Risk Assessment and Mitigation Phase

Cross-Functional Factor

(SDG&E-CFF-7)

Safety Management System

May 17, 2021

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CROSS-FUNCTIONAL FACTOR: SAFETY MANAGEMENT SYSTEM

I. INTRODUCTION

This Safety Management System (SMS) Cross-Functional Factor (CFF) Chapter describes how SMS activities impact the risks described in SDG&E's Risk Assessment Mitigation Phase (RAMP) risk chapters and CFF chapters.

SDG&E is presenting CFF information in this RAMP Report to provide the Commission and parties additional information regarding the risks and mitigations described in its RAMP risk chapters. CFFs are not in and of themselves RAMP risks. Rather, CFFs are drivers, triggers, activities, or programs that may impact multiple RAMP risks. CFFs are also generally foundational in nature. Therefore, SDG&E's CFF presentation differs from that of its RAMP risk chapters (*e.g.*, no risk spend efficiency calculations or alternatives are provided). SDG&E's CFF chapters provide narrative descriptions of the CFF projects and programs that impact multiple SDG&E's RAMP risk chapters through the 2022-24 time frame. Related cost forecasts are provided as available, consistent with an expected test year (TY) 2024 general rate case (GRC) request.

As described below, SMS is a systematic, enterprise-wide framework to manage risk and to promote continuous improvements in safety. The SMS CFF therefore spans all lines of business and helps to further mitigate several RAMP risks in this RAMP Report.

II. OVERVIEW

SDG&E's SMS is a systematic, enterprise-wide framework to collectively manage and reduce risk and promote continuous improvement in safety performance through deliberate, routine, and intentional processes. The SMS is not a new safety initiative. SDG&E's SMS is the framework that ties together each of our existing and future safety initiatives, aligns our core operating units, integrates risk and safety, and allows us to assess risk across the entire organization for continued improvement and enhanced safety performance.

The SMS moves SDG&E forward in its journey towards "Target Zero."[1] SDG&E has a strong safety culture and many effective established safety programs. The SMS affirms, aligns, integrates, and brings further awareness and engagement to such programs by providing:

[1] "Target Zero" is SDG&E's goal and mindset to achieve an incident-free work environment.

- Greater communication, broad sharing of information and utilization of lessons learned;
- Enhanced documentation in the form of standardized processes and widely accessible document and data repositories;
- Strengthened employee feedback mechanisms, additional means/resources for consistent follow-up and communication;
- Early identification of risks, integration of risk and asset management with operations;
- Strong change management, where employees and contractors have the knowledge and tools to anticipate, identify and assess risk and are empowered to communicate risks to drive change; and
- Continual learning and improvement with greater reliance on data and analytics and increased use of leading indicators with strong review processes to continually measure effectiveness.

SDG&E demonstrated its longstanding commitment to safety in its TY 2019 GRC, stating: "At SDG&E, safety isn't a goal – it is part of the Company's DNA,"[2] and "SoCalGas and SDG&E have an unwavering commitment to protecting employees, contractors and the public."[3] Also in the TY 2019 GRC, SDG&E and SoCalGas witnesses testified that they "see the value in continuous improvement and are now seeking to more formally implement a safety framework that incorporates existing and new safety measures through a pipeline SMS and its related tenets (*i.e.*, API 1173) in the context of this GRC for their Gas operations."[4] For SDG&E specifically, in its TY 2019 GRC, SDG&E expressed its intent to implement an SMS for SDG&E's gas and electric operations.[5] In the final decision on SDG&E's TY 2019 GRC, the CPUC set forth its "support… for the improvement of Applicants' safety management and safety performance" and found "[t]hese issues are more appropriately raised and addressed in the

[2] A.17-10-007 (cons.), Exhibit SDG&E-01-R (Winn) at CAW-1.

[3] A.17-10-007 (cons.), Exhibit SCG-250/SDG&E-252 (Buczkowski and Geier) at DLB/DLG-3.

[4] *Id.*, at DLB/DLG-5.

[5] *Id.*, at Section II.B.

Applicants' RAMP proceedings."[6] And in fall 2019, SDG&E began the strategic initiative to develop an SMS for both its gas and electric operations. SDG&E provides herein details of its enterprise-wide SMS and its plan for further implementation and continuous improvement of the SMS.

SDG&E has strong safety performance, and its safety metrics continue to improve. This can be seen through SDG&E's 2020 safety performance, in which SDG&E achieved its lowest-ever employee safety incident rates.[7] To that end, it is SDG&E's intent that the effectiveness of its SMS will be measurable based on identified controls and metrics to identify opportunities for continuous safety improvement. The SMS leverages, integrates, and enhances each of SDG&E's existing safety programs and SDG&E's strong safety culture and aims to further reduce safety incidents.

SDG&E's enterprise-wide SMS is designed to enhance the Company's longstanding commitment to safety, which focuses on people safety (*i.e.*, employee, contractor, customer, and public safety), asset safety (*i.e.*, all Company infrastructure), gas and electric operations safety, risk identification and management, and emergency preparedness and incident response. As mentioned above, this commitment to safety is embedded in all that we do and is the foundation for who we are – from initial employee training, the design, installation, operation, and maintenance of our utility infrastructure, to providing safe and reliable service to our customers.

SDG&E's SMS is a process-based, integrated, continuous improvement framework aimed to reduce risk, further enhance the Company's safety culture, and prevent safety incidents. The collective efforts at the business unit and enterprise levels will become greater aligned, integrated, and systematic within the SMS framework. SDG&E's SMS will therefore provide a standardized approach for managing risk and safety across all assets and operations by implementing standardized processes and risk assessment methodologies that can be consistently applied enterprise-wide. The SMS framework creates an integrated approach and a Company-wide resource to guide our actions, decisions, and behaviors, so that we efficiently and effectively manage risk and continually improve upon all aspects of our safety performance.

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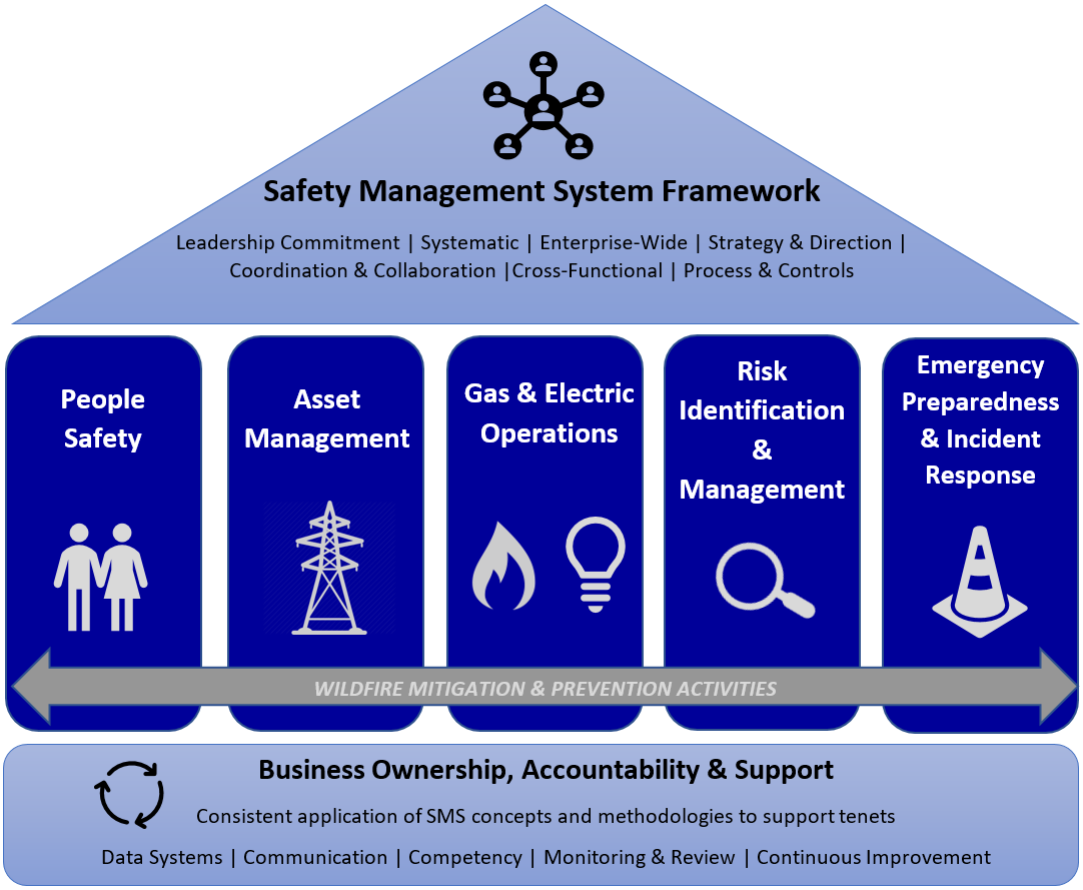
6 D.19-09-051 at 23.

7 OSHA recordable employee injuries improved 16% over our previous best year (2019). *See*, SDG&E 2020 Safety Performance Metrics Report, A.15-05-002, for further details.

SDG&E's SMS focuses on process safety, which broadly encompasses procedures, hazard analysis, training, equipment integrity, change management, incident investigation, emergency preparedness, and compliance. These factors and others affect the likelihood and consequence of such incidents and can contribute to their identification and prevention.

SDG&E's framework for its SMS is summarized in Figure 1 below:

Figure 1: SDG&E SMS Framework



SDG&E established this SMS Framework in 2020, which includes the Five Pillars of Safety, to focus on both individual safety behaviors and process safety management. The Five Pillars of Safety are: (1) People Safety, (2) Asset Management, (3) Gas and Electric Operations, (4) Risk Identification and Management, and (5) Emergency Preparedness and Incident Response. These pillars are the core of an integrated, comprehensive, and risk-informed approach to managing safety under the SMS, in line with basic safety principles and a broader process safety management focus. Activities to effectively manage the risks SDG&E faces,

including wildfire mitigation and prevention activities, are integrated throughout the Five Pillars of Safety and the SMS Framework.

An effective SMS requires that all Five Pillars of Safety have a strong interdependence, each contributing a vital aspect across the SMS Framework for exemplary safety performance. Each pillar is defined below:

- ***People Safety*** addresses the education of, communication to, effects on, and contributions of the people who comprise and support the organization.
- ***Asset Management*** considers the assets, systems, and equipment, their condition, maintenance, installation, prediction of failure, and how they affect worker and public safety.
- ***Gas and Electric Operations*** provides practical input into the development of acceptable safety processes, practices, and standards, and ensures proper application of SMS tenets and processes in executing operations, maintenance, and construction activities to protect worker and public safety.
- ***Risk Identification and Management*** proactively identifies safety risks, considers their likelihood and potential consequences, and identifies mitigations that reduce these risks to prevent safety incidents.
- ***Emergency Preparedness and Incident Response*** focuses on utilizing leading practices for all responses, large and small, that support situational awareness, collaboration, coordination, and strong command and control to minimize worker risk and public exposure.

Business Ownership, Accountability and Support provides the foundation for the Five Pillars of Safety within the SMS framework, as shown above in Figure 1. Critical common supporting elements that broadly apply to each of the pillars include data systems, communication, competency, monitoring and review, and continuous improvement.

SDG&E's SMS aligns with American Petroleum Institute's Recommended Practice for Pipeline Safety Management System (API 1173). While API 1173 was developed for natural gas pipeline operators, SDG&E adapted this recommended practice for broader electric and gas utility application. Accordingly, absent an electric industry-equivalent, SDG&E applies this adapted version of API 1173 to its electric operations. For example, SDG&E added elements

specific to wildfire mitigation that are not found in API 1173 throughout its SMS. SDG&E's SMS also incorporates elements of the following guidelines and standards:

- CPUC: Office of Safety Advocate 2018 Annual Report;
- International Standards Organization (ISO) 31000: Risk Management;
- ISO 55000: Asset Management: Overview, principles and terminology;
- ISO 55001: Asset Management: Management systems – Requirements;
- ISO 22320 and the Incident Command System: Emergency Management; and
- OSHA Occupational Safety Standards: Employee and Contractor Safety.

These integrated elements together support the development of a comprehensive and proactive safety program that produces ever-improving levels of safety.

The safe and effective operation of SDG&E's electric and gas systems requires awareness and management of many linked activities within complex processes. For instance, major accidents with high consequences may rarely occur, but when they do, it is often found to result from an alignment of weaknesses or failures across multiple activities. While safety efforts may be applied individually to each activity, more effective safety performance is achieved when viewing linked activities as processes that are better managed holistically; the SMS provides this holistic approach to process safety that expands beyond traditional occupational safety by placing critical emphasis on strong interdependencies with risk, asset, incident response, and operational management.

Managing processes requires different techniques than managing individual activities. The management of both complex and simple safety-related processes requires integration and coordination across the entire organization to address multiple dynamic activities, assets, scenarios, and circumstances. The SMS provides a framework for managing these integrated processes that support the continual, safe operation of SDG&E's electric and gas systems.

The overall objective of the SMS is to drive continuous improvement in SDG&E's safety performance. The following principles are aligned with the essential elements of API 1173 and the ISO and OSHA guidelines listed above to form the basis of SDG&E's SMS framework (*i.e.*, Figure 1, above):

- Commitment, leadership, and oversight from Company leadership and top management are vital to the overall success of the SMS;

- A safety-oriented culture is essential to enable the effective implementation and continuous improvement of SMS processes and procedures;
- Integrated risk management practices are an integral part of the design, construction, operation, and maintenance of SDG&E's electric and gas systems;
- SDG&E's electric and gas systems are designed, constructed, operated, and maintained in a manner that complies with federal, state, and local regulations;
- SDG&E conforms to applicable industry codes and consensus standards with the goal of reducing risk and minimizing the occurrence of abnormal operations;
- Defined operational controls are essential to the safe design, construction, operation, and maintenance of the electric and gas systems;
- Prompt and effective incident response minimizes the adverse impacts to life, property, and the environment;
- The creation of a learning environment for continuous improvement is achieved by investigating incidents thoroughly, fostering non-punitive reporting systems, and communicating lessons learned;
- Periodic evaluation of risk management effectiveness and system performance improvement, including audits, are essential to assure effective SMS performance;
- SDG&E employees throughout the organization must effectively communicate and collaborate with one another. Further, communicating with contractors to share information that supports decision making and completing planned tasks (processes and procedures) is essential; and
- Managing changes that can affect the safety of SDG&E's electric and gas systems is essential.

III. ASSOCIATED RISK EVENTS

Given that SDG&E's SMS is an enterprise-wide framework providing a standardized approach for managing risk and safety across all assets and activities, the SMS is cross-functional in nature and helps mitigate all of SDG&E's RAMP risks. The SMS continuous improvement framework and Plan-Do-Check-Act cycle can be applied to mitigations and programs identified within each RAMP risk chapter. SDG&E's risk mitigation and safety programs are guided by the elements of the SMS and subject to on-going assessments to evaluate

the health of the programs and identify areas for continuous improvement. Taking a systematic approach to safety, assessing risk across the entire organization, enhancing our communication, collaboration, feedback, and documentation, and using data and analytics to regularly measure our effectiveness and make continuous improvements will help make each of our risk mitigation and safety programs more effective.

In addition to helping mitigate risk, the SMS helps further enhance activities identified within the following CFF Chapters, including:

- **Asset Management** (SDG&E-CFF-1) – SDG&E's Asset Management System serves as a direct link to risk mitigation by using identified and prioritized enterprise risks to inform asset management strategic and long-term risk planning. Implementation of ISO 55000 standards not only supports, but enhances the SMS framework, whereby operating assets are managed as an element of enterprise safety. Similarly, the SMS enhances SDG&E's Asset Management initiatives by providing standardized processes and common risk assessment methodologies across the Company.
- **Emergency Preparedness and Response** (SDG&E-CFF-3) – Following all exercises and Emergency Operations Center activations, a comprehensive review with key stakeholders (internal and external where appropriate) are performed to ensure continuous quality assurance/quality improvement. The sharing of best practices and lessons learned and performing incident investigations are essential elements of an effective SMS. The SMS will further enhance these activities by applying standardized processes for incident investigation and for utilizing and sharing of findings and lessons learned.
- **Foundational Technology Systems** (SDG&E-CFF-4) – SDG&E seeks to integrate new technology to enhance worker and/or system safety (*e.g.*, data and analytic tools, communication tools) to measure the effectiveness of the SMS. Data and metrics are essential elements of an effective SMS, and SDG&E is continually assessing tools and systems to further automate, validate, communicate, track and store data.
- **Records Management** (SDG&E-CFF-6) **–** SDG&E's records management policies and practices are designed so that critical information and documents are

appropriately handled, stored, and disposed of throughout the record's life cycle. As further described below, in Section V.D., the SMS provides for enhanced documentation and recordkeeping practices.

IV. 2020 PROJECTS AND PROGRAMS

A. Development and Implementation of an Enterprise-Wide Safety Management System

SDG&E began developing an enterprise-wide SMS encompassing both its gas and electric operations starting in the Fall of 2019. SDG&E established the framework and made great strides in the development of its SMS throughout the course of 2020 and plans for continued development and implementation in 2021. The SMS is a systematic enterprise-wide framework to manage and reduce risk and promote continuous improvement in safety performance through deliberate, routine, and intentional processes.

SDG&E's gas operations follow the guidelines of API 1173. As stated above, there is not currently an electric recommended practice for SMS similar to the well-vetted API 1173. Nonetheless, SDG&E electric operations' culture largely aligns with the expectations of API 1173. SDG&E is therefore currently in the process of implementing an API 1173 equivalent for its electric operations, a first in the electric utility industry. SDG&E is moving the enterprise (both gas and electric) towards an SMS based on the ten essential elements, also referred to as "tenets," of API 1173. These include:

1. Leadership and Management Commitment;
2. Stakeholder Engagement;
3. Risk Management;
4. Operational Controls;
5. Incident Investigation, Evaluation, and Lessons Learned;
6. Safety Assurance;
7. Management Review and Continuous Improvement;
8. Emergency Preparedness and Response;
9. Competence, Awareness, and Training; and
10. Documentation and Record Keeping.

The Plan-Do-Check-Act (PDCA) cycle, as provided by API 1173, is a four-step model for carrying out the components within each of the above-listed ten essential elements of the

SMS. The PDCA cycle is applied to each of the above elements in a recurring manner for continuous improvement. The components of the PDCA cycle are:

- **Plan:** Establish objectives and processes necessary to deliver results in accordance with SDG&E's policies, principles, and objectives;
- **Do:** Execute the plan;
- **Check:** Review the results relative to the objectives; and
- **Act:** Determine corrective actions required to improve differences between actual and planned results, analyze the root causes, and determine where to apply changes to improve the plan, process, or product.

The PDCA methodology can be applied to both the SMS as a whole or to individual components and processes. The PDCA cycle is at the core of the SMS, and its primary objective is to encourage creating strategies and plans, executing those strategies and plans in line with guidelines, checking those actions for conformity, and using those results to adjust the next generation of plans. The PDCA cycle is iterative and is maintained to achieve continuous improvement.

The PDCA cycle is useful and can be applied when:

- starting a new project;
- developing a new or improved design of a process, product, or service;
- defining a repetitive work process;
- planning data collection and analysis;
- selecting and prioritizing threats or causes; and
- implementing change.

Therefore, applying the PDCA cycle to the SMS framework and its individual components and processes will drive continuous improvement in safety. Using API 1173 as a general standard for operational safety for electric operations requires alignment of risk management (based on ISO 31000), asset management (based on ISO 55000), and emergency management (based on the Incident Command System), with traditional views of safety management (based on OSHA) to support development of a comprehensive and proactive safety program that produces ever-improving levels of employee, contractor, and public safety.

In 2020, SDG&E hired two full-time dedicated employees to manage the development and implementation of the SMS. SDG&E developed processes to address the highest priority,

highest value elements of API 1173. SDG&E established the SMS framework, operating model, and a decentralized SMS governance structure. SDG&E's SMS governance structure is a cross-functional team including business leaders from SDG&E's gas operations, electric operations, employee safety, contractor safety, customer safety, public safety, asset management, risk management and emergency management departments who represent the Five Pillars of Safety within the SMS Framework. SDG&E's SMS governance structure comprises three teams that oversee, lead and are responsible for the successful implementation of an enterprise-wide SMS: (1) SMS Executive Steering Team, (2) SMS Governance Team, and (3) SMS Program Management Team. This decentralized governance structure provides cross-functional teams to assess risk and safety issues Company-wide, while retaining risk ownership and accountability appropriately at the operational levels.

The teams within the SMS governance structure actively engage SDG&E's operational employees to solicit input, insight, and feedback on safety issues. The SMS Governance Team raise and address issues regarding the scope, project plan, implementation, ongoing management, data analytics, and continuous improvement of SMS and make decisions within the scope and authority of this SMS Governance Plan as a collective, cohesive unit.

SDG&E continually reviews and works to enhance its data collection and metric efforts. SDG&E actively participates in proceedings and working groups at the CPUC that may also address these or similar items (*e.g.*, the S-MAP Technical Working Group). SDG&E's SMS-related efforts will complement and enhance such efforts.

V. 2022-2024 PROJECTS AND PROGRAMS

SDG&E anticipates integrating the programs identified in this section into its TY 2024 GRC Application. Given the "cross-cutting" nature of SDG&E's SMS (*i.e.*, the de-centralized governance structure where risk ownership and accountability reside within the operating units, which spans all lines of business), the SMS's specific impacts to each operating unit will be presented within SDG&E's next GRC. Similarly, costs for implementing activities under the SMS framework will be included within each operational area's respective GRC testimony.

A. Development and Implementation of an Enterprise-Wide Safety Management System

As stated above, SDG&E established an enterprise-wide SMS and is currently in the process of implementing the processes, plans, and activities developed within the SMS

framework. An effective SMS takes years to fully implement with ongoing employee and contractor engagement, awareness, training, and continuous review and improvement efforts. As SDG&E moves forward with implementation, continuous improvement efforts will be identified, including the need for additional processes, tools, and resources. SDG&E hired two full-time professionals dedicated to managing the development and implementation of the SMS. As the SMS evolves and produces increased data, analytics, stakeholder engagement, and feedback, for example, the need for additional support will also increase.

B. Enhanced Employee & Stakeholder Engagement, Including SMS Competence, Awareness, Survey and Training

An effective SMS requires extensive, on-going employee awareness and engagement efforts. SDG&E plans to develop and deliver SMS-specific training and create ways to measure and track such competencies. Creation of an employee engagement and training program is necessary to achieve full understanding and cultural adoption of SMS with its broader safety focus on all safety pillars: People Safety, Risk Identification & Management, Asset Safety, Gas & Electric Operations and Emergency Preparedness/Incident Response.

The practice of training and establishing competency at all levels is a form of investment in our employees. Employee competency and engagement are critical to the sustainability of the SMS and its effectiveness. Investment in building competency, like continual learning, builds trust and confidence that management prioritizes safety, their employees and contractor personnel, and the public. When competencies are defined, identified gaps in qualifications are addressed, and skill sets are refreshed, SDG&E will further enhance its safety culture and will provide employees the tools and means to safely carry out their job duties and responsibilities.

The effectiveness of the SMS will be measurable. In addition to tracking leading and lagging safety indicator data, SDG&E plans to survey its employees and stakeholders to further measure the effectiveness of the SMS and to identify opportunities for continuous improvement through identified controls and metrics.

C. Integration of New Technology and Enhanced Data and Analytics Capabilities for Continuous Safety Improvement

Given that an SMS is based on a continuous improvement framework, SDG&E seeks to integrate new technology to enhance worker and/or system safety (*e.g.*, data and analytic tools and communication tools) to measure the effectiveness of the SMS.

In order to have an effective SMS, SDG&E will need to make an intentional and deliberate effort to reveal risks within its business operations, evaluate multiple risks and threats using "what if" scenarios, and predict potential failures that may occur in its infrastructure system. An effective SMS needs to be integrated with new technology so that it continues to evolve with the changing business environment. SDG&E plans to explore the use of an electronic platform or an application that manages large amounts of safety and operational data, hazards, errors, observations, and key performance indicators (KPIs) from people, assets, programs, processes, and operations, and to use artificial intelligence for predictive analysis of potential issues. This effort may require non-labor dollars for use of consultants and licensed products.

D. Enhanced Documentation and Recordkeeping Practices

Procedures and work practices must be documented. Strong documentation and recordkeeping practices lead to greater certainty that the electric and gas systems will perform as expected. This element of the SMS demonstrates commitment and discipline. Work products of each SMS element become essential records. As SDG&E continues to implement the SMS, it proposes to adopt enhanced documentation and recordkeeping practices to align document and recordkeeping processes to coordinate cross-functional access to support the SMS. Enhanced documentation that is widely accessible to employees will allow for the sharing of best practices, findings and lessons learned. These efforts will improve safety and also provide ample opportunity for increased efficiencies.

E. Expanded Quality Management Program Focused on Asset Safety

SDG&E's SMS includes quality assurances and quality controls to validate adherence to the system and its processes and to gauge reasonable progress toward full compliance with all expected standards of performance and the resulting safe operation of the gas and electric systems. Quality assurances provide confidence that the SMS and its processes are designed to create the desired safety results and employ analysis of results to drive and improve the SMS. Quality controls provide measurable targets against expected metrics or process steps to confirm adherence to SMS processes and to prevent incidents and injuries.

SDG&E seeks to expand its asset safety quality management program and plans by developing formalized processes, procedures, and accountability measures for quality assurance of safety-critical assets from design and specification, through manufacturing, delivery, and

acceptance, to installation for safe operation. Outputs of an expanded quality management program focused on asset safety will be used to drive continuous improvement efforts.

F. Enhanced Stakeholder Feedback and Key Performance Indicator Monitoring, Tracking and Reporting

Stakeholder engagement and feedback are essential elements of an effective SMS and are integrated into the SMS's continuous improvement framework. Additionally, the SMS will undergo regular review to measure its effectiveness. SDG&E proposes to expand processes for considering qualitative (*e.g.*, subject matter expert feedback) and quantitative (*e.g.*, KPIs and quality control results) to perform data analysis for trends and emergent issues to identify and mitigate new risks and to improve the SMS. SDG&E will use data and information from the implementation of the reporting and feedback system to identify new and emerging risks for future risk evaluation and to evaluate performance of risk mitigation measures.

G. Development and Implementation of a Strong Management of Change Platform

Management of Change (MOC) is also an essential element of SDG&E's SMS and aligns with the Operational Controls tenet of API 1173. SDG&E currently has several existing MOC processes and procedures. As part of SDG&E's process development efforts for its SMS, SDG&E has developed an MOC process that can be applied enterprise-wide to identify the risks associated with changes to technology, equipment, procedures, or organization, so that impacted stakeholders are prepared to safely handle changes. The objective of this standardized MOC process is to reduce the possibility of introducing additional risk, or inadvertently increasing the risk, to public or employee health and safety, the environment, or the community as the result of a change. Under normal (non-emergency) circumstances, the MOC process requires that technical, procedural, organizational, and operational changes and the associated risks are reviewed, assessed, documented, and communicated prior to implementation, and that impacted stakeholders in the Company are informed accordingly. When circumstances dictate preservation of health and safety of the public, employee, community, electric system, or pipeline system (*e.g.*, emergency situations), then a change may be implemented prior to the MOC review.

While the MOC process has been developed, successful implementation will require additional tools, resources, and a strong electronic platform. SDG&E plans to further develop its existing MOC processes and procedures under the SMS framework and to consolidate the

various MOC processes into one electronic platform. This will provide consistency and rigor for managing changes throughout the Company. A centralized MOC process would establish minimum requirements for company-wide operations. Furthermore, the MOC process would identify the types of changes that must be managed, the levels within the organization that have the authority to approve the changes, a threshold for changes that would need to go through the MOC process and the likelihood and consequence of the change, considering safety, reputational, financial, legal, strategic, and operational impacts. The centralized MOC process will also help facilitate communications and sharing of approved changes with impacted organizations.

H. SMS Program Benchmarking, Measurement and Maturity Assessment for Continuous Improvement

Applying multiple layers of safety assurances demonstrates a commitment to improved performance and effective risk management. These safety assurances, coupled with regular review, assessment and audit, help evaluate quality and completeness of programs and confirm that risk management processes are systematic and disciplined. SDG&E believes that its SMS should cultivate a culture of trust and openness, which is vital to an enhanced safety culture. To measure this, SDG&E plans to review, survey, benchmark, measure, validate and/or audit its SMS program effectiveness for continuous improvement no less than bi-annually.

Assessment of the SMS on an ongoing basis would confirm that it is achieving its desired goals and objectives and is making progress towards effective risk management and improved safety performance. The SMS would be assessed for conformity with appropriate external benchmarks and the system's growth and development beyond conformity, otherwise known as a maturity assessment.

As part of its 2020 development efforts, SDG&E created a process to conduct regular review of its SMS to measure its effectiveness and to make necessary changes or enhancements to the SMS for continual improvement. This program will provide the tools and resources to implement that process. A system performance evaluation looks at how well the SMS activities, governance and processes are working, including evaluation of the following elements:

- Commitment – leading, following, managing, planning, funding;
- Accountability – role, responsibility, discipline;
- Involvement – safety committees, feedback/suggestions, recognition;

- Identification – inspections, observations, surveys, interviews;
- Analysis – incidents, tasks, program, system;
- Controls – engineering, management, corrective actions, maintenance;
- Education – orientation, instruction, training, personal experience, awareness; and
- Improvement – change management, design, implementation.

SDG&E's process for regular review of its SMS includes the following steps:

- Perform baseline survey, evaluate what SMS programs and processes are in place, and identify any that are missing (*e.g.*, determine whether there has been any change in law, regulation, or business since the prior review that would necessitate new and/or revised processes);
- Review safety programs, policies, and plans; verify documentation is up-to-date and effectively communicated;
- Examine risk identification processes and controls;
- Review incident investigation and emergency action plans;
- Evaluate safety management practices;
- Analyze safety communications and documentation;
- Review safety program evaluation(s) and audit(s);
- Review safety performance metrics data (operational, asset, occupational);
- Conduct management reviews/surveys; and
- Benchmark SMS performance (internally and externally) and use the findings for continual improvement.

Performing such assessments on an ongoing, regular basis will enhance and mature SDG&E's SMS and will help realize the benefits and value of the SMS continuous improvement framework.

VI. COSTS

The table below contains the 2020 recorded and forecast dollars for the programs and projects discussed in this CFF chapter.

Costs (Direct After Allocations, in 2020 $000)[8]							
Line No.	Description	Recorded		Forecast			
		2020 Capital	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
1	Development and Implementation of an Enterprise-Wide SMS	0	1,800	0	0	500	600
2	Enhanced Employee and Stakeholder Engagement, including SMS Competence, Awareness, Survey and Training	0	0	0	0	400	600
3	Integration of New Technology and Enhanced Data and Analytics Capabilities for Continuous Safety Improvement	0	0	0	0	500	1,000
4	Enhanced Documentation and Recordkeeping Practices	0	0	0	0	100	300
5	Expanded Quality Management Program Focused on Asset Safety	0	0	0	0	200	300
6	Enhanced Stakeholder Feedback and Key Performance Indicator Monitoring, Tracking, and Reporting	0	0	0	0	200	300
7	Development and Implementation of a Strong Management of Change Platform	0	0	0	0	500	1,000
8	SMS Program Benchmarking, Measurement, and Maturity Assessment for Continuous Improvement	0	0	0	0	200	300

[8] Costs presented in the workpapers may differ from this table due to rounding. The figures provided are direct charges and do not include company loaders, with the exception of vacation and sick. The costs are also in 2020 dollars and have not been escalated in forecasts beyond 2020.