SDGE

A Sempra Energy utility®

Risk Assessment and Mitigation Phase

(Chapter SDG&E-Risk-8)
Incident Involving An Employee

May 17, 2021

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RISK: INCIDENT INVOLVING AN EMPLOYEE

I. INTRODUCTION

The purpose of this chapter is to present SDG&E's risk control and mitigation plan for the Incident Involving an Employee risk (IIE Risk). Each chapter in this Risk Assessment Mitigation Phase (RAMP) Report contains the information and analysis that meets the requirements adopted in Decision (D.) 16-08-018, and D.18-12-014 and the Settlement Agreement included therein (the Settlement Decision).[1]

SDG&E has identified and defined RAMP risks in accordance with the process described in further detail in Chapter RAMP-B of this RAMP Report. On an annual basis, SDG&E's Enterprise Risk Management (ERM) organization facilitates the Enterprise Risk Registry (ERR) process. The ERR process influenced how risks were selected for inclusion in this 2021 RAMP Report, consistent with the Settlement Decision, as discussed in Chapter RAMP-C.

The RAMP Report's purpose is to present a current assessment of key safety risks and the proposed activities for mitigating those risks. The RAMP Report does not request funding. Any funding requests will be made in SDG&E's General Rate Case (GRC) application. The costs presented in this 2021 RAMP Report are those costs for which SDG&E anticipates requesting recovery in its Test Year (TY) 2024 GRC. SDG&E's TY 2024 GRC presentation will integrate developed and updated funding requests from the 2021 RAMP Report, supported by witness testimony.[2] This 2021 RAMP Report is presented consistent with SDG&E's GRC presentation, in that the last year of recorded data (2020) provides baseline costs and cost estimates are provided for years 2022-2024, as further discussed in Chapter RAMP-A. This 2021 RAMP Report presents capital costs as a sum of the years 2022, 2023, and 2024 as a three-year total; operations and maintenance (O&M) costs are only presented for TY 2024 (consistent

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[1] D.16-08-018 adopted the requirements previously set forth in D.14-12-025. D.18-12-014, the Phase Two Decision Adopting Safety Model Assessment Proceeding (S-MAP) Settlement Agreement With Modifications, adopted the Settlement Agreement Among Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, San Diego Gas & Electric Company, The Utility Reform Network, Energy Producers and Users Coalition, Indicated Shippers, and the Office of Ratepayer Advocates, which contains the minimum required elements to be used by the utilities for risk and mitigation analysis in the RAMP and GRC.

[2] Settlement Decision at Attachment A, A-14 ("Mitigation Strategy Presentation in the RAMP and GRC").

with the GRC). Costs for each activity that directly address each risk are provided where those costs are available and within the scope of the analysis required in this RAMP Report.

Throughout this 2021 RAMP Report activities are delineated between controls and mitigations, consistent with the definitions adopted in the Settlement Decision. A "control" is defined as a "[c]urrently established measure that is modifying risk."[3] A "mitigation" is defined as a "[m]easure or activity proposed or in process designed to reduce the impact/consequences and/or likelihood/probability of an event."[4] Activities presented in this chapter are representative of those that are primarily scoped to address SDG&E's IIE Risk; however, many of the activities presented herein also help mitigate other areas.

As discussed in Chapters RAMP-A and RAMP-C, SDG&E has endeavored to calculate the Risk Spend Efficiency (RSE) for all controls and mitigations presented in this risk chapter. However, for controls and mitigations where no meaningful data or Subject Matter Expert (SME) opinion exists to calculate the RSE, SDG&E has included an explanation why no RSE can be provided, in accordance with California Public Utilities Commission (CPUC or Commission) Safety Policy Division (SPD) staff guidance.[5] Activities with no RSE value presented in this 2021 RAMP Report are identified in Section V below.

A.   **Risk Overview**

Employee safety is a core value at SDG&E. SDG&E's safety-first culture focuses on its employees, customers, and the public, and is embedded in every aspect of the Company's work. Employees should be able to go home to their families and loved ones after work each day and be able to return to work safely the next day.   Safety is not compromised for production, customer satisfaction, or any other goal, and no activity is so important that it should jeopardize safety.

The IIE Risk was included in SDG&E's 2020 Enterprise Risk Registry (ERR), and for purposes of this RAMP filing is defined as the risk of an incident, involving one or more on-duty employees, that causes serious injury or fatality to a company employee. The IIE Risk Chapter

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[3]   Settlement Decision at 16.

[4]   *Id.* at 17.

[5]   See Safety Policy Division Staff Evaluation Report on PG&E's 2020 Risk Assessment and Mitigation Phase (RAMP) Application (A.) 20-06-012 (November 25, 2020) at 5 ("SPD recommends PG&E and all IOUs provide RSE calculations for controls and mitigations or provide an explanation for why it is not able to provide such calculations.").

focuses on controls and mitigations that address safety, including education, training, and other internal enhancements.[6] SDG&E's IIE Risk mitigation programs are founded on proven employee-based programs, safety training, workforce education, and SDG&E's Illness & Injury Prevention Program (IIPP). The elements of SDG&E's IIPP include:

- Commitment/assignment of responsibilities;
- Safety communications systems with employees;
- System for assuring employee compliance with safe work practices;
- Scheduled inspections/evaluation system;
- Accident investigation;
- Procedures for correcting unsafe or unhealthy conditions;
- Safety and health training and instruction; and
- Recordkeeping and documentation.

SDG&E's strong safety culture and commitment to developing process and programs is designed to manage the IIE Risk. SDG&E's safety performance measures have shown consistent improvement overall in recent years. As noted above, many of the IIE Risk mitigations identified herein also help mitigate these other risks. While the IIE Risk definition is limited in scope for purposes of this RAMP Chapter, it is important to note that the operational risks addressed in other Chapters of this RAMP Report[7] can result in an incident where an employee is seriously injured, or a fatality is present.

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[6] The Electric Infrastructure Integrity (EII) Chapter (SDG&E-2) of this RAMP Report covers the risk event of an employee coming into contact with energized equipment. Even though the potential consequences of such a risk event are similar to those of an IIE Risk event (causing serious employee injury or fatality), they are included in the EII Chapter because mitigations for an EII Risk event are focused on infrastructure protections and improvements.

[7] *See*, *e.g.,* SDG&E-2: Electric Infrastructure Integrity; SDG&E-9: Incident Related to the Medium Pressure System Incident; SDGE-7: Excavation Damage (Dig-in) on the Gas System; and SDG&E-3: Incident Related to the High Pressure System.

B. Risk Definition

For purposes of this RAMP Application, SDG&E's IIE Risk is defined as the risk of an incident, involving one or more on-duty employees, that causes serious injury or fatality to a company employee.[8]

C. Scope

Table 1 below provides what is considered in scope for the Incident Involving an Employee Risk in this RAMP Application.

Table 1: Risk Scope

In-Scope:	The risk of an incident, involving one or more on-duty employees, that causes serious injury or fatality (as defined by OSHA) to a company employee.
Data Quantification Sources:	Subject Matter Experts provided data, as well as company data reviewed and adjusted by SMEs to SDG&E's applicable use. See Appendix B for additional information.

II. RISK ASSESSMENT

In accordance with the Settlement Decision, this section describes the risk bow tie, possible drivers, potential consequences, and the risk score for the IIE Risk. [9]

A. Risk Bow Tie and Risk Event Associated with the Risk

The risk bow tie is a commonly used tool for risk analysis, and the Settlement Decision instructs the utility to include a risk bow tie illustration for each risk included in RAMP.[10] As illustrated in the risk bow tie shown below in Figure 1, the risk event (center of the bow tie) is an Incident Involving an Employee, the left side of the bow tie illustrates drivers/triggers that lead to a potential IIE Risk event, and the right side shows the potential consequences of an IIE Risk event. SDG&E applied this framework to identify and summarize the information provided in

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[8]   A "serious injury" is defined in the California Code of Regulations as "any injury or illness occurring in a place of employment or in connection with any employment that requires inpatient hospitalization for other than medical observation or diagnostic testing, or in which an employee suffers an amputation, the loss of an eye, or any serious degree of permanent disfigurement, but does not include any injury or illness or death caused by an accident on a public street or highway, unless the accident occurred in a construction zone." Title 8 California Code of Regulations (CCR) § 330(h).

[9]   Settlement Decision at 33 and Attachment A, A-11 (Bow Tie).

[10]   *Id.* at Attachment A, A-11.

Figure 1. A mapping of each mitigation to the element(s) of the risk bow tie addressed is provided in Appendix A.

Figure 1: Risk Bow Tie

Incident Involving an Employee

Drivers/Triggers

- DT.1 Employees deviate from policies or procedures
- DT.2 Hazards in the work environment (work locations, roadways, etc.)
- DT.3 Non or improper use of personal protective equipment
- DT.4 Unsafe operation of equipment or motor vehicles
- DT.5 Damaged equipment and/or infrastructure
- DT.6 Employee fatigue/complacency
- DT.7 Employees impairment due to environmental factors
- DT.8 Inadequate employee training
- DT.9 Lack of oversight of employees work
- DT.10 New/transferred employee inexperience
- DT.11 Inadequate or inaccurate utility and /or substructure location info
- DT.12 Inadequate use of job site safety plans/job safety analysis

Incident Involving an Employee

Potential Consequences

- PC.1 Serious injuries or fatalities
- PC.2 Property damage
- PC.3 Operational and reliability impacts
- PC.4 Penalties and fines
- PC.5 Adverse litigation
- PC.6 Erosion of public confidence

B. Cross-Functional Factors

This RAMP filing includes separate cross-functional factor (CFF) sections that impact the IIE Risk and help to further mitigate SDG&E's IIE Risk. For instance, SDG&E's Safety Management System (SMS) is a CFF that will further mitigate the IIE Risk. SDG&E's enterprise-wide SMS is designed to enhance the Company's longstanding commitment to safety, which focuses on people safety (employee, contractor, customer and public), asset safety (all Company infrastructure), gas and electric operations safety, risk identification and management, and emergency preparedness and incident response. The SMS will develop a cohesive system that promotes improved communication, better documentation, and enhanced coordination to continue to build upon our strong safety culture and further reduce our IIE Risk.

Programs and projects discussed in the Emergency Preparedness and Response and Pandemic CFF, the Workforce Planning/Qualified Workforce CFF, and Records Management CFF also further mitigate IIE Risk.

C.   Potential Drivers/Triggers[11]

The Settlement Decision instructs the utility to identify which element(s) of the associated risk bow tie are addressed by each mitigation.[12] When performing the risk assessment for IIE Risk, SDG&E identified potential leading indicators, referred to as drivers or triggers (DT). These include, but are not limited to:

- **DT.1 – Employees deviate from policies or procedures:** SDG&E has many safety-related policies and procedures for employees to follow. Failure of someone to adhere to safety policies and procedures could result in an IIE.

- **DT.2 – Hazards in the work environment (work locations, roadways, etc.):** Unsafe work environments (work locations, roadways and parking places, customer premises) gas equipment conditions, Polychlorinated Biphenyls (PCB), lead from paint, asbestos, and fumigation chemicals, for example, could each lead to an IIE.

- **DT.3 – Non or improper use of personal protective equipment:** Safety equipment serves to protect employees and contractors from avoidable injuries. Failure to wear personal protection and safety equipment can lead to an IIE.

- **DT.4 – Unsafe operation of equipment or motor vehicles:** Failure to follow the law and/or other applicable safety practices could result in an IIE.

- **DT.5 – Damaged equipment and/or infrastructure:** Damage to gas or electric equipment or infrastructure could lead to an IIE.

- **DT.6 – Employee fatigue/complacency:** Employee fatigue or complacency could lead to an IIE.

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[11]   Potential drivers or triggers are an indication that a risk could occur; they do not reflect actual or threatened conditions.

[12]   D.18-12-014 at Attachment A, A-11.

- **DT.7 – Employee impairment due to environmental factors:** Hazardous working conditions could lead to an employee becoming impaired which could lead to an IIE.

- **DT.8 – Inadequate employee training:** Failure to provide adequate safety training could result in an IIE.

- **DT.9 – Lack of oversight of employees' work:** Employees performing work without an appropriate amount of supervision and control may be prone to errors or become careless, which could lead to an IIE.

- **DT.10 – New/transferred employee inexperience:** New employees or employees transferred from another work area may not be as skilled in working as safely as an experienced employee which may lead to an IIE.

- **DT.11 – Inadequate or inaccurate information on utility or substructure location:** Having the correct and current information about the equipment or substructures being worked on is important to working safely. Incorrect or inadequate equipment/substructure information may lead to an IIE.

- **DT.12 – Inadequate use of job-site safety plans or analysis:** Knowledge and use of job-site safety plans and/or analysis of job site hazards provides employees with the information needed to safely perform their work activities. If those plans or analysis are not adequate, it could lead to an IIE.

D.   Potential Consequences of Risk Event

Potential consequences are listed to the right side of the risk bow tie illustration provided above.[13] If one or more of the drivers/triggers listed above were to result in an incident, the potential consequences, in a reasonable worst-case scenario, could include:

- PC.1 - Serious injuries or fatalities;
- PC.2 - Property damage;
- PC.3 - Operational and reliability impacts;
- PC.4 - Penalties and fines;
- PC.5 - Adverse litigation; and
- PC.6 - Erosion of public confidence.

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[13]   *See id.* at A-8 ("Identification of Potential Consequences of Risk Event").

These potential consequences were used in the scoring of the IIE Risk in SDG&E's 2020 Enterprise Risk Registry.

E.   Risk Score

The Settlement Decision requires a pre- and post-mitigation risk calculation.[14] Chapter RAMP-C of this RAMP Application explains the Risk Quantitative Framework which underlies this Chapter, including how the Pre-Mitigation Risk Score, Likelihood of Risk Event (LoRE), and Consequence of Risk Event (CoRE) are calculated.

Table 2: Pre-Mitigation Analysis Risk Quantification Scores[15]

	LoRE	CoRE	Risk Score
Incident Involving an Employee	0.83	1,275	1,062

Pursuant to Step 2A of the Settlement Decision, the utility is instructed to "use actual results, available and appropriate data, and/or Subject Matter Experts (SMEs) to identify potential consequences of a risk event . . . ."[16]

Historical internal data is used to model the uncertainty of safety frequency and consequence; SME provided data for financial and stakeholder satisfaction analysis. The probability distribution of safety and stakeholder satisfaction results per year is yielded using Monte Carlo method. Specific data sources will be provided in workpapers.

III.   2020 CONTROLS

This section describes the controls currently in place, as required by the Settlement Decision.[17] The controls in this section were in place as of December 31, 2020. Controls that will continue as part of the Plan are addressed in Section IV.

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[14]   *Id.* at A-11 ("Calculation of Risk").

[15]   The term "pre-mitigation analysis," in the language of the Settlement Decision (Attachment A, A-12 ("Determination of Pre-Mitigation LoRE by Tranche," and "Determination of Pre-Mitigation CoRE," "Measurement of Pre-Mitigation Risk Score")), refers to required pre-activity analysis conducted prior to implementing control or mitigation activity.

[16]   *Id.* at Attachment A, A-8 ("Identification of Potential Consequences of Risk Event").

[17]   Settlement Decision at 33.

A.   **Control 1 - Mandatory Employee Health and Safety Training Programs and Standardized Policies**

SDG&E's employees receive extensive training because SDG&E believes safety starts with proactive upstream measures to reduce the likelihood of a safety incident from occurring. Much of the safety training is available on-line through the learning management system (LMS).

On-line/Learning Management System Training: Online training refers to a course, education materials, or program delivered online via the intranet or through SDG&E's LMS. Training courses are accessible at any time, from any location, and performed at the user's convenience. Additionally, completion of the training is tracked in SDG&E's LMS system to confirm compliance.

SDG&E's employee health and safety training programs comprise the following elements:

Injury Illness Prevention Program (IIPP): In California, every employer is required by law to provide a safe and healthful workplace for its employees.[18] Further, Title 8 of the California Code of Regulations requires every employer to have an effective IIPP.[19] SDG&E's IIPP is a written plan for preventing injury and illness that includes the following elements:

- Management commitment/assignment of responsibility;
- Safety communication system with employees;
- System for assuring employee compliance with safe work practices;
- Scheduled inspections/evaluation system;
- Accident and illness investigation;
- Procedures for correcting unsafe or unhealthy conditions;
- Safety and health training instruction; and
- Recordkeeping and documentation.

Employee Safety Handbook/Standards: SDG&E's employee safety handbook is a collection of information, instructions, policies, and procedures intended to provide guidance on safe work practices.

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[18]   Cal. Labor Code § 6400.

[19]   8 CCR § 8350.

Safety standards are specifications designed to promote the safety of work activities or processes. Standards are rules that describe the methods that SDG&E uses to protect employees from hazards and are used to communicate safe practices to the workforce. These standards establish the framework and guidance for employee safety performance. Standards are reviewed and updated at least every five years or when regulatory or procedural changes are implemented, whichever comes first.

Industrial Hygiene Program: SDG&E has a robust Industrial Hygiene program in compliance with Cal/OSHA regulations. Industrial Hygienists are responsible for monitoring changes in employee safety and health regulations, developing internal safety procedures to confirm compliance with the applicable regulations, and managing Company-wide implementation of key industrial hygiene programs, such as Hazard Communication, Hearing Conservation, Respiratory Protection, Wildfire Smoke Protection, and Asbestos and Lead Exposure Management.

Arc Flash Hazard Assessment Training: This training teaches SDG&E's employees how to properly assess electric arc and flash hazards, how to evaluate the types of hazards, and how to determine the level of protection needed. Initial training is mandatory for employees who may work on or near low- or high-voltage lines or equipment and as needed thereafter. The objectives of training are to identify:

- Hazards of electric arcs associated with energized lines and equipment;
- Safety practices and protective measures including flame-resistant/arc-rated clothing; and
- Regulations and Company policy/procedures.[20]

Confined Space Training: Confined Space Training is mandatory for employees who may:

- Enter or have the need to enter confined spaces; and/or
- Encounter confined spaces in the course of Company business.[21]

The objectives of the training are to: (1) identify characteristics of permit-required confined spaces and associated hazards; (2) understand the roles and responsibilities of each

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[20]   *See* 8 CCR § 3202, 8 CCR § 2940.6 and Title 29 Code of Federal Regulations (CFR) § 1910.269.

[21]   8 CCR § 5157.

entry team; (3) demonstrate how to manage, control and eliminate hazards; (4) perform safe entry procedures; and (5) understand how to read a permit-required entry permit.

Safety in Motion (SIM): SIM is an as-needed body mechanics education program to inform employees about body positioning to help prevent injury from, for example, sprains, strains, and tears. It is designed to equip each field employee with a consistent process for approaching each job safely by enhancing knowledge and skills and the ability to identify and use the best body positioning. This program provides customized training based on known risk factors such as intensity of effort (*e.g.,* jackhammering), awkward posture (*e.g.,* working on a pole or digging), and/or repetition (*e.g.,* wrenching) with the objective of providing employees with alternatives to decrease injury potential. SIM's overall goal is to reduce unnecessary strain on the body through use of engineering controls, tools, and physical techniques that allow employees to "work smarter not harder."

Emergency Action Plan (EAP): All Company facilities must have an EAP for the purpose of communicating to employees their responsibilities during an emergency. The plans include, but are not limited to: communication strategies, evacuation routes, and procedures for accounting for employees. The safety of all employees is the primary goal during a workplace emergency. SDG&E's EAP procedures are taught through web-based, in-person, and/or classroom training. Training is mandatory for employees designated to assist with emergency evacuations and all employees are trained on the EAP when they are hired, transferred, when the plan is changed, and when an employee is transferred to a new work area or when new hazards are introduced to an existing work area. Additionally, an evacuation drill is held annually.

Site and Vehicle automated external defibrillators (AED) Program: AEDs are available at all SDG&E work locations and are on crew vehicles with two or more employees. Designated employees are trained on the use of AEDs as well as general first aid, cardiopulmonary resuscitation (CPR), and bloodborne pathogens. With simple audio and visual commands, SDG&E's AEDs are designed to be simple to use for the layperson.

Electric and/or Magnetic Fields (EMF): Although recognizing that no conclusive research exists that EMFs pose a health hazard, the CPUC has directed the utilities to nonetheless take a number of steps to address the public's concerns. SDG&E's EMF Safety Program, developed in accordance with CPUC Decisions 93-11-013 and 06-01-042, includes the following:

- Maintaining a staff of informed representatives available to talk with customers and employees about EMF issues;

- Providing magnetic field measurements for customers requesting the service;

- Providing objective EMF health information to the public and notifying customers of research milestones as this information becomes available;

- Providing employee education on EMF issues;

- Supporting, funding, and monitoring EMF research;

- Implementing low-cost and no-cost measures, where appropriate, to reduce fields associated with new construction projects; and

- Participating in communication forums and regulatory proceedings to remain current on all EMF-related issues.

B.   Control 2 - Drug and Alcohol Testing Program

SDG&E has implemented an employee drug and alcohol testing program managed in accordance with state and federal regulations. Sempra Energy's Substance Abuse and Testing (Fitness-For-Duty and Reasonable Cause) Policy (Substance Abuse Policy), which all SDG&E employees are responsible for knowing and complying with, prohibits, among other things, the use of drugs and/or alcohol during working hours and/or reporting to work in an unfit condition due to drugs and/or alcohol. Violations of this policy are cause for disciplinary action up to and including termination of employment.

Additionally, all supervisory personnel who oversee SDG&E employees that perform United States Department of Transportation (DOT) defined "safety-sensitive functions" (operation, maintenance, or emergency response on pipeline systems, and operators of commercial vehicles)[22] are required to complete Supervisor Substance Abuse Awareness training. This training educates supervisors about their responsibilities under DOT regulations and Company policy, including identifying physical, behavioral, speech, and performance indicators of probable substance abuse, and understanding the criteria for post-accident drug testing. Employees suspected of being under the influence of alcohol or controlled substances

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[22]   49 CFR Part 40.

are subject to reasonable cause testing. Employees in safety-sensitive DOT positions are also subject to random testing.[23]

Reasonable Suspicion Identification and Testing applies to all employees. The Substance Abuse Policy requires supervisors to remove a suspected employee(s) from work if recognizable signs of impairment are observed after using the reasonable suspicion checklist.

Post-Accident Testing

- If Post-accident criteria are met, post-accident testing may be commenced under guidance of the HR Services department and/or designated employer representative (DER).

- Federal Motor Carrier Safety Administration (FMCSA) requirements include post-accident testing as soon as possible, but no later than 32 hours after, when there is an accident while driving a commercial motor vehicle requiring a commercial driver's license to operate and the following occurs:

    - loss of human life, or

    - Citation is issued by law enforcement and one of the following:

        - Medical treatment away from scene of the accident, or

        - A vehicle incurring damage as a result of the accident is towed from the scene.[24]

- PHMSA requirements include post-accident testing as soon as possible, but no later than 32 hours after a significant, reportable incident occurs that involves a gas pipeline or LNG facility.[25]

C.   **Control 3 - Strong Safety Culture (*e.g.*, safety meetings, committees, surveys, safety campaigns, stop the job, near miss reporting)**

As further discussed in Chapter RAMP-D, SDG&E is committed to a strong safety culture and places the highest priority on employee, customer, and public safety. To

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[23]   *See* 49 CFR Part 382 (establishing a program designed to prevent accidents and injuries resulting from the misuse of alcohol or use of controlled substances by drivers of commercial vehicles); 49 CFR Part 199 (establishing an anti-drug and alcohol misuse prevention plan for employees in safety-sensitive positions that perform pipeline operations, maintenance, or emergency response functions as defined by Pipeline and Hazardous Materials Safety Administration (PHMSA)).

[24]   49 CFR § 382.303.

[25]   49 CFR § 199.105.

continuously strengthen our safety culture, Company employees attend safety meetings, tailgates, congresses, and are surveyed every two years to solicit their candid feedback, as further detailed below. SDG&E incorporated action items identified in the 2018 survey results to further strengthen its organizational safety plans and employee safety program and culture, and will do likewise based on results from the 2020 survey. SDG&E's efforts to establish a strong safety culture and further employee safety initiatives include:

Safety Stand-downs: A Safety Stand-down is a voluntary event for supervisors to talk directly to employees about safety. These events provide an opportunity to discuss hazards, protective methods, and the Company's safety policies, goals and expectations.

Safety Congress and Leadership Awards: Since 2002, this event has been held annually. It provides a forum for safety committee members, safety leaders, and others to share and exchange information and ideas through networking and workshops. At this event, safety leaders are recognized for living by the Company's safety vision, turning that vision into action, embracing the SDG&E safety culture, and demonstrating safety leadership.

Safety Tailgates: Safety tailgate talks are short informational meetings held with employees to discuss work-site related safety. The purpose of a tailgate is to inform employees of specific hazards associated to a task and the safe way to do a job. Tailgate talks also serve as a reminder to employees of what they already know while establishing the supervisor's credibility and conscientiousness about his/her oversight role.

Safety Meetings: The main objectives of safety meetings are to remind employees of safe practices they have already learned and to introduce and build awareness of new techniques, new equipment, or new regulations that must be observed. Safety meetings occur every 10 days for employees engaged in field construction or construction associated activities and monthly for employees involved in operations, maintenance, or other manual work (employees who spend at least 50% of their time in the field).

Grassroots Safety Culture Change Teams (GRSC): Launched in 2009, SDG&E's GRSC involves a safety culture journey that goes beyond the 3 E's of engineering, enforcement, and education. The emphasis is on building trust, relationships, and partnerships that affect the Company's strategic focus areas, including safety. This approach uses an "iceberg analysis" to identify cultural norms and assumptions that cannot be seen (below the waterline) that may undermine established policies and procedures. Under a guidance team and team coach, GRSC

teams propose projects with goals to help move the Company's safety culture forward, improving awareness, preventing injuries, bridging communication gaps, and preserving pride in SDG&E's work.

These teams train and empower frontline employees to advance a positive safety culture in their workgroups by addressing behaviors and norms to take safety beyond compliance. This nationally recognized program is deployed in partnership with International Brotherhood of Electrical Workers (IBEW) Local 465.

Executive Safety Council (ESC) Team Meeting Dialogs: The ESC is the governing body for all safety committees. Led by SDG&E's Chief Operations Officer and Director – Safety, the ESC advances Company safety culture and addresses enterprise-wide safety strategy. The meeting dialogs are held at Company locations and integrate employee and supervisor dialog sessions so that employees have an opportunity to share safety experiences with Company leadership.

Biennial Safety Culture Survey: Every two years, SDG&E employees take a Safety Barometer Survey and share their candid insights on safety in six critical areas: Management Commitment, Supervisor Engagement, Employee Involvement, Safety Support Activities, Safety Support Climate, and Organizational Climate. The Safety Barometer Survey is provided by the National Safety Council (NSC), an independent non-profit organization that has advocated for employee and public safety for over 100 years.[26]

The NSC compares our survey results to those of other participating companies in their survey database (currently, 580). The results of SDG&E's 2020 survey placed SDG&E in the 98th percentile and in the top 2 percent of the 580 organizations in the NSC database who participated in the survey in 2020. The overall score for SDG&E increased by 8 points from the 2018 survey. Action plans based on the 2020 NSC survey results will be developed and executed.

The six critical areas of the NSC survey and SDG&E's 2020 rankings in those areas are:

- **Management Commitment (top 2%).** Management Participation items describe ways in which top and middle management demonstrate their leadership and

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[26] National Safety Council, *NSC Safety Training*, *available at* https://www.nsc.org/.

commitment to safety in the form of words, actions, organizational strategy, and personal engagement with safety.

- **Supervisor Engagement (top 1%).** Supervisor Participation items consider six primary roles through which supervisors communicate their personal support for safety: leader, manager, controller, training, organizational representative, and personal engagement with safety.

- **Employee Involvement (top 5%).** Employee Participation items specify selected actions and reactions that are critical to making a safety program work. Emphasis is given on personal engagement, responsibility, and compliance.

- **Safety Support Activities (top 4%).** Safety Support Activities items probe the presence or quality of various safety program practices, with a focus on communications, training, inspection, maintenance, and emergency response.

- **Safety Support Climate (top 2%).** Safety Support Climate items asked employees across the organization for general beliefs, impressions, and observations about management's commitment and underlying values with regards to safety.

- **Organizational Climate (top 3%).** Organizational Climate items probe general conditions that interact with the safety program to affect its ultimate success, such as teamwork, morale, and employee turnover.

Stop Work Authority (*i.e.,* Stop the Job / Stop the Task): SDG&E employees, regardless of rank or title, are given the authority to "stop a job" at any time if they identify a safety hazard and are encouraged to raise a red flag whenever they feel it is needed.

Close Call/Near-Miss Program: SDG&E recognizes the importance of learning from close calls and near-misses to reduce the potential for a serious incident or injury in the future. The National Safety Council describes a close call or near-miss as an unplanned event that did not result in injury, illness, or damage, but had the potential to do so. SDG&E encourages employees to report close calls in tailgates, safety meetings, through an online process, or by using a newly developed smart device application. Reporting online or through the app allows employees to report anonymously. The information is submitted to Safety Services for review and then is shared with employees throughout the company, so they understand and benefit from overall awareness and lessons learned.

Incident Investigation: As part of improving its safety culture, SDG&E's Safety Department has established a comprehensive and robust incident investigation standard and reporting process. Applying this process uniformly across the Company will result in more consistent investigations and will allow lessons learned to be shared broadly. In addition, regular training is provided for those conducting incident investigations to confirm consistency and more thorough investigations.

Safety Committees/Sub-committees:

Field and Office Site Safety Committees: These site-specific committees are actively engaged in safety awareness through education, promoting a healthy lifestyle, encouraging work-life balance, and always maintaining a safe work environment. To keep the committees connected, quarterly meetings are held with committee chairpersons and co-chairpersons. During these meetings safety updates are shared, training is provided, and action planning steps identified. Like all other safety committees, site committees roll out to the ESC as the governing body.

Electric Safety Subcommittee (ESS): This committee brings management and electric front-line people together to discuss safety concerns from the perspective of those closest to the risks. The objectives are to make a lasting difference in reducing unnecessary risk, resolve division-wide safety issues/concerns, and have front-line employees bring information to their respective workgroups.

Gas Safety Subcommittee (GSS): This committee brings management and gas operations front-line people together to discuss safety concerns from the perspective of those closest to the risks. The objective is to reduce unnecessary risk, resolve gas safety issues/concerns, and communicate information back to front-line employees.

Office Safety Director Committee: This committee develops and shares best practices for SDG&E office employees. The committee initiates projects, initiatives, and action plans to reduce and eliminate office injuries at company facilities and identifies and monitors leading indicators.

As further detailed in the SMS CFF chapter of this RAMP Report, SDG&E's enterprise-wide SMS establishes a framework that connects and integrates each of the above-listed programs, initiatives and committees. Taking a proactive, systematic approach to safety, being able to assess 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 safety programs more effective.

D.   **Control 4 - Employee Behavioral Accident Prevention Process Program**

SDG&E's Behavioral Accident Prevention Process (BAPP®), formerly referred to as the Behavior Based Safety (BBS) Process, is a partnership between management and volunteers, front-line employees (employee led and management supported). The program provides a structured "process" for continuous safety improvements specific to the high-risk tasks and situations faced by front-line employees. BAPP volunteers rely on hazard and risk assessment checklists, developed from historical injury analytics, to perform observations focused on key areas of "critical risk." They conduct on the spot accountability conversations, defining "Safe" and "At Risk" behaviors, and also collect safety data. This data is further analyzed and utilized to identify and further act on undiagnosed risk exposure. The BAPP teams work with leadership to drive hazard and risk removal and mitigation efforts.

As part of SDG&E's long-term safety strategy, we are reinvesting into BAPP as our flagship safety employee-led process. Within the past year SDG&E reinstated the position of the BBS Specialist, a professionally trained, dedicated solely to improving the BAPP process. The BBS Specialist performs periodic assessments of the BAPP teams and leadership to identify growth opportunities and leadership support needs. This year will focus on using the assessment results to improve the process. One example is to better define roles and responsibilities for each level of the process, including for volunteer participants, the supporting leadership teams, or the front-line workers. We will also be reviving a governance team to assist in accomplishing key BAPP process improvement goals.

E.   **Control 5 - A Comprehensive Environmental & Safety Compliance Management Program**

SDG&E uses an Environmental and Safety Compliance Management Program (ESCMP) to address compliance requirements, awareness, goals, monitoring, and verification related to all applicable environmental, health and safety laws, rules and regulations, training, and Company standards, in accordance with the internationally accepted standard, ISO 14001. With ESCMP, the Company implements annual periodic facility environmental and safety self-assessments and inspections tracks corrective actions identified in these activities to closure, provides environmental and safety trainings to employees, tracks documentation of safety incidents and

completion of incident-related corrective actions, and monitors completion of mandatory safety meetings. The objectives are to identify, correct and remediate workplace hazards, confirm employee accomplishment of compliance training, and develop lessons learned to share with employees, with the ultimate goal to reduce injuries and illnesses.

The year-end ESCMP Certification process involves submittal of information into a database used to collect and record employee and facility compliance. For this submittal, two types of checklists are available and completed in the online system: An employee-based checklist and a facility-based checklist.

Employee-based checklist - Addresses safety and environmental training, awareness, and other safety and environmental employee-based concerns.

Facility-based checklist – Addresses safety and environmental permitting, spill reporting, and other safety and environmental facility-based compliance concerns.
The Environmental Department and Safety Departments review submittals in the online system and confirm all required inspections were completed, assigned training was done, and all corrective actions were addressed. The annual reviews create an opportunity to identify gaps in compliance and implement corrective action.

F.   Control 6 - Employee Safety Communications and Awareness Programs

Safety is a core value at SDG&E. As such, it is important to provide employees with safety-related information in a timely manner regarding standards and safe work practices. Safety communications are a tool used to inform employees about safety hazards and exposures, hazard mitigation, rules, regulations, warnings, goals, and progress reports through an array of media. SDG&E communicates information through safety bulletins, emails, newsletters, electronic bulletin boards (*e.g.,* digiboards), posted signage throughout the workplace, tailgate meetings and reports.

Figure 2 below is an example of a safety email communication distributed to all SDG&E employees:

Figure 2: Sample Employee Safety Communication
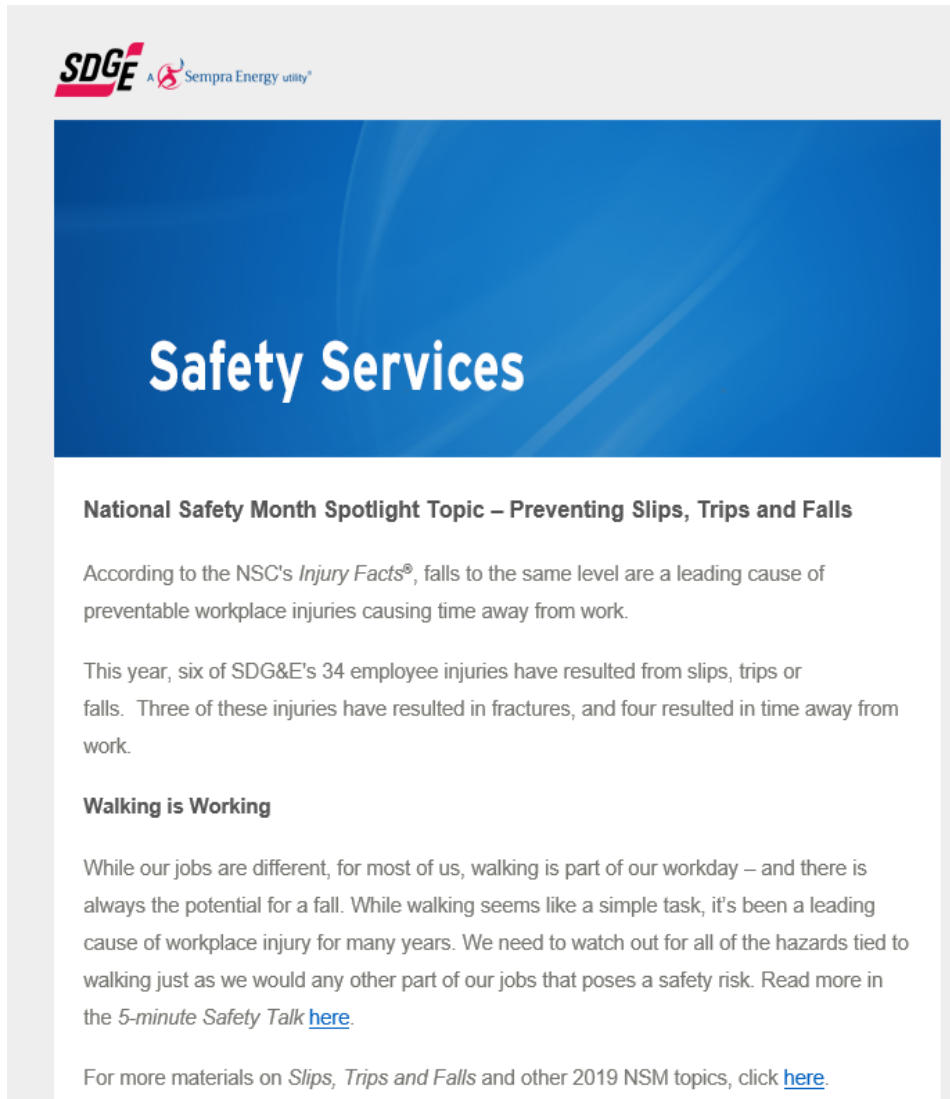
G. Control 7 - Employee Wellness Programs

Wellness Programs are designed to promote the physical and mental well-being of all Company employees, supporting SDG&E's commitment to providing quality health and wellness programs to motivate employees and promote safe and healthy lifestyles. Wellness Programs coordinates employee assistance services including:

- Health & Education Seminars/Lectures (Stress Management, Weight Management, Nutrition, Heart Disease, High Blood Pressure, etc.);
- Financial wellness education;
- Annual Flu immunizations;

- Health Screenings (*i.e.* Body Fat, Cholesterol, Blood Pressure, Glucose, Bone Density);

- Work-site programs (*i.e.,* Fitness Classes, Weight Watchers, Yoga, Walking Class, Chair Massages, Reflexology);

- Special Events (Safety, Health & Wellness Fairs, Blood Drives, lunch and learns, wellness safety events);

- Educational pamphlets/brochures on a variety of health & wellness topics;

- Employee Assistance Program (EAP) (professional and confidential counseling service providing assessment, treatment, and referral services to community resources and licensed counselors who specialize in specific areas of employee well-being);

- Formal and Mandatory EAP referrals;

- Evaluation management of mental health behaviors affecting job performance, critical incidents and fitness for duty determination;

- Safety stand-down support;

- Wellness newsletter; and

- Back up dependent and adult care.

Other examples of SDG&E safety and wellness programs include, but are not limited to:

- Occupational Health Nurse (OHN) Services – Occupational health nursing is a specialty practice that delivers health and safety programs and services to employees. The practice focuses on promotion and restoration of health, prevention of illnesses and injuries, education and protection from work related and environmental hazards.

- Telemedicine – The practice of healthcare diagnosis and physician consultation using telecommunications technology. Telemedicine eliminates any wait time to see a provider by allowing quicker, real-time, on-demand evaluation for first aid and healthcare. It supports on-site first-aid injury care and injury care management.

H.   Control 8 - OSHA Voluntary Protection Program (VPP)

SDG&E participates in the Federal and California Voluntary Protection Program (Cal/VPP), which is a labor-management-government cooperative program designed to

recognize workplaces that manage outstanding health and safety management systems for protection of workers and go beyond minimal compliance with the Federal and Cal/OSHA Title 8 California Code of Regulations. SDG&E also participates in OSHA's Voluntary Protection Programs (VPP), which recognizes employers who have implemented effective safety and health management systems and maintain injury and illness rates below national Bureau of Labor Statistics averages for their respective industries.[27] In VPP, management, labor, and OSHA work cooperatively and proactively to prevent fatalities, injuries, and illnesses through a system focused on: hazard prevention and control; worksite analysis; training; and management commitment and worker involvement. To participate, employers must submit an application to OSHA and undergo a rigorous onsite evaluation by a team of safety and health professionals. VPP participants are re-evaluated every three to five years to remain in the programs.

I.   **Control 9 - Safe Driving Programs**

SDG&E's safe driving programs aim to increase a driver's safety awareness to prevent and minimize the risk of motor vehicle incidents. With senior management's commitment and employee involvement, SDG&E is driving a safety culture committed to safe driving. This commitment includes written policies and procedures, review of motor vehicle incidents, a department of motor vehicles license pull program to confirm that all employees driving on behalf of the Company or on Company property are properly licensed, safe driving training, and development of training materials available to reinforce safe driving principles.

Smith System® Defensive Driving Program: Smith System® was founded on the principle that most crashes are preventable if the right driving habits are learned, practiced, and applied consistently. Smith System® combines classroom and behind the wheel instruction as a way to increase an experienced driver's safety awareness and change poor driving habits. The Smith System® Five Keys to Space Cushion Driving are: (1) Aim High in Steering®--look farther ahead than other drivers, not just at the vehicle in front of you; (2) Get the Big Picture®-- see more around you than other drivers, look for hazards such as other motorists, pedestrians, and vehicle doors opening; (3) Keep Your Eyes Moving®--Be more aware than other drivers, don't stare and use your peripheral vision; (4) Leave Yourself an Out ®--be in a better position in traffic than other drivers, monitor the space cushion around your vehicle; and (5) Make Sure

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[27]   United States Department of Labor, *Voluntary Protection Programs*, *available at* https://www.osha.gov/vpp/.

They See You®--make yourself more visible than other drivers, make eye contact and use signals such as headlights, brake lights, horn, and hand signals. These principles reinforce safe driving techniques.

Close Quarter Maneuvering Drivers Training: This SDG&E course was customized from the Smith System Advanced Backing, Parking, and Close Quarters Maneuvering course. During this in-house training, advanced backing and close quarter maneuvering are learned/practiced during 30-minute classroom discussion and a 2.5-hour driving course using the vehicle driven for work. The driving course includes blind spot identification, and serpentine and diminishing cone courses. The blind spot identification exercise provides a hands-on view of the actual blind spots of the vehicle and perspective on just how many and how large the blind spots are. In the serpentine course, the driver weaves through the course going forward and learns how to use the vehicle's pivot points to safely maneuver without hitting cones. Once complete, the driver then backs the vehicle through the same course. The vanishing cone course provides an opportunity for the driver to get a better understanding of distance and perception when it comes to pulling forward or backing their vehicle. This training focuses on developing and/or improving skills and techniques to maneuver safely in challenging driving environments.

Circle of Safety Technique Training: In 1999, SDG&E adopted the Circle of Safety, which is the practice of walking around to check side, front, back, and above clearances and hazards to confirm that the area around the vehicle is safe before departing. When backing into a parking space or work area, the training guides employees to look for obstacles such as poles, other vehicles or concrete pillars. Whenever possible, employees are directed to back into a parking space or driveway to increase visibility when departing. If employees must stop or park the vehicle in a position that requires backing-up upon departing, the vehicle should be positioned to maximize visibility to the rear and critical areas adjacent to the vehicle.

Motor Vehicle Incident (MVI) Reviews and Reporting: Employees involved in a motor vehicle incident while at work and/or while driving on Company business are required to report the incident. These incidents are investigated and reviewed to identify the root cause and corrective actions and share lessons learned to prevent similar incidents.

National Safety Council Defensive Driving Training Modules: Employees can access online driving training modules on specific topics such as backing, close quarter maneuvering, and other driving topics to educate themselves on driving best practices.

DMV Driver License Employer Pull Notice Program: SDG&E participates in the California Department of Motor Vehicle (DMV) Driver's License Employer Pull Notice (EPN) program.[28] The EPN program allows SDG&E to electronically receive employees' driving records to monitor drivers' license records of employees who drive on behalf of our organization. The monitoring allows SDG&E to determine whether Company drivers have a valid drivers' license, and reveal employee driving records and certain driving behavior. The EPN automatically generates a driver record when there is a conviction, failure to appear, accident, drivers' license suspension or revocation, or any other actions taken against an employee's driving privilege.

Commercial Drivers' License Program: For employees required to hold a Commercial Driver's License (CDL), SDG&E receives reminders with driver license and Medical Examiner's Certificate (MER) expirations to confirm commercial drivers have the proper certificates and certifications. Driving a Commercial Motor Vehicle (CMV) in California requires a higher level of knowledge, experience, and skill than that required to drive a non-commercial vehicle. An applicant must pass both skills and knowledge testing geared to these higher standards to obtain a CDL.[29] Additionally, CDL holders are held to a higher standard when operating any type of motor vehicle on public roads.[30] Serious traffic violations committed by a CDL holder can affect their ability to maintain their CDL certification.[31] CDL holders are also required to obtain and maintain a valid medical examiner's certificate to validate that the CDL holder meets the physical qualification requirements to safely drive a CMV.[32]

SDG&E Safe Driving Videos: A library of on-line safety video resources are available for employees and supervisor to access at any time to use for safety training, safety moments, and briefings.

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[28] *See* Employer Pull Notice Program Requirements, available at https://www.dmv.ca.gov/portal/file/employer-pull-notice-program-requirements-inf-1107-pdf/.

[29] *See* California Commercial Driver Handbook at 1-10 – 1-11, available at *https://www.dmv.ca.gov/portal/file/california-commercial-driver-handbook-pdf/*.

[30] *See, e.g., id.* at 1-14, Section 1.3.1. (stating that it's illegal to operate a CMV if your blood alcohol level is .04 percent or more, which is lower than the legal blood alcohol level for non-CMVs).

[31] *Id.* at Section 1.3.3.

[32] *Id.* at Section 1.2.

- "Active Passenger" was created to set expectations for the driver and passenger to assist each other to remain distraction free, share the Smith System® Five Keys to Space Cushion Driving, offer other insights and/or be a second set of eyes for driver awareness. Active Passenger is also designed to help new drivers who are not as experienced in driving large trucks.

- New Employee Orientation Safe Driving Education and Video – New employees attend general safety presentations as part of their new employee orientation, including driving safety and expectations while driving on company business and at company work locations.

J.   Control 10 - Personal Protective Equipment (PPE)

The purpose of SDG&E's PPE program is to protect employees from the risk of injury by creating a barrier against workplace hazards. PPE includes clothing and equipment designed to protect employees while performing their job (*e.g.*, flame resistant clothing, gloves, protective eyewear). All employees who are required to use PPE are trained on when PPE is necessary, which PPE is necessary, how to properly don/remove/adjust/wear PPE, limitations of PPE and the proper care/maintenance/life/disposal of PPE.

K.   Control 11 - Jobsite Safety Programs

SDG&E has in place a range of safety programs designed to identify, address, mitigate, and communicate workplace risks and hazards, and to contribute proactively to overall workplace safety and employee awareness of safety issues and concerns. These programs include:

Facilities Maintenance Program: Facilities capital projects are designed to make workspaces safer. Facilities maintenance programs are preventative, predictive, and corrective. Some examples include structural changes, asbestos inspection and abatement, and parking lot safety amenities.

Traffic control for employee, contractor and public safety at worksites: SDG&E, when performing work on, or adjacent to, a roadway, is responsible for installing and maintaining such devices which are necessary to provide safe passage for the public traveling through the work area and for the safety of the workers on the site. SDG&E uses both internal and external resources to fulfill this responsibility.

Work Methods and Standards: Business functions related to developing and maintaining construction standards, standards practices, and system design for electric service, primary and secondary systems.

L.   Control 12 - Utilizing OSHA and Industry Best Practices and Industry Benchmarking

SDG&E collaborates with high-performers in environmental, health and safety across industry sectors and regions of the world through the National Safety Council Campbell Institute, and benchmarking with other utilities, industries, and leaders in safety performance. SDG&E benefits from building relationships with other safety leaders, accessing best practices on employee and contractor safety, and benchmarking on leading indicators and key safety program elements.

SDG&E participates in safety benchmarking forums to compare the Company's health and safety processes, assess performance against other participants to learn how to reduce incidents, improve compliance, and discuss best management practices to improve the Company's safety health. SDG&E's end goal is to send every employee home safely every day by targeting zero safety incidents. Some of the key organization we benchmark with are the Edison Electrical Institute, American Gas Association, Campbell Institute, and the Bureau of Labor Statistics.

Additionally, SDG&E attends the California Investor-Owned Utility and Municipality bi-annual meeting to discuss employee and contractor safety. This dedicated forum is a utility benchmarking initiative which addresses new regulations, legislation, best management practices and other safety topics of interest.

M.   Control 13 - Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional; Certified Safety Professional

Mandatory employee training courses are those required by OSHA regulation or Company policy. Non-mandatory training courses are those not required by regulation or Company policy, but which shall be provided to employees to enhance a job skill or increase their abilities to perform their jobs safely.

Certifications, including Certified Safety Specialist, Certified Utility Safety Professional, 10- and 30-hour OSHA training, and Incident Command System training demonstrate that SDG&E's safety advisors have undertaken education requiring knowledge testing and

specialized exams. Safety Advisors will also receive continuing education on the latest standards, regulations, best practices, and laws regarding safety and health in the workplace. Finally, 10-hour OSHA training is provided to executive and leadership teams to further their safety education and create an environment to support a positive safety culture.

The Safety Services management team expanded its role in activations during red flag warning and other emergency conditions by staffing the Safety Officer position in the Emergency Operations Center (EOC), deploying field safety officers to the impacted workgroup staging areas, and regularly communicating safety messages through safety bulletins and on-site district safety support.

In addition, Safety Advisors are required to have specific education, training, and certification including, but not limited to: Certified Occupational Safety Specialist or OSHA Institute certification, progression toward Certified Utility Safety Professional, OSHA 10- and 30-hour training along with continuing internal training related to incident investigation, responding to and reporting injuries/illnesses, substance abuse prevention, identification of reasonable suspicion and others.

All Safety Services management team and Safety Advisors are Federal Emergency Management agency (FEMA) ICS 100, 200 and 775 certified.

N.   Control 14 - Enhanced Safety in Action Program

Designed for executives and field operations directors, the enhanced Safety in Action (SIA) initiative provides SDG&E with the necessary tools to measure Serious Injury and Fatality (SIF) exposure, understand the Company's specific SIF precursors, and design effective steps to mitigate SIF exposure. The SIF assessment was completed in 2020 and we received executive approval to move forward with implementing the SIF program. The 2020 SIF assessment project consisted of defining a SIF definition for SDG&E, developed a SIF decision tree, determined SIF metrics (leading and lagging), and incorporated a precursor analysis tool to reduce SIF exposure. A SIF Governance has been developed with clear objectives for the SIF program that demonstrates a forward-moving effort to improve safety.

O.   Control 15 - Enhanced Employee Safe Driving Training (Vehicle Technology Programs)

SDG&E has installed vehicle technology in our company fleet. The technology allows SDG&E to develop safety metrics to provide a comprehensive view of the vehicle driver and

fleet performance through data driven vehicle analytics. The vehicle technology platform allows the company to evaluate driving behaviors by understanding hard braking, hard acceleration, hard cornering, speeding, and seatbelt use. This data will enable SDG&E to provide coaching and specific driver training to employees to reinforce safe driving habits. Additionally, by installing monitoring devices, vehicle information such as utilization, idle time, fuel usage, vehicle health, and vehicle location would be communicated through a dashboard and can be analyzed in real time. This technology will help improve employee safety by providing information on vehicle location, providing opportunity for driver feedback, discouraging risky driving behaviors, and detecting engine issues and fault codes so they can be corrected.

P.   Control 16 - Energized Skills Training and Testing Yard

As a leader in reliability, wildfire mitigation and safety, SDG&E seeks continuous improvement to its system through new technology, new equipment and employee training. With employee safety standards and equipment continually evolving, SDG&E must introduce, train all personnel and update all impacted employees on new standards, procedures and/or equipment. To improve with performing these actions, SDG&E has converted an existing facility to an Energized Skills Training and Testing Yard to allow for hands-on training for electric crews, linemen foreman, electric operators, engineers, and/or trouble-shooters, improving their knowledge of the equipment and intricacies under a controlled environment. This converted facility provides a space for vendors and the engineering department to demonstrate new equipment and show how the equipment safely operates when energized, to assist with developing training videos and standards with improved visuals, and to improve upon the safe operation of equipment without customers being impacted. SDG&E believes that employees benefit from having this hands-on training and testing yard in lieu of a classroom setting, therefore resulting in safer operation of such equipment.

Q.   Control 17 - Employee Wildfire Smoke Protection – Cal/OSHA emergency regulation

In July 2019, an emergency regulation was passed by the California Occupational Safety and Health Standards Board requiring employers to provide respirators to workers exposed to

unhealthy air because of wildfire smoke.[33] California employers were already required to protect workers from hazards like unhealthy air, as demonstrated above in Control 10 (Personal Protective Equipment), but the new requirement seeks to shore up requirements specifically addressing fine particulate matter from wildfires, which can reduce lung function and worsen heart and respiratory conditions. The rule requires employers to obtain the air quality index (AQI) for PM2.5, which is the smallest and most noxious particulate matter, from federal, state or local officials. If the measurement is higher than 151, eligible employers must notify and train employees and provide approved respirators, like N95 respirators. If the index is higher than 500, the use of the respirators is required.

IV.   2022-2024 CONTROL & MITIGATION PLAN

This section contains a table identifying the controls and mitigations comprising the portfolio of mitigations for this risk.

Since each of SDG&E's IIE risk controls and mitigations have the same goal of reducing employee risk of injury or fatality, they have the same risk profile and are not further tranched.

Many of the activities discussed in Section III above are expected to continue during the TY 2024 GRC. For clarity, a current activity that is included in the control and mitigation plan may be referred to as either a control and/or a mitigation. For purposes of this RAMP, a control that will continue as a mitigation will retains its control ID unless the size and/or scope of that activity will be modified, in which case that activity's control ID will be replaced with a mitigation ID. The table below shows which activities are expected to continue.

Table 3: Control and Mitigation Plan Summary

Line No.	Control/ Mitigation ID	Control/Mitigation Description	2020 Controls	2022-2024 Plan
1	C1	Mandatory Employee Health and Safety Training Programs and Standardized Policies	X	X
2	C2	Drug and Alcohol Testing Program	X	X
3	C3	Strong Safety Culture	X	X

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[33]   *See https://www.dir.ca.gov/oshsb/Protection-from-Wildfire-Smoke-Emergency.html for emergency rulemaking documents.* The emergency regulation was adopted, effective February 1, 2021, at Title 8 CCR Section 5141.1 ("Protection from Wildfire Smoke").

Line No.	Control/ Mitigation ID	Control/Mitigation Description	2020 Controls	2022-2024 Plan
4	C4	Employee Behavioral Accident Prevention Process Program	X	X
5	C5	A Comprehensive Environmental & Safety Compliance Management Program	X	X
6	C6	Employee Safety Communications and Awareness Programs	X	X
7	C7	Employee Wellness Programs	X	X
8	C8	OSHA Voluntary Protection Program	X	X
9	C9	Safe Driving Programs	X	X
10	C10	Personal Protective Equipment	X	X
11	C11	Jobsite Safety Programs	X	X
12	C12	Utilizing OSHA and Industry Best Practices and Industry Benchmarking	X	X
13	C13	Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional; Certified Safety Professional	X	X
14	C14	Enhanced Safety in Action Program	X	X
15	C15	Enhanced Employee Safe Driving Training	X	X
16	C16	Energized Skills Training and Testing Yard	X	No
17	C17	Employee Wildfire Smoke Protection – Cal/OSHA emergency regulation	X	X
18	M1	Purchasing and testing more protective respiratory protection for wildfire smoke particulates\.	No	X
19	M2	Purchasing break/rest trailers with filtered air systems to reduce wildfire smoke exposure	No	X
20	M3	Automate notifications and employee communications when the Air Quality Index PM2.5 reaches specific thresholds during a wildfire in our service territory	No	X
21	M4	Instructional designer support to update & convert safety training curriculum to web based	No	X

For activities SDG&E plans to perform that remain unchanged, please refer to the description in Section III. If changes to the various activities are anticipated, such modifications are further described in this section below.

A.   Changes to 2020 Controls

The controls described above in Section III are ongoing safety programs and are planned for continuation through the 2024 GRC Test Year. As part of the Safety Management System continuous improvement framework, SDG&E tracks both leading and lagging indicators and continually reviews the effectiveness of its employee safety programs. Based on this review, employee safety programs may be changed, revised, or enhanced where necessary. In addition to, and beyond the scope of this ongoing review and continuous improvement effort, SDG&E identifies enhancements to a few of its employee safety programs in the mitigations described below.

SDG&E's comprehensive employee safety program consists of training courses, policies, standards, programs and efforts all aimed to reduce risk of injury or fatality to employees while on duty. Given the vast number of activities SDG&E performs to mitigate IIE Risk, SDG&E grouped like activities with like risk profiles into mitigations programs. Since each of SDG&E's IIE Risk mitigations have the same goal of reducing employee risk of injury or fatality, all controls and mitigations have the same risk profile and are not further tranched.

B.   2022 – 2024 Mitigations

1.   Mitigation 1 - Purchasing and testing more protective respiratory protection for wildfire smoke particulates

More protective respiratory protection, such as Powered Air Purifying Respirators (PAPRs) are required if the Air Quality Index for PM2.5 concentration equivalent exceeds 550 ug/m3 during wildfire response work. Prior to purchasing, arc testing and electric shock testing of the PAPRs should be conducted.

The hardhat component of a PAPR is rated as Class G (tested up to 2200 Volts) and is not arc-rated. Electrical workers are required to wear Class E (tested up to 20,000 Volts) hard hats and arc-rated protective equipment. Procuring and testing more protective respiratory protection will mitigate wildfire smoke exposure improper use of personal protective equipment, and employees' impairment due to poor indoor air quality. If these drivers are not mitigated, serious illnesses or fatalities and penalties may be incurred for non-compliance.

2.   **Mitigation 2 - Purchasing break/rest trailers with filtered air systems to reduce wildfire smoke exposure**

Protective measures, such as taking breaks in a vehicle or building with filtered air should be provided to reduce wildfire smoke exposures. 82% of our vehicles do not have cabin air filters and for most vehicles, modifications are not possible. Providing break/rest trailers with filtered air will provide relief for field employees engaged in wildfire response work.

Crews may be engaged in wildfire restoration work where there is a potential for wildfire smoke exposure for extended periods of time. Providing filtered air rest or break trailers will mitigate wildfire smoke exposure, employee fatigue or complacency, and employees' impairment due to poor indoor air quality. If these drivers are not mitigated, serious illnesses or fatalities may result.

3.   **Mitigation 3 - Automate notifications and employee communications when the Air Quality Index PM2.5 reaches specific thresholds during a wildfire in our service territory**

Currently, the process to notify employees when the PM2.5 Air Quality Index values exceed 150 and 500 during wildfires is manual where a Safety team member monitors the AQI and sends emailed instructions for elevated levels. An automatic notification system would mitigate deviation from policies or procedures, exposure to wildfire smoke, not using appropriate personal protective equipment, employee fatigue or complacency, employees' impairment due to poor air quality, and lack of oversight of work. If these drivers are not mitigated, serious illnesses or fatalities and penalties may be incurred for non-compliance.

4.   **Mitigation 4 - Instructional designer support to update & convert safety training curriculum to web based**

Safety has a list of 25 prioritized safety trainings which need to be updated/converted to web-based. Instructional designers will convert non-web-based safety training to web-based training. Modernized training will be customized to focus on the specific needs of each user group. E-learning capability will increase training efficiency by allowing timely instruction for new hires transfers, and any others on a non-standard training timeline.

V. COSTS, UNITS, AND QUANTITATIVE SUMMARY TABLES

The tables in this section provide a summary of the risk control and mitigation plan, including the associated costs, units, and the RSEs, by tranche. When an RSE could not be performed, an explanation is provided. SDG&E does not account for and track costs by activity or tranche; rather, SDG&E accounts for and tracks costs by cost center and capital budget code. The costs shown were estimated using assumptions provided by SMEs and available accounting data.

Table 4: Risk Control and Mitigation Plan - Recorded and Forecast Dollars Summary[34]
(Direct After Allocations, In 2020 $000)

ID	Control/Mitigation Name	Recorded Dollars		Forecast Dollars			
		2020 Capital[35]	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
C1	Mandatory Employee Health and Safety Training Programs and Standardized Policies	0	817	0	0	776	940
C2	Drug and Alcohol Testing Program	0	200	0	0	171	208
C3	Strong Safety Culture	0	116	0	0	223	270
C4	Employee Behavioral Accident Prevention Process Program	0	777	0	0	818	990
C5	A Comprehensive Environmental & Safety Compliance Management Program	There are no recorded or forecasted dollars for this control because all costs are incremental and included in various other cost centers.					

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[34] Recorded costs and forecast ranges are rounded to the nearest thousands. Additional cost-related information is provided in workpapers. 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 dollar and have not been escalated to 2021 amounts. The capital presented is the sum of the years 2022, 2023, and 2024, or a three-year total. Years 2022, 2023 and 2024 are the forecast years for SDG&E's Test Year 2024 GRC Application.

[35] Pursuant to D.14-12-025 and D.16-08-018, the Company provides the 2020 "baseline" capital costs associated with Controls. The 2020 capital amounts are for illustrative purposes only. Because capital programs generally span several years, considering only one year of capital may not represent the entire activity.

ID	Control/Mitigation Name	Recorded Dollars		Forecast Dollars			
		2020 Capital[35]	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
C6	Employee Safety Communications and Awareness Programs	There are no recorded or forecasted dollars for this control because all costs are incremental and included in various other cost centers.					
C7	Employee Wellness Programs	0	769	0	0	733	888
C8	OSHA Voluntary Protection Program	0	219	0	0	475	575
C9	Safe Driving Programs	0	94	0	0	89	108
C10	Personal Protective Equipment	0	1,778	0	0	1,689	2,045
C11	Jobsite Safety Programs	352	2,750	654	791	2,108	2,551
C12	Utilizing OSHA and Industry Best Practices and Industry Benchmarking	0	703	0	0	668	808
C13	Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional; Certified Safety Professional	0	11	0	0	14	17
C14	Enhanced Safety in Action Program	0	133	0	0	0	0
C15	Enhanced Employee Safe Driving Training	345	0	0	0	523	633
C17	Employee Wildfire Smoke Protection – Cal/OSHA emergency regulation	0	17	0	0	16	20
M1	Purchasing and testing more protective respiratory protection for wildfire smoke particulates.	0	0*	0	0	2	2
M2	Purchasing break/rest trailers with filtered air systems to reduce wildfire smoke exposure	0	0	0	0	143	173
M3	Automate notifications and employee communications when the Air Quality Index PM2.5 reaches specific thresholds during a wildfire in our service territory	0	0	0	0	38	46

ID	Control/Mitigation Name	Recorded Dollars		Forecast Dollars			
		2020 Capital[35]	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
M4	Instructional designer support to update & convert safety training curriculum to web based	0	0*	0	0	22	31

*Minimal preliminary costs incurred at the end of 2020.

Table 5: Risk Control & Mitigation Plan - Units Summary

ID	Control/Mitigation Name	Units Description		Recorded Units		Forecast Units			
		Capital	O&M	2020 Capital	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 (Low) O&M	TY 2024 (High) O&M
C1	Mandatory Employee Health and Safety Training Programs and Standardized Policies	Employees		0	4400	0	0	4400	4800
C2	Drug and Alcohol Testing Program	Employees		0	1704	0	0	1704	1960
C3	Strong Safety Culture	Surveys and conferences cost		0	116	0	0	223	270
C4	Employee Behavioral Accident Prevention Process Program	Employees		0	100	0	0	100	115
C5	A Comprehensive Environmental & Safety Compliance Management Program	Employees		There are no recorded or forecasted units for this control because all units are incremental and included in various other cost centers.					
C6	Employee Safety Communications and Awareness Programs	Employees		There are no recorded or forecasted units for this control because all units are incremental and included in various other cost centers.					
C7	Employee Wellness Programs	Employees		0	4400	0	0	4400	4800
C8	OSHA Voluntary Protection Program	VPP Locations		0	3	0	0	3	5
C9	Safe Driving Programs	Employees		0	2200	0	0	2200	2400
C10	Personal Protective Equipment	Employees		0	4400	0	0	4400	4800
C11	Jobsite Safety Programs	Employees		245	1985	735	845	1985	2282
C12	Utilizing OSHA and Industry Best Practices and Industry Benchmarking	EEI & other membership fees		0	703	0	0	703	808
C13	Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional; Certified Safety Professional	Employees		0	30	0	0	30	34
C14	Enhanced Safety in Action Program	Professional services cost		0	133	0	0	0	0

ID	Control/Mitigation Name	Units Description		Recorded Units		Forecast Units			
		Capital	O&M	2020 Capital	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 (Low) O&M	TY 2024 (High) O&M
C15	Enhanced Employee Safe Driving Training	Employees		1650	0	0	0	1650	1800
C17	Employee Wildfire Smoke Protection – Cal/OSHA emergency regulation	Employees requiring medical evaluations		0	650	0	0	650	747
M1	Purchasing and testing more protective respiratory protection for wildfire smoke particulates.	Replacement filters		0	0	0	0	40	46
M2	Purchasing break/rest trailers with filtered air systems to reduce wildfire smoke exposure	Staging area trailers		0	0	0	0	10	15
M3	Automate notifications and employee communications when the Air Quality Index PM2.5 reaches specific thresholds during a wildfire in our service territory	Internal FTE		0	0	0	0	0.2	0.3
M4	Instructional designer support to update & convert safety training curriculum to web based	Internal FTE		0	0	0	0	0.2	0.3

Table 6: Risk Control & Mitigation Plan - Quantitative Analysis Summary
(Direct After Allocations, In 2020 $000)

ID	Control/Mitigation Name	Forecast			
		LoRE	CoRE	Risk Score	RSE
C1	Mandatory Employee Health and Safety Training Programs and Standardized Policies	See Table 7			
C2	Drug and Alcohol Testing Program	See Table 7			
C3	Strong Safety Culture	0.87	1275	1110	78
C4	Employee Behavioral Accident Prevention Process Program	0.86	1275	1094	12
C5	A Comprehensive Environmental & Safety Compliance Management Program	See Table 7			
C6	Employee Safety Communications and Awareness Programs	See Table 7			
C7	Employee Wellness Programs	See Table 7			
C8	OSHA Voluntary Protection Program	0.85	1275	1085	14
C9	Safe Driving Programs	0.85	1275	1078	57
C10	Personal Protective Equipment	See Table 7			
C11	Jobsite Safety Programs	0.89	1275	1132	9
C12	Utilizing OSHA and Industry Best Practices and Industry Benchmarking	See Table 7			
C13	Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional; Certified Safety Professional	0.84	1275	1069	138
C14	Enhanced Safety in Action Program	0.80	1275	1015	299
C15	Enhanced Employee Safe Driving Training	0.81	1275	1030	19
C17	Employee Wildfire Smoke Protection – Cal/OSHA emergency regulation	See Table 7			
M1	Purchasing and testing more protective respiratory protection for wildfire smoke particulates.	0.83	1275	1059	516
M2	Purchasing break/rest trailers with filtered air systems to reduce wildfire smoke exposure	0.83	1275	1059	7
M3	Automate notifications and employee communications when the Air Quality Index PM2.5 reaches specific thresholds during a wildfire in our service territory	0.83	1275	1059	26
M4	Instructional designer support to update & convert safety training curriculum to web based	See Table 7			

Table 7: Risk Control & Mitigation Plan - Quantitative Analysis Summary for RSE Exclusions

ID	Control/Mitigation Name	RSE Exclusion Rationale
C1	Mandatory Employee Health and Safety Training Programs and Standardized Policies	Mandatory Employee Health and Safety Training Programs and Standardized Policies are a foundational aspect of how SDG&E creates a safe and healthy workplace environment for its employees. This is a mandated program and SDG&E has not performed an RSE analysis because it is not feasible for SDG&E to stop performing this activity nor is it possible to calculate the risk reduction benefits received from performing this activity. SDG&E is unaware of any data that can be used to calculate how risks would increase if these activities are not undertaken. Additionally, no SME could establish a quantifiable value for the effectiveness of this control activity.
C2	Drug and Alcohol Testing Program	SDG&E performs these activities in accordance with DOT regulations. This is a mandated program and SDG&E has not performed an RSE analysis because it is not feasible for SDG&E to stop performing this activity nor is it possible to calculate the risk reduction benefits received from performing this activity. SDG&E is unaware of any data that can be used to calculate how risks would increase if these activities are not undertaken. Additionally, no SME could establish a quantifiable value for the effectiveness of this control activity.
C5	A Comprehensive Environmental & Safety Compliance Management Program	A Comprehensive Environmental & Safety Compliance Management Program is a foundational aspect of how SDG&E creates a safe and healthy workplace environment for its employees. SDG&E is unaware of any internal or external data that directly relates this activity to the reduction in IIE Risk events. Additionally, no SME could establish a quantifiable value for the effectiveness of this control activity.
C6	Employee Safety Communications and Awareness Programs	Employee Safety Communications and Awareness Programs is a foundational aspect of how SDG&E creates a safe and healthy workplace environment for its employees. SDG&E is unaware of any internal or external data that directly relates this activity to the reduction in incident rates or the

ID	Control/Mitigation Name	RSE Exclusion Rationale
		consequences thereof. Additionally, no SME could establish a quantifiable value for the effectiveness of this control activity.
C7	Employee Wellness Programs	Employee Wellness Programs are a foundational aspect of how SDG&E creates a safe and healthy workplace environment for its employees. SDG&E is unaware of any internal or external data that directly relates this activity to the reduction in incident rates or the consequences thereof. Additionally, no SME could establish a quantifiable value for the effectiveness of this control activity.
C10	Personal Protective Equipment	The procurement and usage of Personal Protection Equipment (PPE) is a fundamental aspect of how SDG&E conducts operations and maintains the safety of its employees. This is a mandated program and SDG&E has not performed an RSE analysis because it is not feasible for SDG&E to stop performing this activity nor is it possible to calculate the risk reduction benefits received from performing this activity. SDG&E is unaware of any data that can be used to calculate how risks would increase if these activities are not undertaken.
C12	Utilizing OSHA and Industry Best Practices and Industry Benchmarking	Utilizing OSHA and Industry Best Practices and Industry Benchmarking is a fundamental aspect of how SDG&E conducts operations and maintains the safety of its employees. SDG&E is unaware of any internal or external data that directly relates this activity to the reduction in incident rates or the consequences thereof. Additionally, no SME could establish a quantifiable value for the effectiveness of the control activity.
C17	Employee Wildfire Smoke Protection – Cal/OSHA emergency regulation	The procurement and usage of Wildfire Smoke Protection is a fundamental aspect of how SDG&E conducts operations and maintains the safety of its employees. SDG&E is unaware of any internal or external data that directly relates this activity to the reduction in incident rates or the consequences thereof. Additionally, no SME could establish a quantifiable value for the effectiveness of the control activity.
M4	Instructional designer support to update & convert safety training curriculum to web based	Instructional designer support to update & convert safety training curriculum to web based is a foundational activity that supports safety training.

ID	Control/Mitigation Name	RSE Exclusion Rationale
		SDG&E is unaware of any internal or external data that directly relates this activity to the reduction in incident rates or the consequences thereof. Additionally, no SME could establish a quantifiable value for the effectiveness of the control activity.

VI.   ALTERNATIVES

Pursuant to D.14-12-025 and D.16-08-018, SDG&E considered alternatives to the risk control and mitigation plan outline above for the IIE Risk. Typically, analysis of alternatives occurs when implementing activities to obtain the best result or product for the cost. The alternatives analysis for this risk control and mitigation plan also took into account modifications to the plan and constraints, such as budget and resources.

A.   Alternative 1: Piloted Alert Driving

Piloted Alert Driving is an online driver training program meant to proactively improve driver behavior. High-Definition video is shot on-location to show real and familiar traffic hazards that employees must identify. Given the high cost for training and the similarity to other driving training modules available from our membership with National Safety Council (NSC) as well as in-house training, SDG&E is not planning to include Piloted Alert Driving in its mitigation plan.

B.   Alternative 2: Modernizing Safety Video Library

Historically, SDG&E has offered a library of safety videos which users may check-out to enhance safety meetings. Most of these videos are in VHS format and need to be updated. Developing or procuring effective safety videos in a modern streaming platform (or similar) would provide an alternative method of communicating hazards and controls to our employees. SDG&E is currently focusing on updating and converting our safety training curriculum to web-based training instead of modernizing our safety video library.

Table 8: Alternative Mitigation Plan - Forecast Dollars Summary[36]
(Direct After Allocations, In 2020 $000)

ID	Alternative Mitigation Name	Forecast Dollars			
		2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
A1	Piloted Alert Driving	N/A	N/A	100	120
A2	Modernizing Safety Video Library	N/A	N/A	50	100

Table 9: Alternative Mitigation Plan - Units Summary

ID	Alternative Mitigation Name	Units Description		Forecast Units			
		Capital	O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 (Low) O&M	TY 2024 (High) O&M
A1	Piloted Alert Driving		Employees	0	0	1650	1800
A2	Modernizing Safety Video Library		Contractor	0	0	0.5	1

Table 10: Alternative Mitigation Plan - Quantitative Analysis Summary
(Direct After Allocations, In 2020 $000)

ID	Alternative Mitigation Name	Forecast			
		LoRE	CoRE	Risk Score	RSE
A1	Piloted Alert Driving	See Table 11			
A2	Modernizing Safety Video Library	See Table 11			

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[36] Recorded costs and forecast ranges are rounded. Additional cost-related information is provided in workpapers. 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 dollar and have not been escalated to 2021 amounts. The capital presented is the sum of the years 2022, 2023, and 2024, or a three-year total. Years 2022, 2023 and 2024 are the forecast years for SDG&E's Test Year 2024 GRC Application.

Table 11: Alternate Mitigation Plan - Quantitative Analysis Summary for RSE Exclusions

ID	Control/Mitigation Name	RSE Exclusion Rationale
A1	Pilot Alert Driving	Alert Driving training modules are meant to supplement current driving safety training. No data exists either internally or externally that directly relates this activity to the reduction in incident rates or the consequences thereof. Additionally, no SME could establish a quantifiable value for the effectiveness of the activity.
A2	Modernizing Safety Video Library	Modernizing the safety video library is a foundational activity that supports safety training. No data exists either internally or externally that directly relates this activity to the reduction in incident rates or the consequences thereof. Additionally, no SME could establish a quantifiable value for the effectiveness of the activity.

APPENDIX A: SUMMARY OF ELEMENTS OF THE RISK BOW TIE

Appendix A: Summary of Elements of the Risk Bow Tie

Incident Involving an Employee: Summary of Elements of the Risk Bow Tie

ID	Control/Mitigation Name	Elements of the Risk Bow Tie Addressed
C1	Mandatory Employee Health and Safety Training Programs and Standardized Policies	DT.1; DT.2; DT.3; DT.4; DT.8; PC.1; PC.2; PC.4
C2	Drug and Alcohol Testing Program	DT.1; DT.4; DT.9; PC.1; PC.2; PC.3; PC.4; PC.5; PC.6
C3	Strong Safety Culture	DT.1; DT2; DT.3; DT.4; DT5; DT6; DT7; DT.8; DT.9; DT.10; DT.11; DT.12; PC.1; PC.2; PC.3; PC.4; PC.5; PC.6
C4	Employee Behavioral Accident Prevention Process Program	DT.1; DT.2; DT.3; DT.4; DT.5; DT.6; DT.7; DT.8; DT.9; DT.10; PC.1; PC.2; PC.3; PC.6
C5	A Comprehensive Environmental & Safety Compliance Management Program	DT.1; DT.2; DT.3; DT.4; DT.5; DT.8; DT.10; PC.1; PC.2; PC.3; PC.4; PC.5; PC.6
C6	Employee Safety Communications and Awareness Programs	DT.1; DT.2; DT.3; DT.4; DT.5; DT.6; DT.7; DT.8; DT.9; DT.10; DT.11; DT.12; PC.1; PC.2; PC.3; PC.4; PC.5; PC.6
C7	Employee Wellness Programs	DT.6; DT.7; PC.1
C8	OSHA Voluntary Protection Program	DT.1; DT.2; DT.3; DT.4; DT.5; DT.6; DT.7; DT.8; DT.9; DT.10; DT.12; PC.1; PC.2; PC.3
C9	Safe Driving Programs	DT.1; DT.2; DT.4; DT.8; DT.10; PC.1; PC.2; PC.4; PC.5; PC.6
C10	Personal Protective Equipment	DT.1; DT.2; DT.3; PC.1; PC.4; PC.5
C11	Jobsite Safety Programs	DT.1; DT.2; DT.4; DT.5; DT.8; DT.9; DT.11; DT.12; PC.1; PC.2; PC.3
C12	Utilizing OSHA and Industry Best Practices and Industry Benchmarking	DT.1; DT.2; DT.3; DT.4; DT.5; DT.8; PC.1
C13	Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional; Certified Safety Professional	DT.1; DT.2; DT.3; DT.4; DT.5; DT.8; DT.9; DT.10; DT.12; PC.1; PC.3

ID	Control/Mitigation Name	Elements of the Risk Bow Tie Addressed
C14	Enhanced Safety in Action Program	DT.1; DT.2; DT.3; DT.4; DT.5; DT.6; DT.7; DT.8; DT.9; DT.10; DT.11; DT.12; PC.1
C15	Enhanced Employee Safe Driving Training	DT.1; DT.2; DT.4; DT.6; DT.8; PC.1; PC.2; PC.5; PC.6
C16	Energized Skills Training and Testing Yard	DT.1; DT.2; DT.3; DT.4; DT.5; DT.8; DT.9; DT.10; PC.1; PC.2
C17	Employee Wildfire Smoke Protection – Cal/OSHA emergency regulation	DT.2; DT.3; DT.7; PC.1; PC.4
M1	Purchasing and testing more protective respiratory protection for wildfire smoke particulates\.	DT.2, DT.3, DT.7; PC.1; PC.4
M2	Purchasing break/rest trailers with filtered air systems to reduce wildfire smoke exposure	DT.2; DT.6; DT.7; PC.1
M3	Automate notifications and employee communications when the Air Quality Index PM2.5 reaches specific thresholds during a wildfire in our service territory	DT.1; DT.2; DT.3; DT.6; DT.7; DT.9; PC.1; PC.4
M4	Instructional designer support to update & convert safety training curriculum to web based	DT.1; DT.2; DT.3; DT.4; DT.6; DT.8; DT.10; PC.1; PC.2; PC.3; PC.4

APPENDIX B: QUANTITATIVE ANALYSIS SOURCE DATA REFERENCES

APPENDIX B: QUANTITATIVE ANALYSIS SOURCE DATA REFERENCES

The SA Decision directs the utility to identify potential consequences of a risk event using available and appropriate data. The below provides a listing of the inputs utilized as part of this assessment.

San Diego Gas & Electric Annual Serious Injuries and Fatalities (SIFs)
- 2015 –2020 internal SIF data