reliability related projects address additional risks which are not captures in the planning processed. These projects may include replacement of aging/obsolete infrastructure, substation rebuilds to address reliability concerns, hardening for seismic events, installation of additional reactive capacity, purchase of emergency equipment to reduce the duration of outages and facilitate repairs, and/or replacement of overstressed circuit breakers. Prior to upper management approval and capital budget approval, these projects and risks are presented to key stakeholders such as SDG&E's Substation Equipment Assessment Team. The team develops and agrees upon the best project considering technical merit and cost-effectiveness.

Community Fire Safety

SDG&E has developed a Community Fire Safety Program (CFSP) that consists of a cross divisional team to better evaluate, address and coordinate all aspects of fire risk and safety for SDG&E. This team consists of members from engineering, operations, customer service, media, vegetation, environmental services, the EOC, and fire coordination to name a few. The function of this team is to identify, coordinate, measure and track a wide variety of programs and services that deal with reducing and eliminating sources of ignition found on the SDG&E electric system as well as provide a platform for outreach to customers, fire agencies/councils, and other emergency response agencies. The platform to track all the programs associated with the CFSP is the 'CFSP Scorecard'. The CFSP Scorecard endeavors to note and track fire specific programs and events geared at fire reduction and elimination. A Project Manager in the Electric Transmission & Distribution Engineering Department maintains the Score Card.

It is distributed to approximately 80 employees, up to and including the VP level. Bi-weekly, the Project Manager holds a meeting and task statuses are reviewed. The Score Card includes the task, target completion date, percent complete, and color keyed statuses green, yellow and red).The two primary goals of the Score Card are to ensure that regulatory requirements are met, and the company is ready for the September 1st start of fire season.

The tasks noted on CFSP Scorecard are a mix of required regulatory and voluntary tasks and plans in the areas of:

1. Communications to interested parties (residents, fire agencies, governments, special interest
2. groups and Communication Infrastructure Providers (CIPs))
3. Education forums for interested parties
4. Infrastructure inspections and hardening
5. Vegetation management
6. Weather monitoring
7. Transmission and distribution design standards
8. Pre-event crew and generator mobilizations
9. Revised circuit reclosing protocols based on weather conditions
10. Score Card

A multi-disciplinary technical team of subject matter experts within SDG&E, named the "Reliability Improvements in Rural Areas Team" ("RIRAT"), was formed and tasked with (a) developing a multi-dimensional understanding of the complex fire-risk issue within the SDG&E service territory, (b) assessing the conditions which pose the greatest risks related to fire, (c) determining the level of risk mitigation that could be provided by various proposed projects, and (d) assigning priorities to capital and operating programs and projects that could address fire-related risks in the Fire Threat Zone. SDG&E's Fire Threat Zone and Highest Risk Fire Area maps identify areas where the potential for uncontrolled wildfires, and potentially the greatest losses, is the highest. The RIRAT focuses its attention on facilities and activities in these areas so as to assure all prudent and cost-effective fire-prevention measures are promptly evaluated and implemented.

The RIRAT is led by the SDG&E Asset Management and Smart Grid Department and includes managers and engineers from the Asset Management and Smart Grid Projects Department, the Electric Transmission and Distribution Engineering Department, the Electric Regional Operations Department, and the Electric Finance and Operations Management Department.

The RIRAT, among other things, oversees the evaluation and implementation of the various fire-hardening activities described above. Its work is guided by the following specific goals and objectives:

- Improve the distribution system in the Fire Threat Zone and Highest Risk Fire Area;
- Develop statistical measures for assessing distribution-system performance relevant to fire-related risks so as to provide an understanding of the scope of the risks that must be addressed and develop metrics for measuring improvement;
- Identify and prioritize areas posing the greatest fire-related risks;
- Develop guidelines and a portfolio of solutions to minimize fire-related risks;
- Develop a multi-year plan for the rebuilding of circuits creating the greatest and/or most probable fire-related risks;
- Review and analyze all reports of "wire-down" occurrences; and,
- Use the "wire-down" analysis to identify causes and best solutions so as to minimize future occurrences and fire-related risks.

Wood Pole Replacements

SDG&E has a program to undertake a large-scale replacement of wood poles used in those portions of the SDG&E sixty-nine (69) kilovolt transmission and twelve (12) kilovolt distribution system located in the Fire Threat Zone and Highest Risk Fire Area, substituting steel poles in their place. These poles are designed to withstand working loads under the stress of eighty-five mile-per-hour (85 mph) wind speeds. To date, SDG&E has installed over 3,000 new steel poles in the Fire Threat Zone, and plans on further investment to aggressively continue to replace wood distribution and transmission poles with steel poles. When identified, these new steel pole facilities are being installed in conjunction with the application of heavier conductors which allow SDG&E to increase the spacing between lines beyond the requirements of Commission General Order 95, resulting in a decrease in the likelihood live lines will come into contact with one another or arc after being struck by flying debris. In addition, SDG&E's current design standards now reflect the use of steel poles over wood poles in the Fire Threat Zone.

Vegetation Management

Vegetation Management utilizes prior year's treatments and cost to address risks. Risk considerations include: vegetation growth, weather and environmental changes, current vegetation mortality, and history on circuit reliability. These considerations help forecast current and future work load. Vegetation work is recorded, managed, and invoiced by

means of a databases designed for vegetation management work. Budgets are reviewed, approved, and monitored closely through upper management. Unforeseen or unplanned work such as the "*2003 Governor's State of Emergency Proclamation to prevent catastrophic forest fires due to bark beetle infestation*", SDG&E partnered with its contractor and agencies to ramp up additional qualified resources to perform the mandated work and submitted a filing to the CPUC for reimbursement.

For SDG&E Gas Operations:

As with all work undertaken by the utility, the funding for activities to respond to risk elements as identified in the processes outlined in response to question 1 and 2 is done within the construct of the company's approved Revenue Requirement.

Periodically (in recent cases every four years) the Utilities each file a General Rate Case (GRC) application to establish the revenue requirement to provide natural gas service to our customers. Provided within the Application is the Base Year actual expenditures and high level forecasts of spending in the interim (2) years and Test Year. These estimates may be based on historical spending patterns, incremental activities from the base year, zero-based project specific calculations, or a combination of these methods. They are completed nearly 3 years prior to the commencement of the rate cycle, but provide general insight into the Utility's expectations of work requirements and are the foundation for the Post-Test Year revenue requirement calculations. To the extent previously identified or foreseen, embedded in this request may be funding to address and mitigate previously identified risk elements.

Most recently (TY2012 GRC) the Commission adopted a traditional non-balanced funding mechanism for projected Capital and O&M expenditures, as well as two-way balanced funding mechanisms for Transmission and Distribution Integrity Management Program (TIMP and DIMP, respectively) capital investments and expenses.[2] Within these two balanced programs the utilities have embedded work elements to address threats to the pipeline system. See also the Response to Question 7 for discussion of the TIMP and DIMP programs

The Commission may also review and approve funding for large Transmission and Distribution projects that are not recurring or routine in nature through a ratemaking process separate from the GRC.

[2] Effective January 1, 2012, Transmission Integrity Management Programs (TIMP) established pursuant to Subpart O (commencing with Section 192.901) of Part 192 of Title 49 of the United States Code, or related capital expenditures for the maintenance and repair of transmission pipelines, must be funded through a balanced account per Public Utilities Code section 969.

During the annual budgeting process work elements are then prioritized based on most recent operations information balancing system needs, compliance obligations, safety factors, and revenue requirements.

Generally early 3rd quarter of the year, the Company begins the O&M and Capital allocation process leading to organizational budgets. Initial broad estimates of spending are submitted by the field organizations as part of the Company's 5-Year planning process. This may include funding to address programs identified to mitigate various risks. Senior management convenes to review these inputs and establish an overall total O&M and capital expenditure levels consistent with commitment to safety, understanding of operational needs, compliance requirements and authorized revenues. Based on these guidelines, managers and/or directors from various departments convene for a focused assessment of spending requirements and determination of annual budget allocations to an organization and/or project. This review often takes into consideration more current information regarding the status of ongoing work elements, asset condition, compliance schedules, and/or maintenance records. The determination of the annual budget can include an informal open dialog forum where each participant can be expected to describe and articulate the underlying assumptions of their projected needs. Collectively then a budget is established balancing work in progress, safety and compliance concerns, and overall funding guidelines. These results presented to senior management for their concurrence. This allocation then becomes the annual operational budget for each area.

Because of the more structured nature of the work and the prioritization efforts the budget development for the TIMP and DIMP programs are generally driven by regulated compliance requirements and/or program objectives. The development of these budgets will incorporate inspection information to validate its assumptions of work or to expand the scope of work.

But work elements are dynamic and fluid. The organizations must be responsive to changing operational needs due to changes in: Regulatory and/or agency requirements, operational requirements, and/or conditions identified during maintenance, inspection and assessment activities. These situations may drive the identification and re-prioritization the timing of operational work activities. Significant elements of change are raised by the organization to the attention of managers/directors and/or senior management. At that time the collective team will consider items for reprioritization and adjust spending expectations to accommodate the newly identified conditions. This again is often an informal and focused discussion session from which the senior management will balance work in progress, safety, compliance concerns and overall funding guidelines.

Thus, from the time the Revenue Requirement is established and through the rate case cycle, all levels of management are engaged working to balance the expenditures while meeting regulatory, safety and operational requirements and objectives.

QUESTION 6:

What is the role of executive management in making or accepting these decisions?

RESPONSE 6:

Executive Management is apprised of risks through a combination of methods. Immediate risks are resolved, but enterprise implications are shared with responsible executives immediately through briefings. Subsequent to the immediate briefings the executives are kept current on program development through monthly 1X1 sessions with the responsible Director. Once the longer term mitigation strategies are established in a mitigation program the programs are shared with a broader executive audience through a variety of presentations and approval sessions. Executive management sets policy objectives and has final approval authority over funding levels as well as general prioritization of how that funding should be spent. Program funding is approved either through Executive Finance Committee presentations or through annual budgeting executive approval process.

See the Response to Question 5 for overview of Executive Management in the resource allocation process.

QUESTION 7:

What are the major elements in your approach to managing safety risk? Specify programs or practices your company has in place to manage safety.

RESPONSE 7:

For SDG&E Electric Operations:

General

SDG&E addresses and manages safety risks in a myriad of ways. First and foremost, SDG&E has a Safety Department that addresses safety issues continuously. They look at everything from how to reduce sprains and strains to developing contingency plans for a potential future pandemic. The Safety Department evaluates current work practices, looks at any safety/incident related reports to analyze trends, the analyze near miss incidents, and they constantly work on promoting Behavior Based Safety (BBS). As with most electric utilities, safety is paramount to SDG&E.

Physical Security Programs and Practices:

- 24/7 full time network connected security monitoring
- Multiple intrusion detection trip points and sensor types (Microwave, Thermal, Motion and Fire vapor)
- Improved monitoring capabilities (expanded monitoring stations, additional monitors)
- Control House Card Key Access – ingress/egress
- Medeco "intelligent" electronic key access (audit capabilities, timed auto expiration, Lock cylinder audit abilities, etc.)
- Integrated alarm and video with maps
- Redundant alarm receivers at Mission Control and main Corp Security Operations Center
- Strengthened facility barriers
- Annual Awareness training (NERC-CIP training in MyInfo)
- Partial insurance coverage for acts of terrorism
- Corporate Security contacts with outside agencies (i.e., FBI, DHS, etc.) for threat intelligence and classified threat briefings

Vegetation Management

SDG&E Vegetation Management hold its contractors to a high standard of Safety. Key Performance Indicators are built into Vegetation Management Contracts. Vegetation Management meets bi-weekly with contractors to discuss safety and work progress.

Safety topics include any near misses, incidents, weather, customer concerns, and compliance with Schedule and Regulations. Vegetation Management Foresters and Contract Administers also conduct regular Contractor Field Safety Check; these are recorded and discussed at Biweekly meetings addressing both the positive and negative field issues observed. SDG&E Foresters have the latitude to shut a contract crew down if an unsafe practice is observed. Any unsafe practice is taken seriously and addressed with contractor management. In the event of an incident, contractors are required to provide an incident investigation along with action plans to correct or prevent any future incidents. In addition, Vegetation Management conducts an Audit of all contractor work to ensure work performed meets or exceeds Scope of Work for Compliance, Quality, and Safety.

Contract Crew Safety

SDG&E also holds Quarterly Contractor Safety Meetings. These safety meetings allow SDG&E to share its own Safety Performance and focus on areas or trends being observed. It also allows a forum for Contractors to present on how they are managing Safety and any new programs being implemented or industry changes that may affect how they perform work.

For SDG&E Gas Operations:

Please see responses to Questions 1, 2 and 4.

Beyond the safety plan, standards, policies and programs, our business practice is address safety issues as they are encountered. Once an issue is identified, Gas Engineering will review its policies and procedures to see how to best address it. This includes incorporating industry findings and possibly piloting solutions. Once the solution has been verified as a viable approach, it will be deployed and policies revised. SDG&E also follows these procedures from its Safety Plan:

From SDG&E's Natural Gas System Operator Safety Plan Executive Summary filed June 29, 2012 in R.11-02-019. Pages 4-5

A. Safety Systems

Public Utilities Code Section 961 requires natural gas system operators to:

(1) Identify and minimize hazards and systemic risks; and

(2) Identify the safety-related systems that will be deployed to minimize hazards.

SDG&E has numerous programs in place to try to identify and resolve potential problems before a safety-related incident occurs. These programs include extensive operating and maintenance plans, public awareness plans, employee training programs, as well as the Transmission Integrity Management Program (TIMP), which provides assessments and improvements on transmission pipelines, and the Distribution Integrity Management Program (DIMP), which focuses on identifying potential threats to distribution lines and deploys measures designed to reduce the likelihood and consequences of pipeline failures.

These programs and plans are backed by a comprehensive set of Gas Standards for design, construction, operations and maintenance that are routinely reviewed and updated to reflect current regulations and best practices. In the area of integrity assessments, SDG&E only uses approved methods. Where operationally feasible, our preferred assessment method for transmission pipelines is in-line inspections (commonly referred to as "smart pigging"). In-line inspections allow pipelines to be internally inspected with sophisticated smart pigging tools.

For Pipeline Infrastructure:

The following plans and programs are in place to identify and minimize hazards and systemic risks in the pipeline infrastructure, and promote public safety and property protection.

- Transmission Integrity Management Program (TIMP)
- Distribution Integrity Management Program (DIMP)
- Operation and Maintenance Plan / Gas Standards
- Pipeline Safety Enhancement Plan (PSEP)

TRANSMISSION INTEGRITY MANAGEMENT PROGRAM

The Transmission Integrity Management Program (TIMP) is an ongoing program that was developed in accordance with the requirements of the Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA), specifically Title 49 Code of Federal Regulations Part 192, Subpart O - Gas Transmission Pipeline Integrity Management. The TIMP written plan describes how SDG&E complies with the requirements of CFR 192 subpart O.

The written plan outlines the approach to implementing the requirements of the Rule and the referenced industry standards, including ASME B31.8S and NACE SP0502-2008. The document includes a description of each required Program element and identifies or references the procedures and processes for completing those requirements. The TIMP written plan has sixteen chapters that are the policy documents for compliance with the gas transmission pipeline integrity requirements. The TIMP is designed to provide assessments and integrity improvements on transmission pipelines

by outlining responsible parties, timelines for each process element, lessons learned, and a best practices methodology. Processes are aimed at identifying threats through data gathering and routine testing, assessing materials integrity, and determining remediation, preventive and mitigation steps for those threats.

As part of this program, information concerning the pipeline infrastructure, operating environment and performance history is integrated into a broad evaluation of the pipeline and its environment. This information is analyzed for each pipeline segment being assessed and specific integrity-related work plans are developed.

SDG&E employs the following pipeline integrity management activities to assess and evaluate pipelines in the system: in-line inspections, pressure testing, and direct assessment. Where operationally feasible, the preferred assessment method for transmission pipelines is in-line inspections. These evaluations address the efficacy of the systems in place to maintain the safe operation of the transmission pipeline including corrosion control and damage prevention programs.

DISTRIBUTION INTEGRITY MANAGEMENT PROGRAM

The Distribution Integrity Management Program (DIMP) is an ongoing program that was developed in accordance with the requirements of the DOT and PHMSA, specifically Title 49 Code of Federal Regulations Part 192, Subpart P – Distribution Pipeline Integrity Management. SDG&E published its DIMP written plan in August 2011. The program's purpose is to improve pipeline safety by having operators identify and reduce pipeline integrity risks on distribution pipelines.

SDG&E's DIMP focuses on potential threats and measures designed to reduce the likelihood and consequences of pipeline failures. Specifically, it addresses system knowledge; threats; evaluation and ranking of risk; measures to address risks; performance measurement; results monitoring; effectiveness evaluation; periodic evaluation and improvement; and results reporting. SDG&E's written DIMP plan has nine chapters and requires the integration of data from many sources for analysis and subsequent action based upon that analysis.

The DIMP includes certain activities SDG&E has routinely performed in the past, and it requires the development of a more formal and structured approach toward the Company's traditional core regulatory pipeline integrity-related obligations.

New regulatory reporting requirements have also been added in Subpart P of our DIMP written plan that include the reporting of above-ground leak repairs, hazardous leaks resulting from mechanical fitting failure, the number of excavation tickets, the number of

excess flow valves installed, and other safety performance information.

OPERATION AND MAINTENANCE PLAN

SDG&E's Operation and Maintenance (O&M) plan is a compendium of over 127 policies that meet the requirements 49 CFR 192.605 "Procedural manual for operations, maintenance, and emergencies." Further, the documents referenced by the O&M plan identify and prescribe activities to minimize pipeline systemic risks and document its history. The O&M plan includes policies that address:

- Operating, maintaining, and repairing the pipeline and components;
- Controlling corrosion;
- Availability of construction records, maps, and operating history;
- Start up and shut down of the pipeline;
- Maintenance and operation of compressor stations;
- Review of procedures to determine effectiveness and adequacy;
- Safety procedures for excavation;
- Control room management; and;
- All other required topics.

The O&M plan is reviewed annually to verify that the referenced documents containing policies and procedures remain in compliance with the requirements of the relevant sections of 49 CFR regulations. The policies and procedures referenced are updated throughout the year in response to new information or regulations, technology, or other items that drive improvement to the policy.

Individual documents referenced by the O&M plan undergo full functional reviews at least every five years. Training programs are reviewed in the same timeframe as associated gas standards so employees are aware of and perform tasks according to the current requirements. To help employees remain knowledgeable of the applicable policies and procedures, including those related to safety, SDG&E provides annual review training for its operating employees.

PIPELINE SAFETY ENHANCEMENT PLAN

SDG&E submitted its Pipeline Safety Enhancement Plan (PSEP) with the Commission in August of 2011 in response to the Commission's directive that all gas corporations subject to the Commission's jurisdiction develop and implement a plan to replace or pressure test all transmission pipelines that have not been tested to modern standards. The Commission also required that gas corporations include in their safety enhancement plans proposals for automating shutoff valves. The primary PSEP elements include:

- A two-phased approach and prioritization process for the pressure testing or replacement of transmission pipeline segments that were not tested to modern standards.
- Criteria for determining whether to pressure test or replace pipeline segments.
- A proposal for enhancing SDG&E's valve infrastructure. This proposal includes installing additional remote control and automated shutoff valves, and installing supporting equipment and system features on transmission pipelines.

All testing, replacement, valve work and other infrastructure activities completed as part of the PSEP shall be completed in accordance with this Safety Plan. PSEP also offers proposals to enhance the pipeline system beyond measures required by the Commission through retrofitting pipelines with existing and emerging technologies to provide advance warning of potential pipeline failure and decrease the time to identify, investigate, prevent, remedy or manage the effects of such an event, and it includes alternatives that can be adopted by the Commission that are designed to reduce costs for customers.

QUESTION 8:

Do you currently have practices designed to support management of compliance, safety risk and/or quality?

RESPONSE 8:

For SDG&E Electric Operations:

SDG&E has groups/teams focused on compliance, safety, risk management, and quality control. For example, SDG&E's Compliance Management team ensures SDG&E's maintains compliance with GO 95, GO 128, GO 165, GO 166 and GO 174 requirements. These SDG&E groups also perform QA/QC audits to ensure compliance with the applicable code requirements.

In addition to having groups assigned to manage compliance, safety, risk management, and quality, there are also internal engineering, design, and construction standards and policies that have been established related to ensure compliance with code requirements, to enhance safety, to reduce risk, and to improve quality. SDG&E coordinates and performs QA/QC reviews to ensure these internal standards are met.

The major groups are:

Distribution Standards and Design
Distribution Engineering has a dedicated group that focuses on work methods. All standard practices for working on the electric distribution system are reviewed for safety practices, and all new or proposed equipment and tools are also evaluated for safety for our crews, the public and the environment. (A similar environment exists for Electric Transmission standards and design).

Our Supply Management department monitors all quality issues with equipment and produces a monthly report that is summarized quarterly and annually to indicate the quality issues by supplier and equipment stock number. Suppliers are held accountable for product deficiencies and may be removed from the approved vendor list if they are not able to meet our quality requirements.

Substation Design and Standards

Internal substation engineering and design standards are in place to allow for cost effective and quality substations that minimize operational and safety risk. These standards are based on our own experience and industry best practices and are reviewed as needed to incorporate lessons-learned during construction of current projects. The standards will apply to designs for new substations and modifications to existing substations issued for construction after the most recent revision of the standard. For example, based on recent experiences and industry input, SDG&E is currently implementing polymer bushing technology on new transmission-class transformers and circuit breakers for seismic benefits, increased safety, and lower maintenance requirements.

The internal substation standards pull from IEEE standards that recommend engineering principles, such as IEEE Standard 1527 "Recommended Practice for the Design of Flexible Bus work Located in Seismically Active Areas". For the structural components in substations ASCE and UBC requirements are followed. Additionally, there are numerous IEEE standards that detail industry best practices for specification of the electrical equipment that are followed by our suppliers, such as IEEE Standard C57.12.00, "IEEE Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers".

Civil/Structural Engineering

For SDG&E Gas Operations:

Yes. SDG&E uses and maintains a comprehensive set of policies and gas standards which govern operations and maintenance activities for the pipeline system. Our Safety Plan is our overarching policy on safety. It includes virtually all of the requirements, instructions and guidelines related to the management of compliance, safety risk and quality of the work performed on the pipeline system. Appendix A of SDG&E's Safety Plan lists all of the Safety Policy documents used by the utility

QUESTION 9:

If yes, on what management directive, guidelines, standards or process design criteria have you based the design of these practices?

RESPONSE 9:

For SDG&E Electric Operations:

Please see response to Q8.

For SDG&E Gas Operations:

The programs, practices and policies of SDG&E have been developed over many decades and were not all initiated by a specific management directive or guideline. Many were initially developed in response to specific regulatory requirements, but also as a result of best practices shared & developed in cooperation with other operators, new and more effective technology and the evolution of a shared commitment to continuous improvement.

Current executive management directives, guidelines & standards are best summarized in Sections 2-2 of the Safety Plan issued in December 2012.

> *2 SENIOR MANAGEMENT TEAM SAFETY PERFORMANCE STATEMENT*
> *At SDG&E, the safety of our customers, employees, and communities has been and will be our top priority. This tradition of safety spans more than 140 years, and is the foundation for company programs, policies, procedures, guidelines, and best practices. Management's pipeline safety expectations can best be described by the following Commitment to Safety statement that every member of our Senior Management Team wholeheartedly endorses:*
>
> > *SDG&E's longstanding commitment to safety focuses on three primary areas – employee safety, customer safety and public safety. This safety focus is embedded in what we do and is the foundation for who we are – from initial employee training, to the installation, operation and maintenance of our utility infrastructure, and to our commitment to provide safe and reliable service to our customers.*
> >
> > *-- SDG&E's Commitment to Safety*
>
> *3 POLICY PRINCIPLES AND PERFORMANCE EXPECTATIONS*
> *SDG&E's safety-focused culture and supporting organizational structure allow the company to be proactive and accountable in the safe delivery of natural gas and supporting services. The company continuously strives for a work environment where employees at all levels can raise pipeline infrastructure, customer safety, and employee safety concerns and offer suggestions for improvement.*

SDG&E's safety performance will be regularly monitored and evaluated in accordance with all state and federal regulations. Additional performance metrics shall be developed and evaluated, as appropriate, to foster a culture of continuous safety improvement. These performance metrics shall be reviewed and communicated in accordance with the schedules identified in the specific policy, program, plan or other document incorporated as part of the Safety Plan.
In addition, SDG&E shall monitor the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) website for new regulations and advisory bulletins and act upon any applicable regulations and bulletins in a timely manner, and verify that changes in regulations are reflected in policies, standards, procedures and employee training.

4 GOALS AND OBJECTIVES
SDG&E takes an integrated approach to pipeline integrity and safety, beginning with the design and construction of facilities and followed by continuous evaluation and improvement of operation and maintenance activities, public communication and awareness, emergency response, safety programs and practices, the implementation of new technologies, and a workplace that encourages continual open and informal discussion of safety-related issues.
Our goal is to continuously drive process improvements throughout our pipeline system and operations, to meet state and federal safety regulations, and to stay abreast of industry best practices.

5 PROGRAM REVIEW AND MODIFICATIONS
All components of this Safety Plan must be reviewed and updated per their scheduled review period listed in the table below:

Document Type	*Review Cycle*
Safety Plan	*Annually (not to exceed 15 months)*
Gas Standards	*At least every 5 years*
TIMP *O&M* *Control Room Management*	*At least annually*
DIMP	*At least every 5 years*
Form Instructions	*Every 5 years*
Environmental	*Every 2 years*
Information Bulletins	*6 months*

If changes are needed, they shall be made as soon as practicable through the Request to Publish process, and not deferred until the next scheduled review. This Safety Plan has been reviewed and approved by the officers of San Diego Gas and Electric Company. Their signatures are appended to the Executive Summary which prefaced the Safety Plan filed on June 29, 2012 and acknowledged their commitment to safety and affirmed the de facto implementation of the Safety Plan.

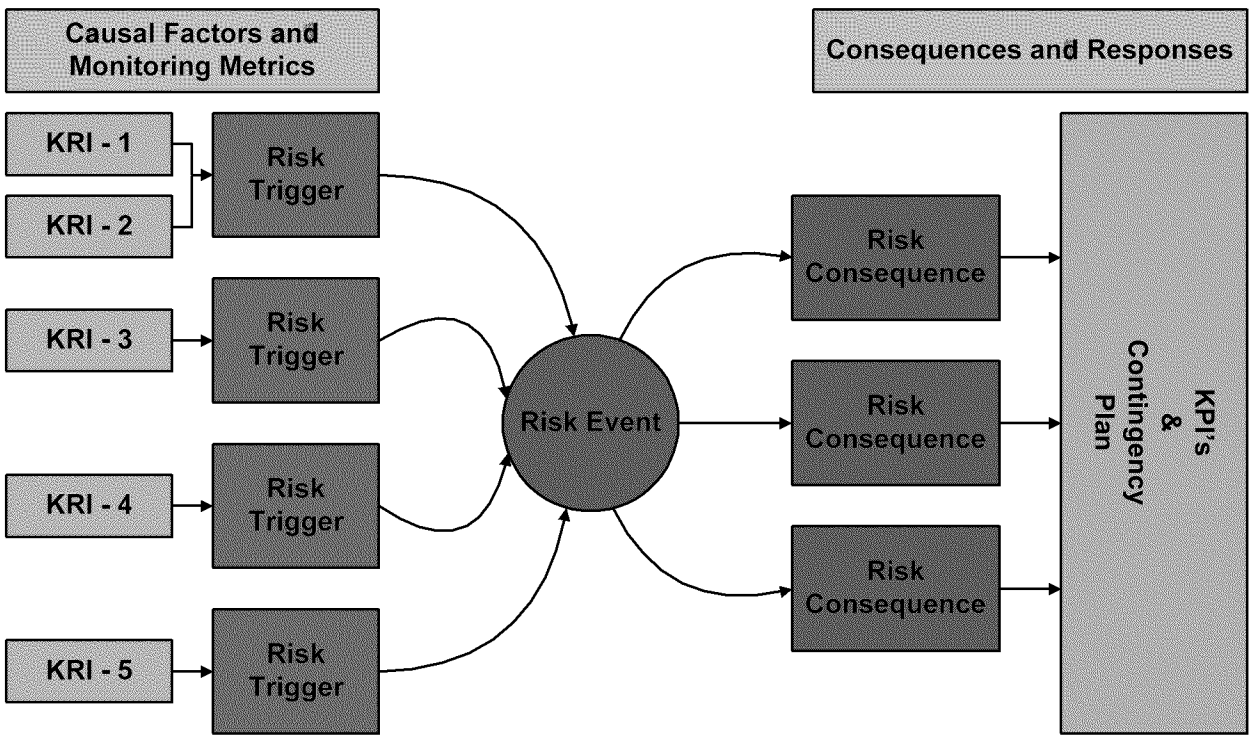
During the annual review of the Plan, I, the standing Engineering and Operations executive officer affirm that the Plan, as approved and implemented, continues to reflect the commitment of the Company's officers.

QUESTION 10:

How do you monitor trends in performance for your own management purposes (including but beyond regulatory reporting requirements)?

RESPONSE 10:

Two types of metrics, based on historical trends and data collection, are used to monitor risks. The first set of metrics is Key Performance Indicators (KPI), which are used to measure business results and, inherently, these are lagging indicators. The second set of metrics is Key Risk Indicators (KRI), which are measuring the performance of risk triggers and, therefore, the leading indicators of a risk profile.



Like KPI's, KRI's need to be quantifiable so the management can track in time series against standards or limits. SDG&E is in the process of developing KRIs for certain key risks and will enhance its data mining effort to include more internal and external data sources in detecting risk and risk trend.

SDG&E and SoCalGas also work with the Sempra Internal Audit group. Based on the audit reports, we can assess the strength of controls of a mitigation plan.

For SDG&E Electric Operations:

GO 165 Corrective Maintenance Program (CMP)

Monthly reports are generated which evaluate both program progress and financial performance. Reports are targeted to stakeholders and process managers and allow for performance evaluation of company operating units and some aspects of system performance.

Transmission Maintenance

SDG&E Transmission Construction and Maintenance Department monitors circuit availability, analyzes forced outages, and reviews inspection conditions found, for trends in performance. SDG&E annually documents maintenance tasks planned, completed and notes exceptions from planned tasks in the Standard Maintenance Report System (SMRS) filed with California Independent System Operator (CAISO). The SMRS may be used to identify trends, observations of circuit inspection and maintenance performance when compared with previous reports. Additionally, CAISO tracks SDG&E's schedule transmission circuit outages and forced interruptions/outages. Analyses of scheduled and forced outages provide circuit availability measures which are used to monitor performance. SDG&E also performs analysis on failed equipment to identify immediate defects vs. longevity.

Substation Maintenance

Equipment reliability and performance is measured in two separate ways. For low dollar equipment, failure analysis is performed to determine trends in failure types that can be mitigated with proactive replacement or changes to SDG&E's maintenance practices. For higher dollar items, it becomes more cost effective to perform predictive failure analysis utilizing diagnostic testing and online monitoring systems to detect impending failure of equipment and mitigate the potential failure with an action plan.

For SDG&E Gas Operations:

As part of the Safety Plan activities described in Question 9 above, reports are created and reviewed by staff and operating line organizations to monitor trends in performance for our own management purposes.

The Risk Assessment portion of TIMP includes provisions for annually running and reviewing the output of the risk model and determining if program changes are warranted based on those results. These changes include consideration to modify Inspection Intervals or Inspection Methods.

Through DIMP SDG&E employs several layers of programs to address risk. These programs include both required activities based on 49 CFR Part 192 plus additional programs and activities SDG&E has determined are prudent to further address and reduce identified risks to the pipeline system. The performance and effectiveness of these programs is monitored and reviewed annually.

Employee safety metrics are also monitored on an ongoing basis. As described in the response to Q12, SDG&E monitors both leading and lagging safety indicators. Safety statistics and trends are tracked on an on-going basis. Annual goals are established and performance is monitored on both a year-to-date and 12-month moving basis. The most significant lagging indicators include First Aid Cases, OSHA Recordable Incidents, Lost Time Incidents and Controllable Motor Vehicle Incidents.

QUESTION 11:

How do you keep up with industry best practices? Which industry standards do you follow? What do you do with what you learn? Please provide examples.

RESPONSE 11:

The essence of SDG&E and SoCalGas' ERM programs is based on ISO 31000, albeit there is no "one size fits all" due to the differences in organizational culture and/or structure.

The Risk Management Department also actively participates and contributes to the Deloitte Power & Utilities Enterprise Risk Management Roundtable ("Roundtable"), a forum monitored by Deloitte and attended by over 40 utilities in the North Americas. The main purpose of this Roundtable is for the utilities to share their ERM concerns, best practices and lessons learned. The forum meets two to three times a year and the discussion topics are based on the suggestions of all participants. We also read industry publications, such as consultants' reports to keep up with the progress in the ERM area.

The discussions at the Roundtable with our peers provide insights to various ERM challenges and successes. Based on what SDG&E has learned from its peers, it has enhanced its risk evaluation framework, introduced KRI practices, as well as made a few other improvements.

For SDG&E Electric Operations:

SDG&E keeps up with industry best practices by attending conferences (e.g. Institute of Electrical and Electronics Engineers IEEE, T&D, DistribuTech) by participating in technical committees (e.g. IEEE committees and subcommittees), by subscribing to industry related periodicals/literature, by participating in industry organizations (e.g. EPRI, NEETRAC, CEATI, ICC), and by collaborating with other utilities throughout the United States and outside of the country.

The industry standards followed depends largely on the functional area. Examples of industry standards followed by SDG&E include, and are not limited to the following:

Internal substation engineering and design standards are in place to allow for cost effective and quality substations that minimize operational and safety risk. These standards are based on our own experience and industry best practices and are reviewed as needed to incorporate lessons-learned during construction of current

projects. The standards will apply to designs for new substations and modifications to existing substations issued for construction after the most recent revision of the standard. For example, based on recent experiences and industry input, SDG&E is currently implementing polymer bushing technology on new transmission-class transformers and circuit breakers for seismic benefits, increased safety, and lower maintenance requirements. The internal substation standards pull from IEEE standards that recommend engineering principles, such as IEEE Standard 1527 "Recommended Practice for the Design of Flexible Bus work Located in Seismically Active Areas". For the structural components in substations ASCE and UBC requirements are followed. Additionally, there are numerous IEEE standards that detail industry best practices for specification of the electrical equipment that are followed by our suppliers, such as IEEE Standard C57.12.00, "IEEE Standard General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers".

For overhead T&D line design, GO 95 is used as the basis for construction standards. GO 95 requirements are supplemented with ASCE and ANSI standards (e.g. ANSI O5.1 for wood poles). In some cases, the National Electric Safety Code has been used to develop internal standards.

Transmission compliance activities are largely driven by NERC and CAISO standards. Distribution compliance activities are based on internal standards developed to ensure compliance with CPUC general order requirements (GO 95, GO 128, and GO 165). SDG&E collaborated with other utilities in developing.

For T&D cable systems, there are Insulated Conductors Committee (ICC) and the Association of Edison Illuminating Companies' (AEIC) Cable Engineering Committee standards that are followed.

For Vegetation Management, SDG&E utilizes NERC reliability standard FAC-003 which defines vegetation management for high voltage transmission lines. SDG&E also follows applicable public resource codes in designing and implementing its other vegetation practices.

For SDG&E Gas Operations:

As articulated in our safety plan, the Utilities have an active business process to identify, monitor and incorporate best practices as applicable. In addition, the Utilities participation in industry groups has been a two-way communication vehicle, where we not only obtain best practices but are called upon to share our practices because when compared to others, the Utilities have been successful to stay on the forefront. Some examples are as follows:

- AGA White Paper on use of ASV/RCV Technologies (contributed and co-authored)
- AGA White Paper on Sewer Lateral Cross Bores (contributed)
- ASME Technical Paper on *Geohazard Identification and Mapping Along Pipeline Right-of-Ways Using Space-Borne Synthetic Aperture Radar co-authored)*
- Landslide and subsidence hazard guidelines
- Effects of Non-typical Loading Conditions on Buried Pipelines
- Guidelines for the Seismic Design and Assessment of Natural Gas and Liquid Hydrocarbon Pipelines
- Static and Dynamic Analysis of Highly Tensioned Suspended Pipeline Spans
- Acceptance Criteria for Mild Ripples in Pipeline Field Bends
- Guidelines for the Design, Construction, Inspection and Maintenance of Cable Supported Pipeline Bridges
- Wrinkle Bend Integrity Study on Gas and Liquid Pipelines
- Effectiveness of Geosynthetic Fabric Interfaces in Reducing Soil Loads on Buried Pipelines
- Effects of Static and Cyclic Surface Loadings on the Performance of Welds in Pre-1970 Pipelines
- Automated Detection of Subsidence Ground Movement Using Satellite Remote Sensing
- Enhanced Model and Practice Guideline for Horizontal Directional Drilling
- Pipeline Integrity Management for Ground Movement Hazards
- *Presented at AGA 2012 Best Practices on Materials Management Tracking and Traceability*
- *Presented at AGA 2013 Best Practices on Public Awareness*

The following excerpt from the Safety Plan is provided below as a reminder of our process.

1. *EMERGING ISSUES AND CALIFORNIA PUBLIC UTILITIES CODE § 961 (d)(11)*

   In D.12-04-010, the Commission identified the topic of emerging issues to meet the requirements California Public Utilities § 961 (d)(11). This section requires that the safety plan include the following:

   § 961(d)(11) Any additional matter that the commission determines should be included in the plan.

2. *SDG&E AND EMERGING ISSUES*

   SDG&E stays current on emerging issues within the industry through active participation in industry associations and open communication with

legislative and regulatory groups. Chapter 6 of this Safety Plan identifies safety enhancement actions the industry has committed to and SDG&E's targeted date of implementation.

In addition, SDG&E is actively addressing the emerging issues of the grandfathering of provisions in 49 CFR Part 192 and the installation of remote-controlled and automatic shutoff valves as part of its Pipeline Safety Enhancement Plan included in Chapter 4 of this Safety Plan. Similarly, SDG&E is addressing the replacement of pipe, including polyethylene made with Aldyl-A resin, as part of its Distribution Integrity Management Program (DIMP).

3. *COLLABORATION WITH THE CALIFORNIA PUBLIC UTILITIES COMMISSION*

   SDG&E shall continue to work in collaboration with the Commission and other regulatory authorities, and, stay abreast of industry best practices in order to address those emerging issues that pose hazards and not yet within this Safety Plan.

QUESTION 12:

What do you include in your assembly of data or information to support continuous learning related to safety performance (e.g., incidents, close calls, precursors or leading indicators, root causes of events)?

RESPONSE 12:

For employee health and safety, SDG&E monitors both leading and lagging indicators of safety performance. Leading indicators include employee engagement and safety culture assessments, behavior-based safety job observations, and third-party vehicle driving reports. Near miss/close calls are shared among workgroups to support continuous learning. Lagging indicators include first aid cases, OSHA recordable incidents, lost time incidents, and controllable motor vehicle incidents. Incident rates are tracked to assess the frequency and severity of incidents including cases involving days away from work, restricted work activity or job transfer (DART), and lost workdays. Incident reviews are conducted to determine contributing factors and lessons learned.

From a system integrity perspective, SDG&E evaluates incidents as part of its continuous improvement process. The results of investigations are formalized in updates to practices, policies, and procedures as necessary. For example, SDG&E developed a robust sewer lateral inspection program as a result of an incident in Minnesota and work Southwest Gas was initiating. As another example, a problem discovered with an abandoned pipeline at a regulator station caused SDG&E to modify its procedures for sequencing and abandoning pipelines to prevent future problems. SDG&E also evaluates damages to its pipeline to drive improvements to our field operations, Distribution Integrity Management Program (DIMP) and Public Awareness Program.

QUESTION 13:

How do you monitor the condition of the infrastructure to support decisions on accelerated inspection/testing, repair or replace? How do you make related decisions? How often are these practices reviewed?

RESPONSE 13:

For SDG&E Electric Operations:

System conditions are monitored through maintenance programs (e.g. the electric distribution Corrective Maintenance Program or CMP) or by identifying and tracking incidents, equipment failures and trends. Decisions regarding individual risks or safety hazards that are identified are made by the local operations management team. Larger system wide or programmatic decisions are typically made by Engineering or Reliability groups in consultation with experienced subject matter experts. There are also several forums available to discuss cross-functional issues, and how to effectively address them. The asset management/assessment practices are reviewed and modified as necessary. SDG&E has a good track record of cross-function committees (e.g. Reliability Assessment Team) effectively addressing issues.

SDG&E's maintenance program is evaluated for trending and excess cost runs relative to historical performance. In addition incident investigations evaluated through the Company's Engineering and Reliability groups, provides feedback used in modification of the program detail and in refining our training programs for the inspectors. Decisions are made annually when programs are reviewed, or as needed whenever trending or incident data indicates concern.

SDG&E utilizes online Condition Based Monitoring (CBM) data to implement new algorithms to identify issues, schedule maintenance, and predict asset life. This optimizes capital expenses on equipment purchases and O&M.

Each year, after the summer season, Distribution Planning performs a load forecasting study. The load forecasting study results are then used to identify potential distribution infrastructure that is nearing or is above its thermal rating or causes voltage violations. Projects are then engineered and designed to resolve these issues. The process for project review is noted as part of Question 5.

SDG&E prioritizes distribution system reliability improvements based primarily on cost-effectiveness. Historic outage results are used to prioritize circuits for analysis. District engineers develop alternatives for improving the high-priority circuits in their region. Each alternative is analyzed for benefit and cost. The benefit of each alternative is derived from the predicted improvements in SAIDI and SAIFI that it would produce. A benefit/cost ratio which compares the predicted SAIDI and SAIFI benefit of the alternative to the estimated construction cost is calculated for each alternative. Factors which go into this analysis include:

- The current configuration of the circuit
- Age, condition, and statistical failure rates of existing equipment
- Presence and location of automated switching (SCADA)
- Presence and location of emergency ties to adjacent circuits

The alternatives are then presented to SDG&E's Reliability Assessment Team and reviewed for technical merit. After the circuit analysis presentation, the Reliability Assessment Team approves the alternative that will provide the most cost effective reliability benefit, or requests that further analysis of the circuit be done. Approved projects are then engineered, designed, issued to construction, and funded through the Reliability Capital budget. Decision-making about reliability improvements may also consider subjective factors, such as:

- customer mix
- special needs customers
- customer complaint history
- outage history of the affected area
- availability of new technology

The Reliability Assessment Team is comprised of technical experts from various departments, including Distribution Operations, Electric Reliability, Distribution Planning, System Protection, Engineering Standards, and Regional Operations and Engineering (Districts). The primary purpose of the Reliability Assessment Team is to provide strategy and guidance to improve system reliability, and manage reliability improvement budgets. The Reliability Assessment Team also coordinates ongoing reliability improvement programs such as SCADA system expansion and the underground cable replacement program.

RIRAT (see Question 5) adopted the following guiding principles to assist in the decision making process to repair or replace facilities:

- Utilize risk-based prioritizations to maximize risk-mitigation;
- Improve design specifications to reduce the potential for igniting fires;
- Consider and, to the extent prudent and cost-effective, employ technology-based solutions to reduce fire risks and improve overall system reliability;
- Prioritize system-rebuild efforts based on a matrix of available projects, considering the most important input factors such as the recent occurrence of a "wire-down", wind and weather conditions, fire risks, values at risk, outage history, conductor type, condition of equipment, environmental conditions, and critical customers;
- Systematically consider and evaluate the following options:
    - Fire-hardening sections of circuits or individual circuit branches;
    - Undergrounding by traditional undergrounding or cable-in-conduit;
    - Adjusting protective equipment by revising settings, balancing loads, adding reclosers, replacing expulsion fuses with fault tamers, and/or reducing fuse size; and,
    - Employing new methods and/or technologies, such as spacer cables, wireless fault indicators, "off-grid" solutions, and Smart Grid technologies;
- Replace high-risk equipment based upon statistical analytics;
- Realign circuit routings to avoid trees and dense vegetation or use tree guards and/or insulated aerial cables; and,
- Assess the costs and benefits of optional solutions for reasonableness.

The RIRAT oversees the evaluation and approval processes for the various system improvements and capital projects described above, and specifically addresses system design and facilities from the perspective of minimizing fire-related risks in the rural areas included in the Fire Threat Zone and Highest Risk Area. RIRAT conducts by-weekly meetings to address the items identified in the Guiding Principles where decisions are made, practices are reviewed, and modified as needed.
SDG&E performs routine visual inspections of substations on a monthly basis. In addition, SDG&E performs routine maintenance and diagnostic testing on specific types of equipment to both verify functionality and reliable operation. Any issues that require follow-up are usually addressed during the maintenance of that device. Results that affect how the asset is utilized in substation are run through an analytical tool that prioritizes that piece of equipment for engineering review and a subsequent engineering analysis.

Fire related issues are tracked and reported on through the CFSP bi-weekly meetings and updates. Contained within the CFSP is the CFSP Scorecard that tracks and

reports on over 40 items related to the reduction of ignition sources on the SDG&E electric system. These results are shared and broadcast to the over 80 person team along with the Director Steering Team (related to Q6 above) and several executives. As these issues are monitored and discussed and results obtained items on the Scorecard are adjusted and added to so as to maximize the overall gains in the area of fire reduction across the SDG&E service territory.

Vegetation Management captures vegetation and wood pole data during annual and or routine field inspections. Any abnormal changes regarding vegetation health and growth of vegetation could trigger more frequent inspections and or change in treatment type of the vegetation. Reports help identify trends that are observed due to vegetation mortality, environmental changes, and or changes to the electrical configuration. Pole data and reports help identify and manage pole integrity. Vegetation Management staff meet bi-weekly with its contractors to review work status and discuss any issues with current practices or procedures. Practices and Procedures are reviewed on an as needed basis. Changes warranting review include safety, industry change, and or regulatory change. Any recommend changes are reviewed by upper management and would include executive approval in some cases.

For SDG&E Gas Operations:

The TIMP and DIMP programs each include provisions for reviewing data and identifying infrastructure for additional assessment and review, including inspections and testing. Results of the inspections are then used to determine if action is necessary, and if so, what the action will be (e.g. increased monitoring, repair, replacement).

QUESTION 14:

How do you track progress in meeting explicit or implied commitments, including those implied in rate case proceedings?

RESPONSE 14:

For SDG&E Electric Operations:

Progress toward mitigation of risks and safety concerns are tracked using a multitude of tools, systems and management practices. Progress on more routine activities is typically tracked through software systems that record work needing to be done, schedule and completion activities. Standalone projects may be tracked through a combination of a project management and functional committee oversight. Periodic reporting is part of the recurring activities to ensure work is being completed as planned.

CMP progress is tracked monthly in a detailed specific report for each program. Program progress is broken down for each operating group and progress towards completion goals is quantified. Expenses are also evaluated per program and reported to all stake holders.

The primary purpose of the Reliability Assessment Team is to provide strategy and guidance to improve system reliability, and manage reliability improvement budgets. The Reliability Assessment Team also coordinates ongoing reliability improvement programs such as SCADA system expansion and the underground cable replacement program. A project manager is assigned to each project and he or she is responsible for making sure that the project meets its commitments.

The RIRAT oversees the evaluation and approval processes for the various system improvements and capital projects described in the response to question 13 above, and specifically addresses system design and facilities from the perspective of minimizing fire-related risks in the rural areas included in the Fire Threat Zone and Highest Risk Area. RIRAT conducts by-weekly meetings to address wire down events, look at new technologies, discuss new and progressing projects. Decisions are made and practices are reviewed and modified as needed.

Bi-weekly meetings of the CFSP Director Steering Team along with bi-weekly meetings of the CFSP Team are held to obtain direction on noted issues as well as provide input on the progress of issues already identified on the CFSP Scorecard. The CFSP

Scorecard not only tracks the issue but also identifies the responsible executive in charge, the person(s) responsible for the task, the anticipated due date and the percentage of the task completed to date. These are then transmitted to all members of the CFSP Team including the Director Steering Team and key executives so as to keep the progress of the fire related issues in the forefront of everyone's mind.

Regulatory commitments towards substation maintenance are tracked through management review of weekly reports on the status of maintenance yet to be performed. Capital project commitments are tracked by individually assigned budget/project managers.

Vegetation Management utilizes a data base program that manages all routine work activities; scheduled inspections, work activities, auditing, and invoicing. A second system known as "Memo data base" manages and tracks all non-routine activities. Both systems have sufficient reporting capabilities to help track and monitor activity and progress. In addition, SDG&E built a Dashboard that is linked to Vegetation management data. The Dashboard allows upper management to have a high level view of activity progress and cost.

For SDG&E Gas Operations:

As was discussed in response to Question 5, the estimates provided in the GRC proceeding are completed nearly 3 years prior to work commencing and are an aggregate, general estimate of the capital needs in future years. System needs are dynamic and ever changing. The Utility continually monitors the system to address real time safety and reliability needs. (This was touched on in response to questions 5 and 10.) The utilities have not traditionally envisioned the GRC proceeding to be the single listing of capital work elements that would be required to be completed 4 years out. Therefore the only "tracking" to the GRC authorized levels is done at an aggregate spending level as we complete the annual budget process to assess the spending profiles and authorized Revenue Requirement.

The most recent GRC decision included a reporting requirement for pipeline safety work, and thus this work is being reviewed by all stakeholders. Thus the work that was forecasted, as discussed previously, but again the listing from the GRC is a forecast. The reality of unforeseen events and other intervening factors will require a more dynamic interplay of the work.

The utility additionally tracks on-going requirements from Decisions, Resolutions and Advice Letters in a "Regulatory Tracking System" to comply timely with Commission orders.

QUESTION 15:

How, if at all, do you communicate the status of and need for modification of these commitments?

RESPONSE 15:

For SDG&E Electric Operations:

Periodic reporting is part of the regular recurring process in place to ensure work is being completed as planned. Specific techniques used vary depending on the activity or grouping of activities and typically include reports regarding regular scheduling or work, exception reporting for activities behind plan, regular committee meetings, update reports, and ad hoc reports and meetings as necessary to ensure objectives are met. Some communications are "pushed out" to a predetermined audience of stakeholders, while other information for interested parties to access themselves through SharePoint or individual access to electronic systems where the data can be reviewed and reports generated.

CMP monthly reports for each maintenance program are emailed to all stakeholders. As well as the general performance and overview, the report contains links to Sharepoint sites with detailed breakdowns of the technical and financial parameters associated with each program.

The primary purpose of the Reliability Assessment Team is to provide strategy and guidance to improve system reliability, and manage reliability improvement budgets. The Reliability Assessment Team also coordinates ongoing reliability improvement programs such as SCADA system expansion and the underground cable replacement program. If there is a need to modify the commitments of a project, the project engineer will many times have to re-present the project to the RAT team to verify that it is still a worthy project.

Bi-weekly meetings of the CFSP Director Steering Team along with bi-weekly meetings of the CFSP Team are held to obtain direction on noted issues as well as provide input on the progress of issues already identified on the CFSP Scorecard. The CFSP Scorecard not only tracks the issue but also identifies the responsible executive in charge, the person(s) responsible for the task, the anticipated due date and the percentage of the task completed to date. These are then transmitted to all members of the CFSP Team including the Director Steering Team and key executives so as to keep the progress of the fire related issues in the forefront of everyone's mind.

Changes in substation reliability commitments are addressed through the approval committee (SEA Team). Suggestions on changes to the prioritization of budget spend are approved through this process, before being tracked and changed by the budget manager.

Vegetation Management meets bi-weekly with contractor to discuss work progress. Contractors are held to Key Performance indicators to maintain schedule. Should outside influences cause contractor delays, the contractor will communicate to the forester in regular biweekly meetings and via an email to SDG&E explaining the reason for any impact to its scheduled work. SDG&E will assist to remove any obstacle preventing contractor from performing assigned work. Should communications be unsuccessful, customer or agencies are sent certified letters putting them on notice of obstructing work to be completed for safety and compliance. The certified letter would include exercising easements and law enforcement to complete work as prescribed.

The capital planning process involves evaluating customer energy needs that takes into consideration safety, reliability and security. This is accomplished at the beginning of the year through the identification of proposed projects, an evaluation and prioritization of projects, documenting approved capital projects with their respective budgets; assigned Project Managers continuously manage the projects against budget and during the month provide updates to sr. management. Additionally, as significant items occur including safety, reliability and surety issues, senior management is notified and appropriate action is taken. As business conditions change, senior management will approve new capital projects, reduce or expand the scope of a capital project and as necessary will discontinue the project.

For SDG&E Gas Operations:

The GRC estimates are guideposts to future spending requirements; but the utility must respond to real time conditions. Please refer to the response provided to Question 5 for a discussion on how the organization communicates and responds to changes in work elements and funding needs.

QUESTION 16:

How do you solicit and manage employee input to safety issues?

RESPONSE 16:

SDG&E recognizes that open, two-way communication between management and employees on safety and health issues is essential to an injury and incident-free, productive workplace. The following means of open communication are in place to solicit and manage employee input on safety issues:

- Supervisors are provided with regular safety and health information to communicate with all employees to whom they provide work direction including office employees.
- Employees are encouraged to report hazards, injuries, and incidents to supervisors or the field safety advisors without fear of reprisal of any kind. In addition, safety suggestion/concern reporting boxes are available in work locations and a near-miss reporting system is available for employees to report incidents.
- Various safety committees are in place to foster employee participation and solicit input as follows:

  a. Executive Safety Council; Communicates with employees at quarterly meetings to gain a deeper understanding of safety at the frontline. Separate employee and supervisor dialogue sessions are an integral part of these meetings allowing operational leadership to hear directly from employees and supervisors about safety concerns and communicate leadership commitments to address issues.

  b. Local Safety Committees and Grassroots Safety Teams; Led by employees, these committees create and maintain active involvement in their department's or location's safety issues and initiatives. Safety committees meet regularly and provide input to local leadership on safety concerns and improvement initiatives. Grassroots teams focus on cultural and behavioral aspects of safety with the goal of strengthening the safety culture.

  c. Safety meetings, department staff meetings and tailgates. Formal safety meetings are held biweekly for employees engaged in field construction or construction associated activities. Employees involved in operations, maintenance or other manual work hold safety meetings at least monthly. Finally, tailboard conferences or job briefings are conducted by crew leaders to enhance understanding of the job plan prior to starting any job or day's work and whenever the job plan changes during the work. In addition, work place hazards and at-risk work practices are identified and shared during safety committee meetings, safety meetings, job observations, and during periodic safety assessments.

SDG&E also follows CA SB705/PUC Section 961 with respect to workforce participation in the development and implementation of its Gas Safety Plan, as follows:

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IV. WORKFORCE PARTICIPATION

Public Utilities Code Section 961 provides as follows:

> *The commission and gas corporation shall provide opportunities for meaningful, substantial, and ongoing participation by the gas corporation workforce in the development and implementation of the plan, with the objective of developing an industry wide culture of safety that will minimize accidents, explosions, fires, and dangerous conditions for the protection of the public and the gas corporation workforce.*

The following demonstrates how SDG&E has solicited feedback in the past and continues to support the directives above:

- We engaged management and non-management frontline employees; made pipeline safety presentations; and solicited feedback and ideas on the plan with the goal of gathering meaningful and substantial information to improve pipeline safety. During these meetings, employees were strongly encouraged to submit any and all pipeline safety ideas at any time in the future as they are thought of.
- In all presentations, employees were informed that anyone who perceives a breach of safety requirements may inform the Commission of the breach, and that the Commission will keep the identity of the employee confidential. The information included the address of the Director of the Commission's Consumer Safety and Protection Division and instructed employees to designate "Safety Breach Notification from Gas System Operator Employee–Confidentiality Requested" to seek confidential treatment.
- A summary of the pipeline safety suggestion process, including how to provide on-going suggestions to Operations Staff and the Commission is posted on all Operations organization bulletin boards. That posting also directs employees to an Operations SharePoint site where the Safety Plan link and the suggestion process are included.
- Information was also sent to all of our pipeline contractors asking them for their input and suggestions during the drafting of the Safety Plan and for their on-going ideas and suggestions.
- During the drafting of the Safety Plan, SDG&E received 46 questionnaire responses from employees and/or contractors with suggestions ranging from tools and training to public awareness and pipeline design. The employee surveys were logged, recorded and analyzed to determine the necessary follow-up activities.
- One follow-up workshop was held with employees to receive clarification and additional input on their ideas.

- SDGE&E's Safety Plan has been made readily available to all employees online.
- Additional workshops will be scheduled as necessary to further examine and clarify any input received and to make certain that we are addressing issues or concerns related to our commitment to safety.
- Formal systems have been established for the specific purpose of providing employees the opportunity to comment on the Safety Plan and to make ongoing suggestions on pipeline safety. Employees can submit their suggestions via written notification, on-line, by phone, and always with the options of confidentiality and/or anonymity when requested.
- The on-line input system provides employees with comprehensive input tracking from the employee who submitted the input to the appropriate process manager and back. This system provides the ability to give periodic updates to the employee as the investigation progresses. The input received is posted on the website along with the resolution to help communicate improvements or education to other employees. This system is being managed and monitored by a department head manager.
- All input is promptly investigated to determine the appropriate response. SDG&E takes the receipt of input very seriously and acts with a sense of urgency in the investigation of all input received.
- Employees will be periodically reminded and encouraged through various communication channels to submit their input through this process to ensure the company is capturing all ideas and suggestions related to pipeline safety.

QUESTION 17:

How do you follow-up on this input (e.g., make decisions to address issue, decide on how to address the issue, communicate to the originator the decisions and timeframe on which to expect closure)?

RESPONSE 17:

Safety issues raised to the Executive Safety Council during employee and supervisor dialogue sessions are documented and tracked to resolution by the Safety Department. The Safety Department works with the responsible group(s) to address the reported issues and a commitment is made to provide direct feedback to the employee(s) raising the issue within 30 days.

Formal reports made through our near-miss reporting system are distributed to safety committees, field safety advisors, and supervision for sharing with their work groups. Where additional incident review and corrective measures are necessary, safety bulletins are issued communicating corrective actions being implemented to address the issues.

Local Safety Committees and Grassroots Teams report to leadership sponsors any safety issues and initiatives they are working on. Issues that cannot be resolved by local supervision are elevated through leadership or the Executive Safety Council for further assistance. Employee representatives from the Safety Committees and Grassroots Teams provide direct feedback to their respective work groups on the status and resolution of these items.

Again embodied in SDG&E's Gas Safety Plan (as amended 6/28/13):

When input is received, it is promptly assigned to the responsible staff member for thorough investigation and resolution. The target timeframe for initially reviewing and assigning a suggestion is as soon as possible no longer than 5 business days. During investigations, employees are often contacted for additional clarification and to determine the appropriate follow-up actions. This follow-up may simply include discussions with the employee who submitted the input to explain how the company is currently meeting or exceeding the objective of their suggestion. The follow-up could also entail the re-training of field personnel or the revision of training materials, best practices and/or gas standards. SDG&E strives to determine disposition of all investigations as quickly as possible; however, the ultimate goal is to complete a thorough investigation which could mean that an issue will not find closure for several weeks as enhancements are planned and implemented. With that said, most suggestions will find closure in less than two weeks. The basis for accepting or

rejecting a suggestion will be the extent to which the suggestion improves the safety of the pipeline, and assists us in meeting all regulatory requirements and industry best practices while maintaining optimal operating efficiencies for our customers.

QUESTION 18:

Do you have an internal safety and/or compliance audit function? If so, how are the results from these audits translated into decisions and action? How are actions monitored? Please provide examples.

RESPONSE 18:

SDG&E maintains an Environmental and Safety Compliance Management Program (ESCMP) to address compliance requirements, awareness, goals, monitoring and verification related to applicable environmental, health and safety laws, rules and regulations, and company standards.

Site Managers with support of their Safety Advisors conduct self-assessments and inspections of company facilities and operations. These reviews assess compliance at a facility or locale with the applicable safety regulatory requirements and Company policies; identify areas, actions or activities that are not consistent with regulatory requirements or internal policies; and finally, develop the appropriate corrective action(s). The information obtained during these inspections and self-assessments may also result in changes to internal Company policies or training.

The Safety Department distributes ESCMP communications, conducts the annual ESCMP management review, compiles findings, and develops recommendations and goals with executives. Quarterly reports on the status of the ESCMP goals and on the status of ESCMP open corrective actions pertaining to safety are prepared and distributed to leadership.

Each year, an ESCMP Certification is conducted at year-end to confirm compliance with the Injury and Illness Prevention Program (IIPP) and other safety and environmental laws and regulations and Company policies and procedures. Site Managers and Directors are required to confirm that the compliance processes over which they have responsibility reasonably ensure compliance with the Injury and Illness Prevention Program (IIPP) and other safety and environmental laws and regulations and Company policies and procedures.

In addition, Sempra Energy, the parent company of SDG&E, has an independent internal audit function (Audit Services) that conducts internal audits of its business subsidiaries at regular intervals. These audits include environmental, health, and safety compliance. The results of these audits are documented and any business control issues or compliance findings are identified, including any necessary corrective actions. Corrective actions are monitored to closure, and results are reported to SDG&E leadership and the Audit Committee of the Sempra Energy Board of Directors. Enhancements are periodically made to the business controls surrounding safety compliance as a result of these audits.

QUESTION 19:

Have you ever commissioned independent (including outside) safety and/or compliance audits? How are results translated to action and the results monitored? Please provide examples.

RESPONSE 19:

During March 2013, the National Safety Council was commissioned to conduct a Safety Barometer perception survey among San Diego Gas & Electric Company (SDG&E) employees. The survey was completed by 3,175 employees across 19 business functions and 20 locations. Employees were asked to indicate their level of agreement or disagreement with a variety of safety and work-related statements grouped into six program categories: 1-Management Participation, 2-Supervisor Participation, 3-Employee Participation, 4-Safety Support Activities, 5-Safety Support Climate, and 6-Organizational Climate.

The safety program at SDG&E generally received very high ratings, with the vast majority of the components scoring well above average. Compared with responses from the 580 establishments in the National Safety Council (NSC) Database, SDG&E generated percentile scores well above the NSC Database average of 50 for all six program categories. Percentile scores for safety program categories ranged from a score of 84 for Employee Participation to a very high score of 94 for Management Participation. The overall SAFETY BAROMETER percentile score was a very high 93 out of 100, indicating that only 7% of the NSC Database organizations achieved a higher overall score than did SDG&E.

SDG&E is leveraging the results as a guide for making safety program improvements. Action plans are being developed, and progress is being monitored by our Executive Safety Council. The data presented in this report will also be used as a baseline against which to measure future progress.

QUESTION 20:

What are you doing to promote and assure an appropriate safety culture? Have you documented what an appropriate safety culture should include?

RESPONSE 20:

SDG&E understands that achieving a world-class safety culture requires alignment at every level of the organization. As such, we have established many opportunities for employees and supervision to be involved in shaping and strengthening our culture. Safety is embedded into all phases of the employee experience. It starts with the formalized training that employees receive when they begin their career. It is emphasized on the job, and then re-emphasized during the training they receive as they advance to new jobs. Completing work safely is interwoven into all parts of their training.

Once on the job, SDG&E conducts frequent, and in many cases daily, meetings with its employees to discuss health and safety. SDG&E maintains training programs, produces written and electronic communications, and has a system for employees to report hazards and near miss/close call safety incidents.

Our employee-led behavior-based safety program is a proactive approach to safety and health management. This peer-to-peer program focuses on principles that recognize at-risk behaviors as a frequent cause of both minor and serious injuries. The purpose is to reduce the occurrence of at-risk behaviors by modifying an individual's actions and/or behaviors through observation, feedback and positive interventions aimed at developing safe work habits.

SDG&E has also brought in Culture Change Consultants, Inc. to assist in implementing long-term culture change through grassroots safety leadership. This model of empowering the people closest to the hazards and conditions allows front-line workers to become the engine of safety culture transformation.

Through annual district safety stand downs and an annual Safety Congress, we provide a forum for employees and safety committees to share and exchange safety information and ideas. At the Congress, individual and team safety awards are announced, recognizing safety stand-outs who embrace the safety culture and demonstrate safety leadership.

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With varying strengths and weaknesses identified through comparative examination of results on the program category and individual component levels, SDG&E is able to leverage the results as a guide for making safety program improvements. The data presented in this report will also be used as a baseline against which to measure future progress.

QUESTION 21:

What criteria should be used by the Commission to evaluate whether a utility has produced an adequate risk-informed GRC filing?

RESPONSE 21:

This question also appears within the body of the OIR in Section 4.2, and indeed the answer would seem to be the eventual outcome of this proceeding. SDG&E agrees that Commission should consider the linkage between the utilities' obligations for safety, security and reliability and appropriate funding levels, and that those funding levels should be commensurate with both the regulatory and public expectations regarding safe and reliable delivery of service.

With regard to criteria to evaluate the adequacy of a utility's GRC filing, the Commission should take a broad approach to risk assessment and risk management; not limited to the narrow "what is included in the GRC filing". Because GRCs take a very long time to process, they may not reflect rapidly developing or most current information; nor do they encompass all utility operations, investments, and processes. Furthermore it would be redundant to require information already reported elsewhere into the GRC process that serves to "bulk up" the risk-related information in that proceeding. In this context, the Commission should recognize that utilities already provide risk-related information in a variety of formats and recurring reports. For example, SDG&E provides a Fire Prevention Plan as well as information on its Emergency Response Plan (including staffing levels, training events, and so on) pursuant to General Order 166. SDG&E also provides information regarding equipment inspection and maintenance pursuant to General Order 165. As ordered in D.13-05-010, SDG&E provides an annual report ("Attachment 3", also known as the semi-annual 'Gas Transmission and Distribution Safety Report') with extensive information regarding pipeline safety. The GRC proceedings are informed by, and reflect these reports, mandates, staffing levels, and plans; they request funding that is (on a forecast basis) necessary to implement these plans, comply with the General Orders, and to safely maintain and operate the utility systems in a manner compliant with law and regulation. In short, the Commission should recognize that the GRC process does not "stand alone" in isolation from other proceedings, regulations and orders. The criteria used to evaluate whether the GRC filing is adequately risk-informed should take into account the larger regulatory and legal environment.

The perspective of risk assessment as it relates to revenue requirements also implies that there may be some 'acceptable level' of risk, and indeed invites quantifiable definitions of risk, safety, reliability and security. These are necessary so that the utilities may have objective standards to work from, and to incentivize behavior toward the Commission's expectations. SDG&E propose that

as an outcome of this OIR the Commission look to adopt RCP criteria that may already exist in comparable industries that present comparable risk profiles (airlines, rail, NASA, NERC) rather than start from whole cloth, and permit the utilities a period of GRC cycles to adopt and adjust to that new RCP criteria. Because the utilities are normally in-process of a GRC at any given time, changes to the RCP should be applicable to future filings and not applied to current or past proceedings for which new RCP criteria has not yet been adopted.

The Commission should also ask itself whether or not it is logical to assume that "adequately risk informed" is the most useful metric for GRC proceedings, which are forecast-oriented and primarily focused on future rate setting. It is possible that a more workable approach would be to evaluate safety plans, reliability metrics, and minimum standards independently, without bundling them into the already complex and time-consuming ratemaking process. And without objective definitions of such terms as 'adequacy' and 'risk', there will be inevitable disagreement that the utilities have produced either an 'adequate' showing, or that particular perspectives (public, worker, intervenor, ratepayer) were sufficiently considered.

Furthermore, whether or not the utility has "produced" an adequately risk-informed GRC is only the first input; what is more important is the output – in other words whether or not the GRC process produces an adequately risk-informed decision and the funding necessary to run an adequately risk-informed utility system. Because the focus of a GRC is revenue requirement, and many parties are intensely focused on rates, intervenors sometimes oppose safety related funding, and those recommendations are sometimes adopted.

SDG&E anticipates that in the course of this OIR the Commission will likely conduct one or more workshops which, in combination with the responses provided here, will serve to provide the Commission with the perspectives and material it will require to craft the risk-informed framework it desires for the Rate Case Plan. In order for that framework to be effective, risk-assessment criteria will need to be objectively, clearly and precisely defined.