



**Risk Assessment Mitigation Phase  
(Chapter SDG&E-3)  
Employee Safety**

**November 27, 2019**

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## Risk: Employee Safety

### I. INTRODUCTION

The purpose of this chapter is to present the Risk Mitigation Plan for San Diego Gas & Electric's (SDG&E or Company) Employee Safety 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 SA Decision).<sup>1</sup>

SDG&E has identified and defined RAMP risks in accordance with the process described in further detail in Chapter RAMP-B of this report. On an annual basis, SDG&E's Enterprise Risk Management (ERM) organization facilitates the Enterprise Risk Registry (ERR) process, which influenced how risks were selected for inclusion in the 2019 RAMP Report, consistent with the SA Decision's directives.

The purpose of RAMP is not to request funding. Any funding requests will be made in SDG&E's General Rate Case (GRC). The costs presented in this 2019 RAMP Report are those costs for which SDG&E anticipates requesting recovery in its Test Year (TY) 2022 GRC. SDG&E's TY 2022 GRC presentation will integrate developed and updated funding requests from this 2019 RAMP Report, supported by witness testimony.<sup>2</sup> For this 2019 RAMP Report, the baseline costs are the costs incurred in 2018, as further discussed in Chapter RAMP-A. This 2019 RAMP Report presents capital costs as a sum of the years 2020, 2021 and 2022 as a three-year total; whereas, O&M costs are only presented for TY 2022.

Costs for each activity that directly addresses each risk are provided where those costs are available and within the scope of the analysis required in this RAMP Report. Throughout this 2019 RAMP Report activities are delineated between controls and mitigations, consistent with the definitions adopted in the SA Decision's Revised Lexicon. A "Control" is defined as a currently established measure that is modifying risk. A "Mitigation" is defined as a measure or

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<sup>1</sup> D.16-08-018 also adopted the requirements previously set forth in D.14-12-025. D.18-12-014 adopted the Safety Model Assessment Proceeding (S-MAP) Settlement Agreement with modifications and contains the minimum required elements to be used by the utilities for risk and mitigation analysis in the RAMP and GRC.

<sup>2</sup> D.18-12-014 at Attachment A, A-14 ("Mitigation Strategy Presentation in the RAMP and GRC").

activity proposed or in process designed to reduce the impact/consequences and/or likelihood/probability of an event. Activities presented in this chapter are representative of those that are primarily scoped to address SDG&E's Employee Safety risk; however, many of the activities presented herein also help mitigate other risk areas as outlined in Chapter RAMP-A.

As discussed in Chapter RAMP-D, Risk Spend Efficiency (RSE) Methodology, no RSE calculation is provided where costs are not available or not presented in this RAMP Report (including costs for activities that are outside of the GRC and certain internal labor costs). Additionally, SDG&E did not perform RSE calculations on mandated activities. Mandated activities are defined as activities conducted in order to meet a mandate or law, such as a Code of Federal Regulation (CFR), Public Utilities Code statute, or General Order. Activities with no RSE score presented in this 2019 RAMP Report are identified in Section VII, below.

SDG&E has also included a qualitative narrative discussion of certain risk mitigation activities that would otherwise fall outside of the RAMP Report's requirements, to aid the Commission and stakeholders in developing a more complete understanding of the breadth and quality of SDG&E's mitigation activities. These distinctions are discussed in the applicable control/mitigation narratives in Section V. Similarly, a narrative discussion of certain "mitigation" activities and their associated costs is provided for certain activities and programs that may indirectly address the risk at issue, even though the scope of the risk as defined in the RAMP Report may technically exclude the mitigation activity from the RAMP analysis. This additional qualitative information is provided in the interest of full transparency and understandability, consistent with guidance from Commission Staff and stakeholder discussions.

#### **A. Risk Definition**

For purposes of this RAMP Report, SDG&E's Employee Safety risk is defined "as the risk of an employee safety incident that causes serious injuries<sup>3</sup> or fatalities while on duty."

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<sup>3</sup> 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 which requires inpatient hospitalization for a period in excess of 24 hours for other than medical observation or in which an employee suffers a loss of any member of the body or suffers any serious degree of permanent disfigurement, but does not include any injury or illness or death caused by the commission of a Penal Code violation, except the violation of Section 385 of the Penal Code, or an accident on a public street or highway." 8 California Code of Regulations (CCR) § 330(h).

## B. Summary of Elements of the Risk Bow Tie

Pursuant to the SA Decision,<sup>4</sup> for each control and mitigation presented herein, SDG&E has identified which element(s) of the Risk Bow Tie the mitigation addresses. Below is a summary of these elements.

**Table 1: Summary of Elements of the Risk Bow Tie**

ID	Description of Driver/Trigger and Potential Consequence
DT.1	Employees deviate from company policies or procedure
DT.2	Hazards in the work environment (e.g., work locations, roadways)
DT.3	Non or improper use of personal protective equipment
DT.4	Unsafe operation of equipment or motor vehicles
DT.5	Damage to SDG&E equipment and/or infrastructure
PC.1	Serious injuries <sup>5</sup> and/or fatalities
PC.2	Property damage
PC.3	Operational and reliability impacts
PC.4	Adverse litigation
PC.5	Penalties and fines
PC.6	Erosion of public confidence

## C. Summary of Risk Mitigation Plan

Pursuant to the SA Decision,<sup>6</sup> SDG&E has performed a detailed pre- and post-mitigation analysis of controls and mitigations for each risk selected for inclusion in RAMP, as further described below. SDG&E’s baseline controls for this risk consist of the following programs/activities:

**Table 2: Summary of Controls**

ID	Control Name
SDG&E-3-C1	Mandatory employee health and safety training programs and standardized policies
SDG&E-3-C2	Drug and alcohol testing program

<sup>4</sup> *Id.* at Attachment A, A-11 (“Bow Tie”).

<sup>5</sup> 8 CCR § 330(h).

<sup>6</sup> D.18-12-014 at Attachment A, A-11 (“Definition of Risk Events and Tranches”).



SDG&E-3-C3	Safety culture
SDG&E-3-C4	Employee Behavior Based Safety (BBS) program
SDG&E-3-C5	A comprehensive Environmental & Safety Compliance Management Program (ESCMP)
SDG&E-3-C6	Employee safety training and awareness programs
SDG&E-3-C7	Employee wellness programs
SDG&E-3-C8	OSHA Voluntary Protection Program (VPP) assessments
SDG&E-3-C9	Safe driving programs
SDG&E-3-C10	Personal protection equipment
SDG&E-3-C11	Jobsite Safety Programs including Near Miss and Stop the Job
SDG&E-3-C12	Utilizing OSHA and industry best practices and industry benchmarking

SDG&E will continue the baseline controls identified above and puts forth additional projects and/or programs (*i.e.*, Mitigations) as follows:

**Table 3: Summary of Mitigations**

ID	Mitigation Name
SDG&E-3-M1	Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional, Certified Safety Professional
SDG&E-3-M2	Safety in Action Program Enhancement
SDG&E-3-M3	Enhanced employee safe driving training (Vehicle Technology Programs)
SDG&E-3-M4	Implementing findings from VPP program assessments
SDG&E-3-M5	Energized Skills Training and Testing Yard
SDG&E-3-M6	Employee Wildfire Smoke Protections – Cal/OSHA emergency regulation

Finally, pursuant to the SA Decision,<sup>7</sup> SDG&E presents considered alternatives to the Risk Mitigation Plan for the Employee Safety risk and summarizes the reasons that the alternatives were not included in the Risk Mitigation Plan in Section VIII.

<sup>7</sup> *Id.* at 33.

## II. 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 other goals and no activity is so important that it should jeopardize employee or customer safety.

The Employee Safety risk was included in SDG&E's 2018 ERR and for purposes of this RAMP filing is defined as the risk of an employee safety incident that causes serious injuries or fatalities while on duty. This Employee Safety risk chapter focuses on mitigation activities that address safety, education, training, and other internal procedural enhancements.<sup>8</sup> SDG&E's Employee Safety risk mitigation programs are founded on proven employee-based programs, safety training, workforce education, and SDG&E's Illness & Injury Prevention Program (IIPP). Per Title 8 of the California Code of Regulations (CCR),<sup>9</sup> 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.

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<sup>8</sup> The Electric Infrastructure Integrity (EII) Chapter (SDG&E-4) of this RAMP Report covers the risk event of an employee coming into contact with energized equipment, because mitigations for this risk event are focused on infrastructure protections and improvements – even though the potential consequences of the risk event (causing serious employee injury or fatality) are similar to those of an Employee Safety risk event.

<sup>9</sup> State of California Department of Industrial Relations, *Cal/OSHA – Title 8 Regulations – Index* (May 16, 2018), available at <https://www.dir.ca.gov/title8Index/t8index.asp>.

SDG&E's strong safety culture and commitment to further developing processes and programs is designed to manage the Employee Safety, Contractor Safety, and Customer & Public Safety risks. As noted above, many of the Employee Safety mitigations identified herein also help mitigate these other risks. While the Employee Safety 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<sup>10</sup> can result in an incident where an employee is seriously injured, or a fatality is present. Following the SA Decision and our risk methodology, a potential risk scenario of the Employee Safety risk is an employee not following a company policy or procedure being severely injured and causing a disruption of service to a small number of customers.

SDG&E's safety performance measures have shown consistent improvement overall in recent years, with the exception of Controllable Motor Vehicle Incidents (CMVI). As of December 31, 2018, SDG&E's total CMVI stood at 42, compared with 2017's year-end CMVI totals of 38. SDG&E is accordingly undertaking an initiative to assess and address motor vehicle incidents, which has resulted in preliminary proposals to enhance our safe driving program (*see*, SDG&E-3-M3, as further described below). As a part of these efforts, SDG&E has recently reviewed its Smith training system as well as our vehicles and safety equipment and technologies. In 2018, SDG&E achieved its lowest DART (Days Away / Restricted / Transfer) rate on record, which reflects a reduction of 11% from 2016. In addition, SDG&E's safety field visits/observations have increased and surpassed our 2018 goal.

### III. RISK ASSESSMENT

In accordance with the SA Decision,<sup>11</sup> this section describes the risk Bow Tie, possible Drivers, and potential consequences of the Employee Safety risk.

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<sup>10</sup> *See*, SDG&E-4, Electric Infrastructure Integrity; SDG&E-6, Medium Pressure Gas Pipeline Incident; SDG&E-7, Third Party Dig-in on Medium Pressure Pipeline; SDG&E-8, High Pressure Gas Pipeline Incident; and SDG&E-9, Third Party Dig-in on High Pressure Pipeline.

<sup>11</sup> D.18-12-014 at 33 and Attachment A, A-11 ("Bow Tie").

### A. Risk Bow-Tie

The risk Bow Tie shown in Figure 1, below, is a commonly-used tool for risk analysis. The left side of the Bow Tie illustrates drivers/triggers that lead to a risk event and the right side shows the potential consequences of a risk event. SDG&E applied this framework to identify and summarize the information provided above. A mapping of each Control/Mitigation to the element(s) of the Risk Bow Tie addressed is provided in Appendix A.

**Figure 1: Risk Bow Tie**



### B. Asset Groups of Systems Subject to the Risk

The SA Decision<sup>12</sup> directs the utilities to endeavor to identify all asset groups or systems subject to the risk. This is a “cross-cutting” risk and therefore is associated with human systems, rather than particular asset groups.

### C. Risk Event Associated with the Risk

The SA Decision<sup>13</sup> instructs the utility to include a Risk Bow Tie illustration for each risk included in RAMP. As illustrated in the above Risk Bow Tie, the risk event (center of the Bow Tie) is an employee safety event that results in any of the Potential Consequences listed on the

<sup>12</sup> *Id.* at Attachment A, A-11 (“Definition of Risk Events and Tranches”).

<sup>13</sup> *Id.* at Attachment A, A-11 (“Bow Tie”).

right. The Drivers/Triggers that may contribute to this risk event are further described in the section below. The Risk Scenario (*i.e.*, a potential reasonable worst-case scenario used to assess the residual risk impacts and frequency) was assessed for SDG&E's 2018 Enterprise Risk Registry. This scenario does not necessarily address all Drivers/Triggers and Potential Consequences and does not reflect actual or threatened conditions.

#### **D. Potential Drivers/Triggers<sup>14</sup>**

The SA Decision<sup>15</sup> instructs the utility to identify which element(s) of the associated Risk Bow Tie each mitigation addresses. When performing the risk assessment for Employee Safety, SDG&E identified potential leading indicators, referred to as Drivers or Triggers. These include, but are not limited to:

- **DT.1 - Employees deviate from company policies or procedure:** SDG&E has many safety-related policies and procedures for employees to follow. Failure of someone to adhere to such Company safety policies and procedures could result in a safety-related event.
- **DT.2 - Hazards in the work environment (*e.g.*, work locations, roadways):** Unsafe work environments, including work locations, roadways and parking places, customer premises, gas equipment condition, Polychlorinated Biphenyls (PCB), lead from paint, asbestos, fumigation chemicals, for example, could lead to a safety event.
- **DT.3 – Non-use 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 a safety incident.
- **DT.4 - Unsafe operation of equipment or motor vehicles –** If someone does not follow the law and or other applicable safety practices, it could result in a safety incident.

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<sup>14</sup> An indication that a risk could occur. It does not reflect actual or threatened conditions.

<sup>15</sup> D.18-12-014 at Attachment A, A-11 (“Bow Tie”).

- **DT.5 - Damages to SDG&E equipment and/or infrastructure** – Damage to gas and electric infrastructure and facilities could cause an unpredictable environment and, thus, can lead to a safety incident.

#### **E. Potential Consequences of Risk Event**

Potential Consequences are listed to the right side of the Bow Tie illustration provided above. 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:

- Serious injuries and/or fatalities;
- Property damage;
- Operational and reliability impacts;
- Adverse litigation;
- Penalties and fines; and
- Erosion of public confidence.

These Potential Consequences were used in the scoring of Employee Safety that occurred during the development of SDG&E's 2018 Enterprise Risk Registry.

#### **IV. RISK QUANTIFICATION**

The SA Decision sets minimum requirements for risk and mitigation analysis in RAMP,<sup>16</sup> including enhancements to the Interim Decision 16-08-018.<sup>17</sup> SDG&E used the guidelines in the SA Decision as a basis for analyzing and quantifying risks, as shown below. Chapter RAMP-C of this RAMP Report 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.

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<sup>16</sup> *Id.* at Attachment A.

<sup>17</sup> *Id.* at 2-3.

**Table 4: Pre-Mitigation Analysis Risk Quantification Scores<sup>18</sup>**

Employee Safety	Low Alternative	Single Point	High Alternative
Pre-Mitigation Risk Score	127	1086	2684
LoRE	1.3		
CoRE	97	836	2066

**A. Risk Scope & Methodology**

The SA Decision requires a pre- and post-mitigation risk calculation.<sup>19</sup> The below section provides an overview of the scope and methodologies applied for the purpose of risk quantification.

**Table 5: Risk Scope**

<b>In-Scope for purposes of risk quantification:</b>	The risk of an employee safety incident (as defined by OSHA regulation) that causes serious injuries or fatalities while on duty.
<b>Out-of-Scope for purposes of risk quantification:</b>	The risk of a safety incident (outside of OSHA regulation; not work-related) involving an employee that causes serious injuries or fatalities while <u>not</u> on duty.

Pursuant to Step 2A of the SA Decision, the utility is instructed to use actual results, available and appropriate data (*e.g.*, Pipeline and Hazardous Materials Safety Administration data).<sup>20</sup> SDG&E’s safety risk assessment primarily utilized national level data from the Bureau of Labor Statistics (BLS), OSHA, and the DOL.

<sup>18</sup> The term “pre-mitigation analysis,” in the language of the SA Decision (Attachment A, A-12 (“Determination of Pre-Mitigation LoRE by Tranche,” “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.

<sup>19</sup> D.18-12-014 at Attachment A, A-11 (“Calculation of Risk”).

<sup>20</sup> *Id.* at Attachment A, A-8 (“Identification of Potential Consequences of Risk Event”).

Calculating serious injury and fatality incidence rates requires data on total employment by sector, which is provided in the BLS Employment & Earnings data. The data was filtered by North American Industry Classification System (NAICS) subsector codes “2211 Electrical Power Generation, Transmission and Distribution” to represent the SDG&E electric business and “2212 Natural Gas Distribution” to represent the SDG&E gas business. The percentage split for 2017 Common Account Allocations - General and Administrative Expense for SDG&E (75% for electric and 25% for gas) was applied to identify the total number of employees in each respective sector.

Injuries, Illnesses, and Fatalities Program (IIF) historical data from the BLS was used to determine the serious injury and the fatality incidence rates per year. From this data, for the serious injury rate, it was calculated that 1.3% of recordable incidents are serious injuries for electric-related employees and 0.5% of recordable incidents are serious injuries for gas-related employees. This serious injury assumption is calculated as the ratio of serious injuries to recordable incidents during 2015-2016, by sector.

OSHA Enforcement Data, supplemented with OSHA Severe Injury Reports, from the DOL was used to determine the distribution of injuries or fatalities resulting from a single employee safety event. The NAICS code structure used in the data from the BLS is consistent with the NAICS codes in the OSHA enforcement data used for determining the distribution.

A Monte Carlo simulation was used to yield the probabilistic safety and financial consequences. The safety consequence scoring was based on a publication from the Federal Aviation Administration (FAA): a fatality is represented by 1.000 and a serious injury is represented by 0.253. Internal subject matter expert (SME) input was provided to estimate the financial consequence of an employee safety incident. Based on SME input, reliability is not directly impacted by employee safety related incidents.

## **B. Sources of Input**

The SA Decision<sup>21</sup> 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.

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<sup>21</sup> *Id.* at Attachment A, A-8 (“Identification of the Frequency of the Risk Event”).



- Injuries:
  - Agency: Bureau of Labor Statistics- Injuries, Illnesses, and Fatalities Program (IIF)
  - Link: [https://www.bls.gov/iif/oshsum.htm#15Summary\\_Tables](https://www.bls.gov/iif/oshsum.htm#15Summary_Tables)
  - Report Title: TABLE Q1. Incidence rates of total recordable cases of nonfatal occupational injuries and illnesses by quartile distribution and employment size, 2009-2016, all establishment sizes
  
- Fatalities:
  - Agency: Bureau of Labor Statistics- Injuries, Illnesses, and Fatalities Program (IIF)
  - Link: <https://www.bls.gov/iif/oshcfoi1.htm#2015>
  - Report Title: Census of Fatal Occupational Injuries-TABLE A-3. Fatal occupational injuries to private sector wage and salary workers, government workers, and self-employed workers by industry, all United States
  
- Distribution Fitting Data:
  - Agency: Department of Labor (DOL)
  - Link: [https://enforcedata.dol.gov/views/data\\_catalogs.php](https://enforcedata.dol.gov/views/data_catalogs.php)
  - Report Title: OSHA Enforcement Data: osha\_accident, osha\_accident\_injury, osha\_inspection
  
- Severe Injury Assumption:
  - Agency: Occupational Safety and Health Administration (OSHA)
  - Link: <https://www.osha.gov/severeinjury/index.html>
  - Report Title: Severe Injury Reports
  
- Support Data:
  - Agency: Bureau of Labor Statistics- Office of Publications & Special Studies
  - Link: <https://www.bls.gov/opub/ee/archive.htm>
  - Report: Employment & Earnings- Table B-1b. Employees on nonfarm payrolls by industry sector and selected industry detail, not seasonally adjusted, 2011-2016
  
- North American Industry Classification System - NAICS
  - Agency: US Census Bureau
  - Link: [https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart\\_code=22&search=2017%20NAICS%20Search](https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart_code=22&search=2017%20NAICS%20Search)

## V. RISK MITIGATION PLAN

The SA Decision requires a utility to “clearly and transparently explain its rationale for selecting mitigations for each risk and for its selection of its overall portfolio of mitigations.”<sup>22</sup> This section describes SDG&E’s Risk Mitigation Plan by each selected control and mitigation for this risk, including the rationale supporting each selected control and mitigation.

As stated above, SDG&E’s Employee Safety risk is defined as the risk of a work-related employee safety incident that causes serious injuries or fatalities. The Risk Mitigation Plan discussed below includes both Controls that are expected to continue and Mitigations for the period of SDG&E’s TY 2022 GRC cycle.<sup>23</sup> The Controls are those activities that were in place as of 2018, most of which have been developed over many years, to address this risk and include work to comply with laws that were in effect at that time.

As discussed in Chapter RAMP-A, certain internal labor costs are not reflected in Section VII, below. While the costs presented herein may therefore appear lower than those presented in SDG&E’s TY 2019 RAMP Report, it is important to note that this does not reflect a drop in SDG&E’s employee safety risk mitigation efforts. The costs associated with these internal labor activities are not captured in this chapter because SDG&E does not currently track labor in this manner. Therefore, in order to aid RAMP to GRC integration efforts, and Risk Spending Accountability Reporting requirements, SDG&E has not captured certain internal labor costs (*e.g.*, time spent to attend training) in this 2019 RAMP Report but continues to perform these risk mitigation activities as described herein.

### A. SDG&E-3-C1: Mandatory Employee Health and Safety Training Programs and Standardized Policies

SDG&E’s employees receive extensive training because we believe safety starts with proactive upstream measures to prevent a safety incident from occurring. SDG&E’s Mandatory Employee Health and Safety Training Programs and Standardized Policies comprise the

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<sup>22</sup> *Id.* at Attachment A, A-14 (“Mitigation Strategy Presentation in the RAMP and GRC”).

<sup>23</sup> *Id.* at 33. A “Control” is defined as a currently established measure that is modifying risk. A “Mitigation” is defined as a measure or activity proposed or in process designed to reduce the impact/consequences and/or likelihood/probability of an event.

following elements, as required by the California Code of Regulations, Cal/OSHA and/or CPUC regulations:

Injury Illness Prevention Plan (IIPP): In California, every employer is required by law<sup>24</sup> to provide a safe and healthful workplace for its employees. Further, Title 8 of the California Code of Regulations<sup>25</sup> requires every employer to have an effective IIPP. 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 investigation;
- Procedures for correcting unsafe or unhealthy conditions;
- Safety and health training instruction;
- Recordkeeping and documentation; and
- Safety programs.

Employee Safety Handbook/Standards: SDG&E's employee safety handbook is a collection of information, instructions, policies, and procedures intended to safeguard safe work practices and describe how to conduct work safely in the workplace. The purpose of the health and safety policies and procedures within this handbook is to guide and direct all employees to work safely and prevent injury to themselves and others.

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 policy to the workforce. These standards establish the framework and guidance for employee safety performance.

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 policies and

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<sup>24</sup> Cal. Labor Code § 6400.

<sup>25</sup> 8 CCR § 8350.

procedures to confirm compliance with the applicable regulations, and managing Company-wide implementation of key industrial hygiene programs, such as Hazard Communications, Hearing Conservation, Respiratory Protection, Mold, Asbestos and Lead Exposure Management.

Arc Flash Hazard Assessment and Standard Training: SDG&E's Arc Flash Hazard Assessments are conducted to determine and evaluate hazards and level of protection associated with the electric circuits/arcs. The Arc Flash Training is designed to educate and protect employees from the hazards of electric arc and to establish procedures for compliance with Cal/OSHA regulations. 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.

Confined Space Training: This mandatory California OSHA requirement identifies (1) common confined spaces and associated hazards and (2) the related Company policy and procedures. Confined Space Training is mandatory for employees who may:

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

Electric and/or Magnetic Fields (EMF): SDG&E recognizes and shares the concerns of its customers about EMF. SDG&E's EMF Safety Program includes:

- Maintaining a staff of informed representatives available to talk with customers about EMF issues and provide magnetic field measurements for customers requesting the service;
- Providing objective EMF health literature 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. SDG&E-3-C2: Drug and Alcohol Testing Program

SDG&E has implemented an employee drug and alcohol testing program managed in accordance with state and federal regulations. SDG&E's substance abuse prevention policy, which all employees are responsible for knowing and complying with, prohibits the use and/or possession of alcohol during working hours and/or reporting to work with alcohol or prohibited drugs in their system. Violations of this policy are cause for disciplinary action up to and including termination of employment.

In addition to the substance abuse prevention policy, SDG&E deploys Substance Abuse Prevention Training (SAPT) as a proactive measure. SAPT is an on-line, comprehensive self-paced, interactive, and user-friendly course that educates employees on drug and alcohol awareness, SDG&E's prevention program, supervisor responsibilities, identification of being under the influence, reasonable suspicion testing, random drug testing, and post-accident testing.

SDG&E's substance abuse prevention program governs the use of controlled substances and the misuse of alcohol by employees that perform safety-sensitive functions. Employees meeting the criteria under U.S. Department of Transportation Testing Regulation<sup>26</sup> are required to submit to alcohol, illegal, and controlled substance testing:

- **Federal Motor Carrier Safety Administration (FMCSA)** – Applies to Company employees holding a Class A, Class B or commercial Class C motor vehicle driver's license to operate vehicles with a combined gross vehicle weight rating (GVWR) of 26,0001 pounds or more; Department of Transportation placarded vehicles under hazardous material regulations; or vehicles designed to transport 16+ passengers.
- **Pipeline & Hazardous Material Safety Administration (PHMSA)** – Applies to all employees in safety-sensitive positions that perform pipeline operations, maintenance, or emergency response functions, as defined by PHMSA.

Reasonable Suspicion Identification and Testing applies to all employees and can be performed post-accident, as described below. SDG&E's policy requires supervisors to remove

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<sup>26</sup> 49 CFR Part 40.

suspected employee from work if recognizable signs of impairment are observed after using the reasonable suspicion checklist. SDG&E's six-step process is as follows:

1. Recognition: Use of reasonable suspicion checklist to appropriately recognize signs and symptoms that could be indicative of alcohol and/or substance abuse (includes impairing prescription medication);
2. Documentation: Documented observations;
3. Consultation: Consult with appropriate individuals in the department and/or Safety Compliance department;
4. Plan of Action: In conjunction with Safety Compliance department, plan is developed that may include removal from safety sensitive functions, reasonable suspicion testing, suspension or administrative leave;
5. Meeting with Employee: Discussion of factual observation, policies, procedures and other information that are relevant to substance abuse in the workplace. Next steps will be provided along with discussion on potential consequences; and
6. Support and Supervise: Support employee with emphasis on employee accountability.

#### Post-Accident Testing

- **If reasonable suspicion is determined**, post-accident testing may be commenced under guidance of Safety Compliance department and/or designated employer representative (DER).
- **FMCSA** allows post-accident testing when there is an accident while driving a commercial motor vehicle requiring a CDL to operate and the following occurs:
  - a. Fatality, or
  - b. Citation is issued by law enforcement and one of the following:
    - a. Medical treatment away from scene of the accident, or
    - b. A vehicle incurring damage as a result of the accident towed from the scene.
- **PHMSA** – An “Accident” means an incident reportable under the Department of Transportation involving gas pipeline facilities or LNG facilities or an accident reportable under part 195 involving hazardous liquid pipeline facilities. Testing

must occur as soon as possible, but no later than 32 hours after an accident for those whose performance contributed to the accident or cannot be completely discounted as a contributing factor.

**C. SDG&E-3-C3: Safety Culture (e.g., safety meetings, committees, survey, safety pledge campaign)**

As further discussed in Chapter RAMP-F, SDG&E is committed to a strong safety culture and places the highest priority on employee, customer, and public safety. To 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 is already using the results of the 2018 survey to develop action plans to further strengthen its employee safety program and culture. 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 employers 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 a 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 oversight role.

Safety Meetings: The main objectives of a safety meeting 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.

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 strong partnership with 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 the 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.

Bi-annual 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 Participation, Supervisor Participation, Employee Participation, Safety Support Activities, Safety Support Climate, and Organizational Climate. The Safety Barometer Survey is provided by the National Safety Council (NSC),<sup>27</sup> an independent non-profit organization that has advocated for employee and public safety for over 100 years.

The NSC takes our survey results and compares it to other participating companies in their survey database (approximately 600 companies, currently). The results of SDG&E's 2018 survey placed it in the 91<sup>st</sup> percentile and in the top 10 percent of the 580 organizations in the NSC database who participated in the survey in 2018. The overall score for SDG&E increased by 6 points from the 2016 survey. SDG&E looks to continually improve its safety program and culture. Action plans based on the 2018 NSC survey results are being developed and executed.

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<sup>27</sup> National Safety Council, *NSC Safety Training*, available at <https://www.nsc.org/>.



The six critical areas of the NSC survey and SDG&E's 2018 rankings in those areas are:

- **Management Participation (top 8%).** Management Participation items describe ways in which top and middle management demonstrate their leadership and commitment to safety in the form of words, actions, organizational strategy, and personal engagement with safety.
- **Participation (top 9%).** 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.
- **Safety Support Climate (top 10%).** 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.
- **Safety Support Activities (top 11%).** 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.
- **Employee Participation (top 15%).** 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.
- **Organizational Climate (top 24%).** Organizational Climate items probe general conditions that interact with the safety program to affect its ultimate success, such as teamwork, morale, and employee turnover.

### **Safety Committees/Sub-committees:**

Field and Office Site Safety Committees (60): 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: 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): Since 2015, the GSS has engaged employee representatives from each district and management on a monthly basis to discuss concerns and address potential gas operations safety hazards. The objective is to reduce unnecessary risk, resolve gas safety issues/concerns, and communicate information back to frontline employees.

#### **D. SDG&E-3-C4: Employee Behavior Based Safety (BBS) Program**

SDG&E's BBS Program is a proactive approach to safety and health management, focusing on principles that recognize at-risk behaviors as a frequent cause of both minor and serious injuries. BBS is the "application of science of behavior change to real world safety problems." This process is a safety partnership between management and employees that continually focuses people's attentions and actions on their, and others', daily safety behavior to identify safe and at-risk behaviors. Through a peer observation program, employees observe employees working using a behavior inventory checklist to track safety behaviors and have a dialog on safe and at-risk behaviors, then recommended behavioral safety changes.

At SDG&E, there are five BBS processes throughout field operations. As part of SDG&E's long-term safety strategy, a 2019 action plan has been created for our peer led BBS program. This year will focus on individual process reviews for each of the five BBS teams to identify gaps, strengths and opportunities; review and develop BBS training; and create a guidance team for the five processes.

#### **E. SDG&E-3-C5: 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. ESCMP is an environmental, health and safety management system to plan, set priorities, inspect, educate, train, and monitor the effectiveness of environmental, health and safety activities in accordance with the internationally accepted standard, ISO 14001. 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 or a Facility-Based checklist. Through this process, the Environmental and Safety departments can review submittals in the online system and confirm all required inspections were completed, assigned training was done, and all corrective actions were addressed.

Site Managers, with support of their Safety Advisors, are responsible for conducting safety self-assessments of Company facilities and operations (Bases, Compressor Stations, Construction & Operations (C&O) Centers, Data Centers, Gas Storage, Laboratory, Liquefied Natural Gas, Multiuse Facilities, Offices and Power Plant Facilities) as set forth in the Safety Inspection and Self-Assessments Standards.

Semi-annual Inspections - Site, facility, and branch managers (or designees) conduct semi-annual safety inspections of their facilities in the first and third calendar quarters. The first semi-annual inspection is completed in Q1 and results entered into SDG&E's Safety Information Management System (SIMS) by March 31. The second semiannual inspection is completed in Q3 and results entered in SIMS by September 30 each year.

#### **F. SDG&E-3-C6: Employee Safety Training and Awareness Programs**

As previously stated, SDG&E's employees receive extensive training because we believe safety starts with proactive upstream measures to prevent a safety incident from occurring. SDG&E's employee safety training and awareness programs include:

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 learning management system (LMS). Examples of online training include, but are not limited to, IIPP, EAP, Smith System® refresher, and ergonomics. These training programs develop skill sets while being available at any time, accessible from any location, and performed at the user's convenience. Additionally, completion of the training can be tracked in SDG&E's LMS system

to confirm compliance. SDG&E believes that being educated and providing employees with information, tools and training at their fingertips will reduce the potential for injury.

Safety in Motion (SIM): SIM is a body mechanics education program to help inform employees about body positioning to help prevent 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): It is SDG&E policy that all Company facilities have an EAP to provide for the safety of employees during emergencies and comply with state and federal safety requirements. The EAP outlines the roles and responsibilities of employee and emergency response teams during workplace emergencies. 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, or classroom training.

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 the device and provided with first aid and cardiopulmonary resuscitation (CPR) training. When used, the AED device automatically diagnoses life-threatening cardiac arrhythmias of ventricular fibrillation and pulseless ventricular tachycardia and, once prompted by the trained responder, administers defibrillation (the application of electricity stopping the arrhythmia) allowing the heart to re-establish an effective rhythm. With simple audio and visual commands, SDG&E's AEDs are designed to be simple to use for the layperson. The use of AEDs is taught in SDG&E's first aid, certified first responder, and basic life support (BLS) level CPR classes.

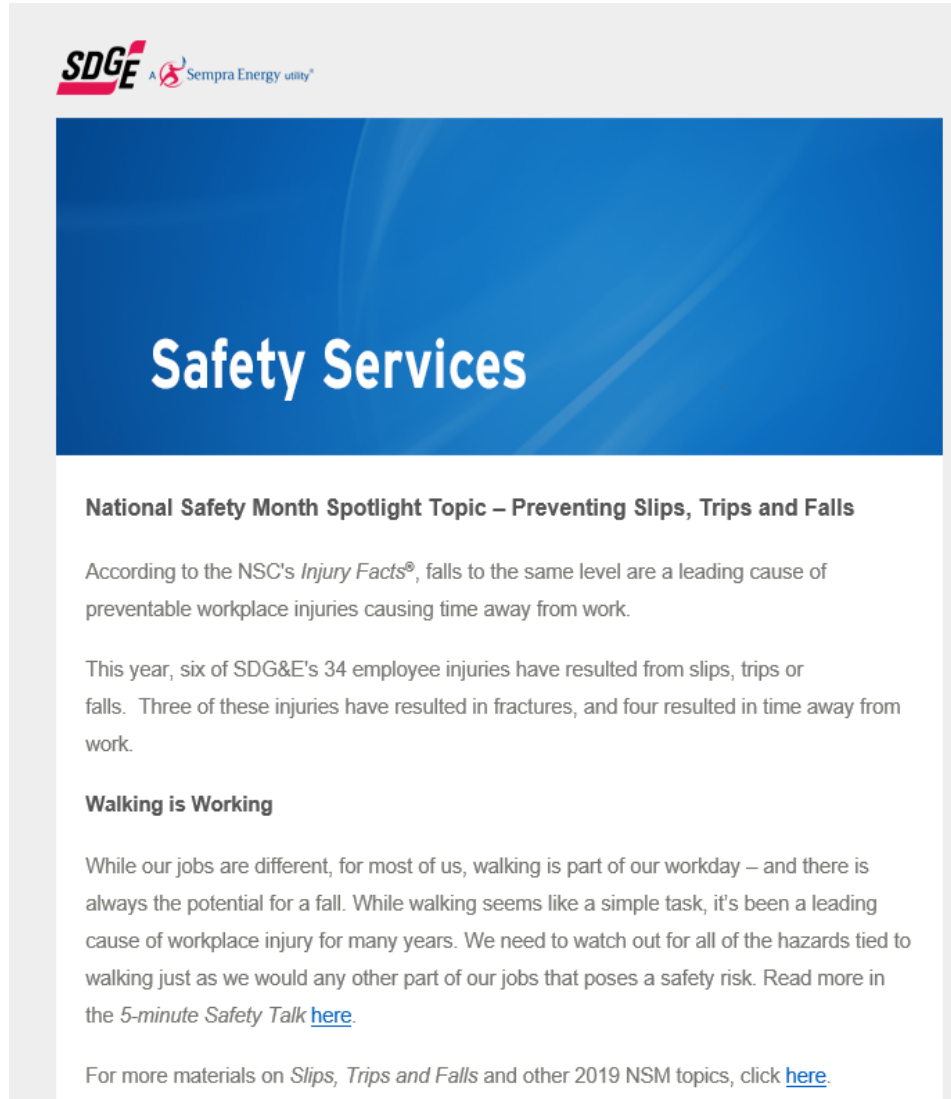


Partnership with San Diego Project Heart Beat (SDPHB): SDG&E partners with SDPHB to retrieve our AEDs following use, review results, and submit information to medical facilities to help increase the survival rate for those who experience cardiac arrest. San Diego Project Heart Beat is a nationally and internationally recognized program. Awarded twice in 2009 for best large community PAD program by the International Association of Fire Chiefs and Sudden Cardiac Arrest Association Award (SCAA) recipient for its organizational elements and its success.

Safety Communications: 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. Additionally, 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**



The graphic is a sample employee safety communication. It features the SDGE logo and Sempra Energy utility logo at the top left. The main title is "Safety Services" in large white text on a blue background. Below the title, the text reads: "National Safety Month Spotlight Topic – Preventing Slips, Trips and Falls". It then states: "According to the NSC's *Injury Facts*®, falls to the same level are a leading cause of preventable workplace injuries causing time away from work." This is followed by: "This year, six of SDG&E's 34 employee injuries have resulted from slips, trips or falls. Three of these injuries have resulted in fractures, and four resulted in time away from work." The next section is titled "Walking is Working" and says: "While our jobs are different, for most of us, walking is part of our workday – and there is always the potential for a fall. While walking seems like a simple task, it's been a leading cause of workplace injury for many years. We need to watch out for all of the hazards tied to walking just as we would any other part of our jobs that poses a safety risk. Read more in the 5-minute Safety Talk [here](#)." The final line says: "For more materials on *Slips, Trips and Falls* and other 2019 NSM topics, click [here](#)."

### **G. SDG&E-3-C7: 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 on-site employee assistance services including:

- Health & Education Seminars/Lectures (*e.g.*, Stress Management, Weight Management, Nutrition, Heart Disease, High Blood Pressure);
- Fitness Subsidy Program (*i.e.*, Company subsidy for gym membership);

- Financial wellness education;
- Annual Flu Immunizations;
- Health Screenings (*e.g.*, body fat, cholesterol, blood pressure, glucose, bone density screenings);
- Work-site programs (*e.g.*, fitness classes, Weight Watchers, yoga, walking class, chair massages, reflexology);
- Special Events (*e.g.*, 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);
- 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; and
- Wellness newsletter.

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. SDG&E-3-C8: OSHA Voluntary Protection Program**

The Federal and California Voluntary protection programs (Cal/VPP) 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. OSHA's Voluntary Protection Programs<sup>28</sup> (VPP) recognize 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. 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. SDG&E-3-C9: 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, internal safe driving training, and development of training materials available to reinforce safe driving principles.

Smith System 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 way to increase an experienced driver's safety awareness and change poor driving habits. With principles based on the Five Keys to Space Cushion Driving including 1) aim high in steering, 2) get the big picture, 3) keep your eyes moving, 4) leave yourself an out, and 5) make sure they see you. These principles reinforce safe driving techniques.

Close Quarter Maneuvering Drivers Training: This internal SDG&E course was customized from the Smith Systems Advanced Backing, Parking, and Close Quarters Maneuvering course. During this in-house training, advanced backing and close quarter

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<sup>28</sup> United States Department of Labor, *Voluntary Protection Programs*, available at <https://www.osha.gov/vpp/>



maneuvering are learned/practiced during 30-minute classroom discussion/ 3-hour driving course using the vehicle driven for work. Driving course includes blind spot identification, serpentine and vanishing 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 learning 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. Vanishing cone 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 these challenging driving environments.

Circle of Safety Technique Training: In 1999, SDG&E adopted the Circle of Safety, which is a safe practice (walk-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, 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 Video Library: 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 Drivers' License Pull Program: The Department of Motor Vehicle (DMV) Drivers' License (DL) Employer Pull Notice (EPN) program allows SDG&E to electronically receive employees' driving records to monitor DL records of employees who drive on behalf of our organization. The monitoring allows SDG&E to determine if each driver has a valid drivers' license, reveal problem drivers or driving behavior, and improve public safety. The EPN

automatically generates a driver record when there is a conviction, failure to appear, accident, driver license suspension or revocations, or any other actions taken against the driving privilege added to an employee's drivers record.

Commercial Drivers' License Program: Driving a Commercial Motor Vehicle (CMV) requires a higher level of knowledge, experience, skills, and physical abilities 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 Commercial Driver's License (CDL). Additionally, CDL holders are held to a higher standard when operating any type of motor vehicle on public roads. Serious traffic violations committed by a CDL holder can affect their ability to maintain their CDL certification. CDL holders are also subject to obtain and maintain a valid medical examiner's certificate to validate that an individual meets health requirements and physical impairments that may affect the ability to safely drive CMVs are addressed. SDG&E receive reminders with driver license and medical certificate expirations to confirm commercial drivers have the proper certificates and certifications.

In-house Development of 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.

- “Active Passenger” was created to set expectations for the driver and passenger to assist each other to remain distraction free, share the SMITH keys, 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. SDG&E-3-C10: Personal Protection Equipment (PPE)**

SDG&E's PPE program establishes a comprehensive approach toward controlling potential accidental employee injuries and reducing/preventing exposure to specified hazards when/where needed. PPE includes uniforms and equipment designed to protect employees

while performing their job (e.g., fire retardant uniforms, gloves, protective eyewear). Good safety practices should not rely on PPE alone to control all possible hazards. All employees who are required to use PPE are trained on when PPE is necessary, what PPE is necessary, how to properly don/remove/adjust/wear PPE, limitations of PPE and the proper care/maintenance/life/disposal of PPE.

**K. SDG&E-3-C11: Jobsite Safety Programs including Near Miss and Stop the Job**

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 maintenance and are used to address deficiencies. 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 traveling public 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.

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, and through an online process. SDG&E's online process allows employees to report anonymously through an electronic form. The information is submitted to Safety Services for review and may be shared with other employees, so they understand and benefit from lessons learned.

Incident Investigation: As part of improving its safety culture, SDG&E has established a team to create a more 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.

**L. SDG&E-3-C12: 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, Bureau of Labor Statistics, and other partners.

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

**M. SDG&E-3-M1: 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, ICMS 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 will be provided to executive and leadership teams to further their safety education and create an environment to support a positive safety culture.

Safety Advisor training: 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. All safety responders and Safety Advisors are FEMA ICS 100, 200 and 775 certified. 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.

**N. SDG&E-3-M2: Enhanced Safety in Action Program**

Designed for executives and field operations directors, the enhanced Safety in Action (SIA) initiative will provide 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. Through this program, a SIF exposure reduction safety process

will be developed to define a SIF definition for SDG&E, develop a SIF decision tree, determine SIF metrics (leading and lagging), and use a precursor analysis tool to reduce SIF exposure. Goals and objectives for the SIA program will consist of clear, concise wording that demonstrates a forward-moving effort to improve safety. These goals and objectives will be defined and measured.

**O. SDG&E-3-M3: Enhanced Employee Safe Driving Training (Vehicle Technology Programs)**

SDG&E is planning to implement vehicle technology programs to provide a comprehensive view of the vehicle driver and fleet performance through data driven vehicle analytics. The vehicle technology platform would allow 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 helps 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. SDG&E-3-M4: Implementing Findings/Results from VPP Assessments**

As stated above, OSHA's Voluntary Protection Programs<sup>29</sup> (VPP) recognize 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. 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.

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<sup>29</sup> United States Department of Labor, *Voluntary Protection Programs*, available at <https://www.osha.gov/vpp/>

**Q. SDG&E-3-M5: Energized Skills Training and Testing Yard**

Employee Safety standards and equipment are continually evolving, and SDG&E must introduce and review new standards, procedures and/or equipment to impacted employees. SDG&E plans to convert an existing facility to an Energized Skills Training and Testing Yard for this purpose, to allow for hands-on training for electric crews, linemen foreman, and/or trouble-shooters. This converted facility would provide a space for vendors to demonstrate new equipment and show how the equipment safely operates. SDG&E believes that employees would benefit from having this hands-on training and testing yard in lieu of a classroom setting, therefore resulting in safer operation of such equipment.

**R. SDG&E-3-M6: Employee Wildfire Smoke Protections – 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. California employers are already required to protect workers from hazards like unhealthy air, as demonstrated above in SDG&E-3-C1, 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 will require 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 provide approved respirators, like N95 respirators. If the index is higher than 500, the use of the respirators is required.

**VI. POST-MITIGATION ANALYSIS OF RISK MITIGATION PLAN**

As described in Chapter RAMP-D, SDG&E has performed a Step 3 analysis where necessary pursuant to the terms of the Settlement Agreement. SDG&E has not calculated an RSE for activities beyond the requirements of the Settlement Agreement but provides a qualitative description of the risk reduction benefits for each of these activities in the section below.



### **A. Mitigation Tranches and Groupings**

The Step 3 analysis provided in the SA Decision<sup>30</sup> instructs the utility to subdivide the group of assets or the system associated with the risk into tranches. As defined in the SA Decision, a tranche is “a logical disaggregation of a group of assets (physical or human) or systems into subgroups with like characteristics for purposes of risk assessment.”<sup>31</sup> Therefore, risk reduction from controls and mitigations and RSEs are determined at the Tranche level. For purposes of the risk analysis, each Tranche is considered to have homogeneous risk profiles (*i.e.*, the same LoRE and CoRE).

SDG&E’s comprehensive Employee Safety program consists of training courses, policies, 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 Employee Safety risk, SDG&E grouped like activities with like risk profiles into mitigation programs. Since each of SDG&E’s Employee Safety 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 trached.

### **B. Post-Mitigation/Control Analysis Results**

For purposes of this post-mitigation and post-control analysis, SDG&E looked at historical safety performance results and the improvements year-over-year to calculate an overall risk reduction benefit of performing these activities.<sup>32</sup> SDG&E then looked at existing/continuing programs (*i.e.*, controls), and expect to get similar results (*i.e.*, percentage of risk reduction benefit by continuing the activity). SDG&E also accounted for the risk increase that would occur over time if we stopped performing these activities. For new and/or incremental mitigations, we expect to achieve further risk reduction. The specific risk reduction

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<sup>30</sup> D.18-12-014 at Attachment A, A-11 (“Definition of Risk Events and Tranches”).

<sup>31</sup> *Id.* at A-4.

<sup>32</sup> *Id.* at Attachment A, A-12 (“Determination of Post-Mitigation LoRE,” “Determination of Post-Mitigation CoRE,” “Measurement of Post-Mitigation Risk Score,” “Measurement of Risk Reduction Provided by a Mitigation”).



benefit percentages used for each identified control/mitigation is included under each program heading below.

**1. SDG&E-3-C1: Mandatory Employee Health and Safety Training Programs and Standardized Policies**

**a. Description of Risk Reduction Benefits**

Safety handbooks and standards help decrease employee safety risk by providing information in policy and procedure formats used to guide and direct all employees to work safely and prevent injury to themselves and others.

OSHA mandatory employee health and safety training programs and standardized policies help reduce SDG&E employee risk by providing a framework for working safely. They serve as a proactive approach to address safety and health issues and conditions in the workplace by training and educating employees, recognizing that finding and correcting hazards before an injury or illness occurs is far more effective than an after-the-fact response. Each training program (and related policy) identifies the purpose, objectives, and available informational resources and training, and provide guidelines that communicate expectations, procedures and ways to mitigate hazards in existing workplace systems to help workers avoid injury.

Industrial hygiene programs anticipate, recognize, evaluate and correct workplace conditions that may cause workers' injury or illness. These programs include but are not limited to Hearing Conservation, Respiratory, Hazard Communication – Chemical, and Asbestos/lead/mold Abatement. Industrial hygiene programs use environmental monitoring and analytical methods to detect the extent of worker exposure and employ engineering, work practice controls, and other methods to control potential health hazards. Developing and complying with mandatory occupational safety and health standards involves determining the extent of employee exposure to hazards and deciding what is needed to control these hazards, thereby protecting the workers. Industrial hygienists, or IHS, are trained to anticipate, recognize, evaluate, and recommend controls for environmental and physical hazards that can affect the health and well-being of workers.

EMF programs provide a trustworthy and balanced source of information about potential EMF health risk concerns received from employees and the public. SDG&E is committed to studying and addressing EMF in a socially responsible manner, exhibited by our support and

performance of health and engineering research. SDG&E has taken steps to reduce the magnetic fields created by new facilities, and today we continue to work with government agencies and research organizations to resolve unanswered questions and develop consistent EMF policies.

SDG&E has not performed a Risk Spend Efficiency Evaluation on SDG&E-3-C1 because the program elements are mandated by law and/or regulation. SDG&E must comply with all applicable laws/regulations, and thus it is not feasible for SDG&E to stop performing this activity or calculate the risk reduction benefits received for performing this activity.

**b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C1 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. This well-established program serves as a proactive approach to address potential workplace safety and health hazards and therefore reduce Potential Consequences by identifying potential hazards and developing training, policies and programs designed to avoid those hazards. SDG&E's health and safety training program and standardized policies therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); non or improper use of personal protective equipment (DT.3); and unsafe operation of equipment or motor vehicles (DT.4). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); and property damage (PC.2).

As stated above, this program is mandated by state and federal regulation. SDG&E complies with all applicable laws and regulations and implements the various elements of this program in aim to reduce its Employee Safety risk.

**2. SDG&E-3-C2: Drug and Alcohol Testing Program**

**a. Description of Risk Reduction Benefits**

Drug testing and substance abuse prevention training in the workplace connects to occupational safety as a key component in protecting the safety, health, and welfare of employees and the public. Drug testing programs can contribute to the reduction of employee injury and illness by providing a powerful deterrent to drug use on the job. Employers who are drug testing are committed to having sober employees in the workplace, thereby reducing occupational injuries and illnesses and to sending a clear signal they care about their employees. In addition, reasonable suspicion drug testing is a critical safety measure. An employee that may

be impaired while working and must be taken out of his or her work position; the drug and/or alcohol test will verify that the employee may have used drugs or alcohol while at work or before coming to work, which in turn decreases the likelihood of an at-work injury.

SDG&E has not performed a Risk Spend Efficiency Evaluation on SDG&E-3-C2 because the program elements are mandated by law and/or regulation. SDG&E must comply with all applicable laws and regulations, and thus it is not feasible for SDG&E to stop performing this activity or calculate the risk reduction benefits received for performing this activity.

#### **b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C2 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. This program represents both a proactive approach (e.g., policy, procedures, training) and a reactive approach (e.g., post-accident testing, disciplinary action) to address potential safety hazards related to the potential for employee drug and/or alcohol use. SDG&E's drug and alcohol testing program therefore addresses the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); non or improper use of personal protective equipment (DT.3); unsafe operation of equipment or motor vehicles (DT.4); and damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); property damage (PC.2); operational and reliability impacts (PC.3); adverse litigation (PC.4); penalties and fines (PC.5); and erosion of public confidence (PC.6).

While this risk is covered in this Employee Safety chapter, this program also provides risk benefit to SDG&E's Customer & Public Safety risk (SDG&E-5).

### **3. SDG&E-3-C3: Safety Culture**

#### **a. Description of Risk Reduction Benefits**

Governed by the Executive Safety Counsel and led by SDG&E's Chief Operating Officer, SDG&E's various safety committees help inform and educate employees about safety and health issues throughout all levels of the Company and set meaningful and attainable safety goals throughout the organization. Safety committees provide the following benefits:

- support a positive safety culture;

- reduce the risk of workplace injuries and illnesses;
- encourage employees to participate in the Company safety programs;
- confirm compliance with state and federal health and safety regulations;
- provide feedback on safe work practices;
- develop safety programs tailored to individual departments;
- lead safety training;
- communicate about safety and health issues; and
- provide a forum where employees and company leadership can discuss, identify and collaborate on safety solutions.

For purposes of the RSE analysis, SDG&E looked at all existing controls, and considered the average year-over-year reduction in safety incidents achieved as a result of performing these activities, and then looked at the activities within the control program, “safety culture,” expecting an additional 1.2% risk reduction by continuing to perform these activities. The primary reason for using a 1.2% risk reduction score is the action planning taking place throughout the organization as a result of the Safety Culture Survey.

#### **b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C3 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. SDG&E’s safety culture initiatives create constant awareness, dialog, and means for employees to express questions, concerns and lessons learned. Though these activities, SDG&E encourages two-way formal and informal communication between employees to identify and manage safety risks before incidents occur. Employee feedback from these meetings/events help lead constant improvement across the company. SDG&E’s safety culture programs therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); non or improper use of personal protective equipment (DT.3); and unsafe operation of equipment or motor vehicles (DT.4). These programs aim to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); property damage (PC.2); operational and reliability impacts (PC.3); adverse litigation (PC.4); penalties and fines (PC.5); and erosion of public confidence (PC.6).

These programs aim to reduce Potential Consequences by raising questions, addressing issues, communicating safety issues, and demonstrating SDG&E’s safety-first culture.

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.3147	
	CoRE	97.42	835.67	2066.09
	Risk Score	128.08	1098.68	2716.34
	RSE	4.58	39.24	97.03

**4. SDG&E-3-C4: Employee Behavior Based Safety Program**

**a. Description of Risk Reduction Benefits**

Behavior Based Safety processes are part of a holistic approach for driving occupational safety and health improvements. Through peer observation, observers are able to identify safe and at-risk work behaviors that are discussed with employees and tracked in a database. Positive feedback reinforces safe work behaviors and at-risk behaviors are discussed through coaching moments, to identify why at-risk behavior occurred and to discuss a safer work method. These findings are aggregated to identify patterns of hazard exposure and serious injury or fatality (SIF) potential, which are followed by action planning to mitigate hazards. The Behavior Based Safety process enhances the safety approach through education, skills training, and in-the-field coaching and guidance that equips organizations to change unsafe behaviors through coaching.

For purposes of an RSE analysis, SDG&E looked at all existing controls and considered the average year-over-year reduction in safety incidents achieved as a result of performing these activities. SDG&E then looked at the activities within the control program, “Employee Behavior Based Safety Program,” expecting an additional 1.5% risk reduction by continuing to perform these activities. Based on subject matter expert judgment, the enhancements within the BBS

programs along with the planned investments in tools and technology will provide an additional 1.5% risk reduction.

**b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C4 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. The purpose of the BBS Program is to reduce the occurrence of at-risk behaviors by modifying an individual's actions and/or behaviors through observation, feedback, and positive interventions aimed at developing safe work habits. SDG&E's BBS Program is a proactive approach to safety and health management, focusing on principles that recognize at-risk behaviors as a frequent cause of both minor and serious injuries. SDG&E's BBS program therefore addresses the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); hazards in the work environment (DT.2); non or improper use of personal protective equipment (DT.3); unsafe operation of equipment or motor vehicles (DT.4); and damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); and property damage (PC.2).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.3186	
	CoRE	97.42	835.67	2066.09
	Risk Score	128.46	1101.94	2724.39
	RSE	2.47	21.18	52.36

**5. SDG&E-3-C5: A Comprehensive Environmental & Safety Compliance Management Program**

**a. Description of Risk Reduction Benefits**

Each Director and Manager who reports to a Vice President (VP) or Senior VP (SVP) is assigned the role of Responsible Person (RP) for an Employee-Based Checklist. An RP is tasked with entering ESCMP information into the online system and submitting the checklist electronically to his/her VP/SVP for approval. This process provides oversight to verify that applicable safety compliance requirements are completed by employees.

SDG&E has not performed an RSE analysis on this activity, for several reasons. SDG&E's Comprehensive ESCMP tracks employee training requirements to confirm compliance and completion. The program itself does not provide any risk reduction benefit without the underlying training courses. Further, SDG&E has not specifically identified internal labor costs associated with implementing this program.

**b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C5 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. SDG&E's ESCMP is a valuable tool to manage safety compliance and track that employees have performed the necessary training and tasks in order to help prevent Potential Consequences, including serious injury or fatality. SDG&E's ESCMP therefore addresses the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); hazards in the work environment (DT.2); non or improper use of personal protective equipment (DT.3); unsafe operation of equipment or motor vehicles (DT.4); and damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**6. SDG&E-3-C6: Employee Safety Training and Awareness Programs**

**a. Description of Risk Reduction Benefits**

At SDG&E, safety starts with the individual. Accordingly, the Company seeks to have every employee equipped to work safely, respond during an emergency, and live a healthy lifestyle. SDG&E believes that being educated, making sure employees have information, tools and training will reduce the potential for injury. With safety as the core value of its operations,

SDG&E chooses to integrate these fundamentals into the Company's safety programs and worksites. Lack of training may result in employees not understanding safety hazards of their work environment and increase the likelihood of injury.

SDG&E has not performed a Risk Spend Efficiency Evaluation on SDG&E-3-C6 because the program elements are mandated by law and/or regulation. SDG&E must comply with all applicable laws/regulations, and thus it is not feasible for SDG&E to stop performing this activity or calculate the risk reduction benefits received for performing this activity.

#### **b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C6 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. SDG&E's Employee Safety Training and Awareness Programs aim to proactively train employees on topics necessary to safely perform their job and communicate topics of importance for safety best practices. These programs are a proactive approach aimed to minimize and help prevent Potential Consequences, including serious injury or fatality. SDG&E's employee safety training and awareness testing program therefore addresses the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); hazards in the work environment (DT.2); non or improper use of personal protective equipment (DT.3); unsafe operation of equipment or motor vehicles (DT.4); and damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

### **7. SDG&E-3-C7: Employee Wellness Programs**

#### **a. Description of Risk Reduction Benefits**

SDG&E's approach to a healthy workplace has evolved from solely the physical work environment (primarily on-the-job safety concerns) to a more holistic concept that encompasses psychosocial and personal health factors. This focus is comprehensive in scope, encompassing assessment of employees' overall well-being in addition to injury prevention. It includes an increasing emphasis on safety programs that is inclusive of physical, mental and social well-being. With an integrated program in place that encompasses health promotion, occupational health and safety, we can break down silos to promote a healthy workplace. For example, if



musculoskeletal disorders are occurring among employees, we can examine the ergonomics of the work process/station and correct any hazardous physical conditions.

For purposes of an RSE analysis, SDG&E looked at all existing controls and considered the average year-over-year reduction in safety incidents achieved as a result of performing these activities. SDG&E then looked at the activities within the control program, “Employee Wellness Programs” and expect an additional 0.8% risk reduction by continuing to perform these activities. The primary reasons for using 0.8% risk reduction score is the continued focus on health and well-being for SDG&E employees (e.g., annual flu shots, health screenings, nutritional classes) and the telemedicine experience providing quicker, real-time, on-demand, face-to-face first aid and healthcare along with the newly adopted 24/7 after-hours medical care services.

**b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C7 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. SDG&E’s wellness programs serve as a proactive approach to identify and address potential workplace safety and health hazards and therefore avoid Potential Consequences. SDG&E’s employee wellness programs therefore address the following elements of the left side of the Risk Bow Tie: hazards in the work environment (DT.2); and non or improper use of personal protective equipment (DT.3). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.3095	
	CoRE	97.42	835.67	2066.09
	Risk Score	127.58	1094.34	2705.60
	RSE	1.31	11.22	27.73

## **8. SDG&E-3-C8: OSHA Voluntary Protection Program (VPP) Assessments**

### **a. Description of Risk Reduction Benefits**

The benefits of the OSHA VPP can be vast, including improvement in employee morale and motivation to work safely, improved labor/management relation, reduction in overall injuries and illnesses, higher product quality and work productivity, comprehensive evaluation by a team of health and safety consultants, and networking with government and industry. VPPs and onsite consultation services, when coupled with effective safety program, expand worker protection. The VPP designations are designed to recognize outstanding achievement by companies that have successfully incorporated comprehensive safety and health programs into their total management system. They motivate others to achieve excellent safety and health results in the same outstanding way, as they establish a cooperative relationship among employers, employees, and OSHA.

For purposes of an RSE analysis, SDG&E looked at all existing controls and considered the average year-over-year reduction in safety incidents achieved as a result of performing these activities. SDG&E then looked at the activities within the control program, “OSHA Voluntary Protection Program Assessments” and expect an additional 0.3% risk reduction by continuing to perform these activities. A 0.3% risk reduction score was used, based on subject matter expert judgment. If not for the lengthy VPP process to obtain certification (2-3 years) and the fact the certification is limited to a single work location, the risk reduction score would have been higher.

### **b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C8 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. SDG&E’s OSHA VPP serves as a proactive approach to identify and address potential workplace safety and health hazards and therefore avoid potential consequences. OSHA’s VPP assessments are a proactive way for SDG&E to identify strengths and opportunities for enhancing safety. VPP physical inspections, document reviews, and interviews are components in this process. These assessments provide insight into baseline safety and health hazards to establish initial levels of exposures for comparison to future levels so change can be identified. Implementing findings/results and acting on results helps move safety from its current “as is” state to the desired future state.



The sites with VPP culture have knowledgeable employees and management who work together in partnership with Fed and Cal/OSHA to systematically identify and correct hazards. SDG&E has two worksites with VPP Star Certifications. SDG&E's VPP therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); and hazards in the work environment (DT.2). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		<b>1.299</b>	
	CoRE	97.42	<b>835.67</b>	2066.09
	Risk Score	126.57	<b>1085.65</b>	2684.13
Post-Mitigation	LoRE		<b>1.3030</b>	
	CoRE	97.42	<b>835.67</b>	2066.09
	Risk Score	126.94	<b>1088.91</b>	2692.18
	RSE	8.52	<b>73.12</b>	180.77

**9. SDG&E-3-C9: Safe Driving Programs**

**a. Description of Risk Reduction Benefits**

Implementation of driver safety programs helps SDG&E keep employees safe by educating them on driving techniques and principles that decrease the risk of motor vehicle incidents, collisions, and traffic violations. Through these programs, drivers learn to improve their driving skills by reducing their driving risk by anticipating situations and making informed decisions. The Department of Motor Vehicle (DMV) Drivers' License (DL) Employer Pull Notice (EPN) program allows SDG&E to electronically receive employees' driving records to monitor DL records of employees who drive on behalf of our organization. The monitoring allows SDG&E to determine if each driver has a valid drivers' license, reveal problem drivers or driving behavior, and improve public safety. The EPN automatically generates a driver record when there is a conviction, failure to appear, accident, driver license suspension or revocations, or any other actions taken against the driving privilege added to an employee's drivers record. These notifications allow SDG&E to stay up-to-date with drivers' records and reduce the likelihood of accidents by monitoring the status/validity of current licenses and providing information about potential issues that may need to be reviewed for action.

For purposes of an RSE analysis, SDG&E looked at all existing controls, considered the average year-over-year reduction in safety incidents achieved as a result of performing these activities, and then looked at the activities within the control program, "Safe Driving Programs,"

expecting an additional 0.5% risk reduction. Subject matter expert judgment determined a 0.5% risk reduction score was appropriate due to newly developed Close Quarter Maneuvering (CQM) driver’s training, which will be administered to all employees whose job classification require them to drive. CQM training is behind-the-wheel training in employees’ assigned vehicle and includes blind spot identification, serpentine and vanishing cone courses.

**b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C9 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. SDG&E’s safe driving programs serve as a proactive approach to identify and address potential workplace safety and health hazards and therefore avoid potential consequences. SDG&E’s safe driving programs therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); and unsafe operation of equipment or motor vehicles (DT.4). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); and property damage (PC.2).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.3056	
	CoRE	97.42	835.67	2066.09
	Risk Score	127.20	1091.08	2697.55
	RSE	1.98	16.95	41.90

**10. SDG&E-3-C10: Personal Protection Equipment**

**a. Description of Risk Reduction Benefits**

Controlling exposures to occupational hazards is a fundamental method of protecting workers. These controls include elimination, substitution, engineering and can be administrative in an effort to minimize hazard exposures in the workplace. When such controls are not practical

or applicable, PPE is employed to reduce or eliminate personnel exposure to hazards. PPE is worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, physical, electrical, mechanical, or other workplace hazards. SDG&E's PPE program, together with employee safety training, reduces risk to employees by confirming the proper use and fitting of PPE.

Per OSHA standards,<sup>33</sup> prior to requiring employees to wear PPE, SDG&E is required to:

- Perform hazard assessments and determine the PPE needed to protect workers;
- Provide training on the proper use of PPE for working on or near exposed energized parts;
- Discuss PPE needs during required job briefings; and
- Inspect and test certain PPE such as insulating (rubber) gloves and sleeves (29 CFR 1910.137) to confirm that they are not damaged or defective and will provide the needed protection.

SDG&E has not performed a Risk Spend Efficiency Evaluation on SDG&E-3-C10 because the program elements are mandated by law and/or regulation.<sup>34</sup> SDG&E must comply with all applicable laws/regulations, and thus it is not feasible for SDG&E to stop performing this activity or calculate the risk reduction benefits received for performing this activity.

#### **b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C10 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. Mandatory use of PPE aims to keep employees safe and prevent Potential Consequences from workplace hazards possibly resulting in serious injury or fatality. SDG&E's required use of PPE therefore addresses the following elements of the left side of the Risk Bow Tie: non or improper use of personal protective equipment (DT.3). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

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<sup>33</sup> 29 CFR § 1910.269.

<sup>34</sup> *Id.* at § 1910 *et. seq.*

## **11. SDG&E-3-C11: Jobsite Safety Programs including Near Miss and Stop the Job**

### **a. Description of Risk Reduction Benefits**

Near miss reporting is a means to help raise awareness and provides the opportunity to help prevent future incidents by communicating the facts around events that had the potential to result in injury, illness or damage, but did not. This program allows potential hazards to be investigated, mitigated, and communicated. Reporting near misses also reduces risk by promoting a safety culture that establishes opportunities to review safety systems and hazard control and to share lessons learned.

Every employee at SDG&E has the authority to stop the job or stop a task that they believe is unsafe or requires a pause for clarification regardless of level. This action is supported by management, the union, and employees throughout the company. Planning and understanding the work being performed are key to understanding and mitigating the risks associated with job site safety. They define the task description, discover what can go wrong (hazard description), how risk exposure can arise, contributing factors, consequences and hazard controls.

A job hazard analysis (JHA) or job safety analysis (JSA) is a technique used to identify the hazards/dangers of specific tasks in order to reduce the risk of injuries to workers. This analysis focuses on the relationship between the worker, the task, the tools and the work environment. Simply put, a hazard is the potential for harm often associated with a condition or activity that, if left uncontrolled, can result in injury or illness. Identifying hazards, eliminating them or controlling them as early as possible will help prevent injuries and illnesses.

In addition to eliminating, controlling and preventing hazards in the workplace, JHAs are a valuable tool for training employees about the steps required to perform their jobs safely. JHAs are often done for jobs with the highest injury or illness rates, jobs with the potential to cause severe incidents, jobs where one human error could lead to a serious incident or fatality, jobs that are new to the operation or changed, and complex jobs.

It is important to review JHAs when jobs change or if an incident occurs so that it can be updated to prevent injuries. When changes are made, or the JHA is affected by new job

methods, equipment, or procedures, for example, updates should be made, and training should be given to all employees affected by the changes.

For purposes of an RSE analysis, SDG&E looked at all existing controls, considered the average year-over-year reduction in safety incidents achieved as a result of performing these activities, and then looked at the activities within the control program, “Jobsite Safety Programs including Near Miss and Stop the Job,” expecting an additional 3.8% risk reduction. Subject matter expert judgment determined increased reporting of Near Misses and more overall education and awareness of giving all employees the authority to “Stop the Job” if work conditions appear to be hazardous, would provide an additional 3.8% reduction in risk.

**b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C11 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. SDG&E’s Jobsite Safety Programs including Near Miss and Stop the Job serve as a proactive approach to identify and address potential workplace safety and health hazards and therefore avoid Potential Consequences. SDG&E’s jobsite safety programs therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); hazards in the work environment (DT.2); unsafe operation of equipment or motor vehicles (DT.4); damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); property damage (PC.2).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.3485	
	CoRE	97.42	835.67	2066.09
	Risk Score	131.37	1126.91	2786.13
	RSE	0.39	3.30	8.17



## **12. SDG&E-3-C12: Utilizing OSHA and Industry Best Practices and Industry Benchmarking**

### **a. Description of Risk Reduction Benefits**

Benchmarking allows SDG&E to capture views from a wide range of industries, providing insight about programs that allow the Company to identify strength, opportunities and compare SDG&E's safety programs against others. This provides an opportunity to review programs, reassess or confirm the Company's approach to safety, and compare with other programs to continue moving SDG&E's safety culture and programs forward.

For purposes of an RSE analysis, SDG&E looked at all existing controls and considered the average year-over-year reduction in safety incidents achieved as a result of performing these activities. SDG&E then looked at the activities within the control program, "Utilizing OSHA and Industry Best Practices and Industry Benchmarking," and expect an additional 0.5% risk reduction. Subject matter expert judgment determined a 0.5% risk reduction was appropriate due to increased attendance throughout the organization at safety conferences and overall involvement in utility benchmarking initiatives and meetings.

### **b. Elements of the Risk Bow Tie Addressed**

SDG&E-3-C12 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. Utilizing OSHA and industry best practices and industry benchmarking helps SDG&E learn how to reduce incidents, improve the safety health of our organization and therefore reduce Potential Consequences. SDG&E's use of best practices and industry benchmarking therefore addresses the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); hazards in the work environment (DT.2); non or improper use of personal protective equipment (DT.3); unsafe operation of equipment or motor vehicles (DT.4); and damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.3056	
	CoRE	97.42	835.67	2066.09
	Risk Score	127.20	1091.08	2697.55
	RSE	0.88	7.53	18.61

**13. SDG&E-3-M1: Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional, Certified Safety Professional**

**a. Description of Risk Reduction Benefits**

Providing and requiring health and safety training helps develop a positive health and safety culture, keeps safety professionals up-to-date on regulatory safety changes, and imparts knowledge about safety systems/processes. Training is important to building a knowledge set required to support employees and management with identification of safe and at-risk behaviors. Additionally, training helps to manage risk, enhance innovation and allow employees to acquire and sharpen skill sets. Regular education and training provide the skills employees need to do their work and creates an awareness and understanding of workplace hazards and how to identify, report, control and mitigate them.

For purposes of an RSE analysis, SDG&E looked at historical safety performance results and the improvements year-over-year to calculate an overall risk reduction benefit of performing these activities. SDG&E then looked at new mitigations and expect to achieve a further risk reduction for the mitigation, “Enhanced Employee Training” of 0.1%. Subject matter expert judgment determined a 0.1% risk reduction score was appropriate due to the increased Safety training certifications required of Safety personnel (e.g., Certified Utility Safety Professional, 30-Hour OSHA, Incident Command System) and upper Management (e.g., OSHA 10-Hour).

**b. Elements of the Risk Bow Tie Addressed**

Implementation of SDG&E-3-M1 would address several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. An enhanced OSHA mandatory training program would aim to further educate and inform our employees in order to reduce Potential Consequences. SDG&E’s OSHA training enhancement would therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); hazards in the work environment (DT.2); non or improper use of personal protective equipment (DT.3); unsafe operation of equipment or motor vehicles (DT.4); and damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.2978	
	CoRE	97.423	835.67	2066.09
	Risk Score	126.44	1084.57	2681.45
	RSE	4.42	37.91	93.73

**14. SDG&E-3-M2: Enhanced Safety in Action Program**

**a. Description of Risk Reduction Benefits**

SDG&E has top-level management commitment and engagement in the development of an Enhanced Safety in Action Program, which will help SDG&E define a safety system that brings visibility to Serious Injury and Fatalities (SIF) exposure and develops a sustainable methodology for addressing and mitigating SIF precursors to help prevent SIF events.

For purposes of an RSE analysis, SDG&E looked at historical safety performance results and the improvements year-over-year to calculate an overall risk reduction benefit of performing

these activities. SDG&E then looked at new mitigations and expects to achieve a further risk reduction for the mitigation, “Enhanced Safety in Action Program” of 1.5%. In the judgment of subject matter experts, a 1.5% risk reduction score was determined as a result of the extensive training employees will receive in SIF exposure detection and mitigation.

**b. Elements of the Risk Bow Tie Addressed**

Implementation of SDG&E-3-M2 would address several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. An enhanced Safety in Action program would aim to further educate and inform our employees to reduce Potential Consequences. SDG&E’s Safety in Action program enhancement would therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); and non or improper use of personal protective equipment (DT.3). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.2796	
	CoRE	97.42	835.67	2066.09
	Risk Score	124.67	1069.37	2643.87
	RSE	3.77	32.33	79.92

**15. SDG&E-3-M3: Enhanced Employee Safe Driving Training (Vehicle Technology Programs)**

**a. Description of Risk Reduction Benefits**

SDG&E is proposing to install vehicle technology (*e.g.*, telematics) to provide a comprehensive view of the vehicle driver and fleet performance through data-driven vehicle analytics. The vehicle technology platform would be deployed in all company vehicles assigned

to employees who drive as part of their job and allow 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, vehicle monitoring devices will provide dashboard information – such as utilization, idle time, fuel usage, vehicle health, and vehicle location – which can be analyzed in real time. This mitigation would help improve employee safety by knowing vehicle whereabouts, providing opportunity for driver feedback, detouring risky driving behaviors, and detecting engine issues and fault codes, so issues can be corrected.

For purposes of an RSE analysis, SDG&E looked at historical safety performance results and the improvements year-over-year to calculate an overall risk reduction benefit of performing these activities. SDG&E then looked at new mitigations and expects to achieve a further risk reduction for the mitigation, “Enhanced Employee Safe Driving Training” of 1.2%. In the judgment of subject matter experts, the additional data received on employee driver behavior and subsequent follow up with employees that will take place, a 1.2% risk reduction score was used. Having the ability to evaluate driving behaviors by understanding data points such as hard braking, hard acceleration, hard cornering, speeding, and seatbelt use, will allow near real-time coaching from supervisors.

#### **b. Elements of the Risk Bow Tie Addressed**

Implementation of SDG&E-3-M3 would address several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. An enhanced employee safe driving training program would aim to further educate and inform our employees and therefore would address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); and unsafe operation of equipment or motor vehicles (DT.4). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); and property damage (PC.2).

**c. Summary of Results**

		<b>Low Alternative</b>	<b>Single Point</b>	<b>High Alternative</b>
<b>Pre-Mitigation</b>	<b>LoRE</b>		<b>1.299</b>	
	<b>CoRE</b>	97.42	<b>835.67</b>	2066.09
	<b>Risk Score</b>	126.57	<b>1085.65</b>	2684.13
<b>Post-Mitigation</b>	<b>LoRE</b>		<b>1.2835</b>	
	<b>CoRE</b>	97.423	<b>835.67</b>	2066.09
	<b>Risk Score</b>	125.05	<b>1072.62</b>	2651.92
	<b>RSE</b>	2.00	<b>17.14</b>	42.38

**16. SDG&E-3-M4: Implementing Findings/Results from VPP Assessments**

**a. Description of Risk Reduction Benefits**

VPP assessments are a proactive way to identify strengths and opportunities for enhancing safety. The VPP assessment results identify areas for safety improvement, is a collection point for information, creates a safety culture baseline and tracks completion of items identified for improvement. When applied to safety, the assessment reports are used as an action planning tool to take safety programs and culture beyond the Cal/OSHA minimum required standards.

This mitigation is designed to implement findings and recommendations resulting from VPP assessments. The worksite analysis of the VPP assessment will provide SDG&E with a safety and health hazard analysis. Implementing these findings would aim to reduce risk of employee safety incidents at SDG&E’s facilities and strengthen our processes. The benefits of a VPP program include not only reduction in overall injuries and illnesses, but the opportunity to set a model of excellence that can influence practices across the company.

For purposes of an RSE analysis, SDG&E looked at historical safety performance results and the improvements year-over-year to calculate an overall risk reduction benefit of performing these activities. SDG&E then looked at new mitigations and in the judgment of subject matter experts it is expected to achieve a further risk reduction for the mitigation, “Implementing Findings/Results from VPP Assessments” of 1.0%. The primary activities contributing to the

1.0% risk reduction score is the follow up and action planning occurring as a result of the items identified needing safety improvement.

**b. Elements of the Risk Bow Tie Addressed**

Implementation of SDG&E-3-M4 would address several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. By implementing findings/results from VPP assessments, SDG&E could make its workplace and facilities safer for employees in order to reduce potential consequences. OSHA’s VPP assessments are a proactive way for SDG&E to identify strengths and opportunities for enhancing safety. VPP physical inspections, document reviews, and interviews are components in this process. These assessments provide insight into baseline safety and health hazards to establish initial levels of exposures for comparison to future levels so change can be identified. Implementing findings/results and acting on results helps move safety from its current “as is” state to the desired future state. SDG&E’s VPP assessment implementation program would therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); and hazards in the work environment (DT.2). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.2861	
	CoRE	97.42	835.67	2066.09
	Risk Score	125.30	1074.80	2657.29
	RSE	3.98	34.12	84.36

## **17. SDG&E-3-M5: Energized Skills Testing and Training Yard**

### **a. Description of Risk Reduction Benefits**

Having an Energized Skills Testing and Training Yard will reduce SDG&E's risk by allowing Construction Standards Administrators to fully vet pieces of equipment both mechanically and electrically. Additional hands-on testing of energized equipment will allow for the best possible Construction Standards and Electric Standard Practices to be published while also providing invaluable hands on training to our field personnel, both of which will reduce the risk of employee injury and extended outages.

For purposes of RSE analysis, SDG&E looked at historical safety performance results and the improvements year-over-year to calculate an overall risk reduction benefit of performing these activities. SDG&E then looked at new mitigations and expects to achieve a further risk reduction for the mitigation, "Energized Skills Testing and Training Yard" of 1.0%. The primary reason for using a 1.0% risk reduction score is that the additional testing will allow for the best possible construction standards and electric standard practices to be implemented while also providing invaluable hands-on training to field personnel, which will reduce the risk of employee injury.

### **b. Elements of the Risk Bow Tie Addressed**

Implementation of SDG&E-3-M5 would address several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. Providing employees with hands-on training to test new equipment would aim to further reduce safety incidents and reduce Potential Consequences. SDG&E's energized skills training and testing yard would therefore address the following elements of the left side of the Risk Bow Tie: employees deviate from company policies or procedure (DT.1); hazards in the work environment (DT.2); non or improper use of personal protective equipment (DT.3); unsafe operation of equipment or motor vehicles (DT.4); damage to SDG&E equipment and/or infrastructure (DT.5). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1); property damage (PC.2); and operational and reliability impacts (PC.3).



**c. Summary of Results**

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.2861	
	CoRE	97.42	835.67	2066.09
	Risk Score	125.30	1074.80	2657.29
	RSE	1.49	12.79	31.63

**18. SDG&E-3-M6: Employee Wildfire Smoke Protections – Cal/OSHA Emergency Regulation**

**a. Description of Risk Reduction Benefits**

Like SDG&E’s current industrial hygiene programs, the newly adopted employee wildfire smoke protection regulations will work toward controlling workplace conditions that may cause workers' injury or illness. These programs use environmental monitoring and analytical methods to obtain the air quality index during a wildfire event. SDG&E will deploy preventative measures, including deployment of N95 respiratory masks and medical evaluations, to prevent and control potential health hazards. Developing and complying with mandatory occupational safety and health standards involves determining the extent of employee exposure to hazards and deciding what is needed to control these hazards, thereby protecting the workers. Industrial hygienists are trained to anticipate, recognize, evaluate, and recommend controls for environmental and physical hazards that can affect the health and well-being of workers.

Since SDG&E is required to fully comply with the newly adopted Employee Wildfire Smoke Protections regulations, SDG&E has not performed an RSE analysis on this mitigation because it is not feasible to stop performing the activity or calculate the risk reduction benefits received for performing it.

**b. Elements of the Bow Tie Addressed**

SDG&E has already begun implementing SDG&E-3-M6 per Cal/OSHA regulation. SDG&E-3-M6 addresses several Drivers/Triggers and Potential Consequences as outlined above in Figure 1 and in Appendix A. Providing employees with respirators and testing the AQI aims to further reduce safety incidents and reduce Potential Consequences. SDG&E's Employee Wildfire Smoke Protections address the following elements of the left side of the Risk Bow Tie: hazards in the work environment (DT.2); and non or improper use of personal protective equipment (DT.3). This program aims to reduce the following Potential Consequences of the right side of the Risk Bow Tie: serious injuries and/or fatalities (PC.1).

**VII. SUMMARY OF RISK MITIGATION PLAN RESULTS**

SDG&E's Risk Mitigation Plan takes into account recent data and trends related to Employee Safety, affordability impacts, possible labor constraints and the feasibility of mitigations. SDG&E has performed RSEs, in compliance with the SA Decision, but ultimate mitigation selection can be influenced by other factors including funding, labor resources, technology, planning, compliance requirements, and operational and execution considerations.

Table 6 below provides a summary of the Risk Mitigation Plan, including controls and mitigation activities, associated costs, and the RSEs, by tranche.

SDG&E does not account for and track costs by activity; rather, SDG&E accounts for and tracks costs by cost center and capital budget code. The costs shown in Table 6 were estimated using assumptions provided by SMEs and available accounting data.



**Table 6: Risk Mitigation Plan Summary<sup>35</sup>**

(Direct 2018 \$000)<sup>36</sup>

ID	Mitigation/Control	Tranche	2018 Baseline Capital <sup>37</sup>	2018 Baseline O&M	2020-2022 Capital <sup>38</sup>	2022 O&M <sup>39</sup>	Total <sup>40</sup>	RSE <sup>41</sup>
SDG&E-3-C1	Mandatory employee health and safety training programs and standardized policies	T1	0	560	0	530-640	530-640	-
SDG&E-3-C2	Drug and alcohol testing program	T1	0	230	0	220-270	220-270	-
SDG&E-3-C3	Safety Culture	T1	0	310	0	300-360	300-360	4.58 – 97.03

<sup>35</sup> 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.

<sup>36</sup> The figures provided are direct charges and do not include company loaders, with the exception of vacation and sick. The costs are also in 2018 dollars and have not been escalated to 2019 amounts.

<sup>37</sup> Pursuant to D.14-12-025 and D.16-08-018, the Company provides the 2018 “baseline” capital costs associated with Controls. The 2018 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.

<sup>38</sup> The capital presented is the sum of the years 2020, 2021, and 2022, or a three-year total. Years 2020, 2021 and 2022 are the forecast years for SDG&E’s Test Year 2022 GRC Application.

<sup>39</sup> As previously stated, internal labor (*e.g.*, employee time spent to complete training courses, employee time spent to perform inspections) are not included in SDG&E’s O&M cost forecasts since these costs would rely on cost assumptions (*e.g.*, number of employees, x length of training course, x average hourly wage). Further, SDG&E does not track labor in this manner and thus would not be able to include such internal labor costs in future spending accountability reports.

<sup>40</sup> Total = 2020, 2021 and 2022 Capital + 2022 O&M amounts.

<sup>41</sup> The RSE ranges are further discussed in Chapter RAMP-C and Section VI above.

ID	Mitigation/Control	Tranche	2018 Baseline Capital <sup>37</sup>	2018 Baseline O&M	2020-2022 Capital <sup>38</sup>	2022 O&M <sup>39</sup>	Total <sup>40</sup>	RSE <sup>41</sup>
SDG&E-3-C4	Employee Behavior Based Safety (BBS) program	T1	0	760	0	690-830	690-830	2.47 – 52.36
SDG&E-3-C5	A comprehensive Environmental & Safety Compliance Management Program (ESCMP) <sup>42</sup>	T1	0	0	0	0	0	-
SDG&E-3-C6	Employee safety training and awareness programs	T1	0	240	0	230-280	230-280	-
SDG&E-3-C7	Employee wellness programs	T1	0	730	0	690-840	690-840	1.31 – 27.73
SDG&E-3-C8	OSHA Voluntary Protection Program (VPP) assessments	T1	0	50	0	40-50	40-50	8.52 – 180.77
SDG&E-3-C9	Safe driving programs	T1	0	270	0	290-350	290-350	1.98 – 41.90
SDG&E-3-C10	Personal Protection Equipment (PPE)	T1	1,500	730	0	1,200-1,400	1,200-1,400	-

<sup>42</sup> Internal labor costs to take training or perform inspections as part of this program were not captured as part of this RAMP Report. Since no costs were identified, an RSE analysis was not performed.

ID	Mitigation/Control	Tranche	2018 Baseline Capital <sup>37</sup>	2018 Baseline O&M	2020-2022 Capital <sup>38</sup>	2022 O&M <sup>39</sup>	Total <sup>40</sup>	RSE <sup>41</sup>
SDG&E-3-C11	Jobsite Safety Programs including Near Miss and Stop the Job	T1	7,300	8,970	6,500-7,900	9,000-11,000	15,500-18,900	0.39 – 8.17
SDG&E-3-C12	Utilizing OSHA and industry best practices and industry benchmarking	T1	0	680	0	650-780	650-780	0.88 – 18.61
SDG&E-3-M1	Enhanced Mandatory Employee Training (OSHA): Certified Occupational Safety Specialist, Certified Utility Safety Professional, Certified Safety Professional	T1	0	0	0	25 - 30	25- 30	4.42 – 93.73
SDG&E-3-M2	Safety in Action Program Enhancement	T1	0	0	0	450-550	450-550	3.77 – 79.92
SDG&E-3-M3	Enhanced Employee Safe Driving Training (Vehicle Technology Programs)	T1	0	0	1,900-2,300	50-60	1,950-2,360	2.00 – 42.38
SDG&E-3-M4	Implementing findings from VPP program assessments	T1	0	0	290-350	0	290-350	3.98 – 84.36
SDG&E-3-M5	Energized Skills Testing and Training Yard	T1	0	0	760-920	0	760-920	1.49 – 31.63
SDG&E-3-M6	Employee Wildfire Smoke Protections– Cal/OSHA emergency regulation	T1	0	0	0	30-60	30-60	-

ID	Mitigation/Control	Tranche	2018 Baseline Capital <sup>37</sup>	2018 Baseline O&M	2020-2022 Capital <sup>38</sup>	2022 O&M <sup>39</sup>	Total <sup>40</sup>	RSE <sup>41</sup>
<b>TOTAL COST</b>			<b>8,800</b>	<b>14,000</b>	<b>9,500- 11,000</b>	<b>14,000 – 18,000</b>	<b>24,000 – 29,000</b>	-

It is important to note that SDG&E is identifying potential ranges of costs in this Risk Mitigation Plan and is not requesting funding herein. SDG&E will integrate the results of this proceeding, including requesting approval of the activities and associated funding, in the next GRC.

SDG&E notes that there are activities related to this Employee Safety risk that will be carried over to the GRC for which the costs are primarily internal labor (*e.g.*, employee time spent for internal training, performing inspections or monitoring). The costs associated with these internal labor activities are not captured in this chapter because SDG&E does not currently track labor in this manner. The inclusion of these internal labor costs in SDG&E’s TY 2019 RAMP Report required the use of assumptions. Additionally, since these costs are not tracked, it would impede SDG&E’s ability to report in future spending accountability reports. These activities are continuing to be performed but, as a result of the exclusion of internal labor, forecasted costs for these activities may appear lower in this 2019 RAMP Report. The activities related to this risk that have not captured internal labor costs are:

- SDG&E-3-C1: Mandatory employee health and safety training programs and standardized policies;
- SDG&E-3-C3: Safety culture;
- SDG&E-3-C5: A comprehensive Environmental & Safety Compliance Management Program;
- SDG&E-3-C9: Safe driving programs; and
- SDG&E-3-C11: Jobsite Safety Programs including Near Miss and Stop the Job.

SDG&E is not calculating RSEs on the following activities:

**Table 7: Summary of RSE Analysis**

<b>Control/Mitigation ID</b>	<b>Control/Mitigation Name</b>	<b>Reason for No RSE Calculation</b>
SDG&E-3-C1	Mandatory Employee Health and Safety Training Programs and Standardized Policies	Mandated compliance activity per Cal. Labor Code § 6400, 8 CCR § 8350, CPUC EMF policy (D.93-11-013, D.06-01-042).
SDG&E-3-C2	Drug and Alcohol Testing Program	Mandated compliance activity per 41 USC § 81, 49 CFR Parts 40, 192, 193, 195, 199 and 382.
SDG&E-3-C5	A Comprehensive Environmental & Safety Compliance Management Program	No costs identified; the program itself does not provide any risk reduction benefit without the associated activities captured elsewhere.



SDG&E-3-C6	Employee Safety Training and Awareness Programs	Mandated compliance activity per 29 CFR Part 1910 <i>et. seq.</i>
SDG&E-3-C10	Personal Protection Equipment	Mandated compliance activity per 29 CFR Part 1910 <i>et. seq.</i>

### VIII. ALTERNATIVE MITIGATION PLAN ANALYSIS

Pursuant to D.14-12-025 and D.16-08-018, SDG&E considered alternatives to the Risk Mitigation Plan for the Employee Safety 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 Mitigation Plan also took into account modifications to the plan and constraints, such as budget and resources.

#### A. SDG&E-3-A1: Alert Driving Pilot Program Deployment

SDG&E piloted an Alert Driving training course. It is an online driver training to proactively improve driver behavior. High Definition video is shot on-location to show real and familiar traffic hazards that employees must identify. One module per month is assigned to employees based on the areas in which they need the most improvement, followed by the areas in which they have the most driving competency. For the pilot, SDG&E had 35 employees involved in the training program from across the organization. In order to assess the training effectiveness and value in a reasonably quick period, the vendor has agreed to issue training modules on a weekly basis, instead of monthly. Given the forecasted cost to deploy this new Alert Driver training to all SDG&E employees who currently are assigned safe drivers training on an annual basis, SDG&E is not proposing this training in its Risk Mitigation Plan at this time but is continuing to evaluate new and cost-effective ways to improve our drivers training program.



### 1. Summary of Results

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.2926	
	CoRE	97.42	835.67	2066.09
	Risk Score	125.93	1080.22	2670.71
	RSE	0.12	1.02	2.53

### B. SDG&E-3-A2: Safety Standards/Presentations Refresh

While the regulatory requirements are met with SDG&E’s current safety standards, we have safety standards such as electrical safety (total of 7 standards) that have overlapping or duplicative content. Also, some of the safety and industrial hygiene training presentations may need to be updated and enhanced. There is a need to merge duplicative subjects, reduce the number of applicable safety standards and modernize some of the safety and industrial hygiene training presentations. This requires hiring an instructional designer (vendor) for a 9-12-month period. As such, SDG&E is not currently proposing to include this project in its Risk Mitigation Plan but will continue to evaluate this proposal to maintain the effectiveness of SDG&E’s safety standards and presentations.

### 1. Summary of Results

		Low Alternative	Single Point	High Alternative
Pre-Mitigation	LoRE		1.299	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.57	1085.65	2684.13
Post-Mitigation	LoRE		1.2978	
	CoRE	97.42	835.67	2066.09
	Risk Score	126.44	1084.57	2681.45
	RSE	0.99	8.53	21.09

**Table 8: Alternative Mitigation Summary**

(Direct 2018 \$000)<sup>43</sup>

ID	Mitigation	2020-2022 Capital <sup>44</sup>	2022 O&M	Total <sup>45</sup>	RSE <sup>46</sup>
SDG&E-3-A1	Alert Driving Pilot Program Deployment	0	4,000 – 6,000	4,000 – 6,000	0.12 – 2.53
SDG&E-3-A2	Safety Standards/Presentations Refresh	0	100-140	100-140	0.99 – 21.09

<sup>43</sup> The figures provided are direct charges and do not include company loaders, with the exception of vacation and sick. The costs are also in 2018 dollars and have not been escalated to 2019 amounts.

<sup>44</sup> The capital presented is the sum of the years 2020, 2021, and 2022, or a three-year total.

<sup>45</sup> Total = 2020, 2021 and 2022 Capital + 2022 O&M amounts.

<sup>46</sup> RSE ranges are further discussed in Chapter RAMP-C and Section VI above.



## **APPENDIX A: SUMMARY OF ELEMENTS OF THE RISK BOW TIE**

### Employee Safety: Summary of Elements of the Risk Bow Tie

ID	Control/Mitigation Name	Elements of the Risk Bow Tie Addressed
SDG&E-3-C1	Mandatory employee health and safety training programs and standardized policies	DT.1, DT.3 DT.4 PC.1, PC.2
SDG&E-3-C2	Drug and alcohol testing program	DT.1, DT.3, DT.4, DT.5, PC.1, PC.2, PC.3, PC.4, PC.5, PC.6
SDG&E-3-C3	Safety culture	DT.1, DT.3, DT.4 PC.1, PC.2, PC.6
SDG&E-3-C4	Employee Behavior Based Safety (BBS) program	DT.1, DT.2, DT.3, DT.4, DT.5 PC.1, PC.2
SDG&E-3-C5	A comprehensive Environmental & Safety Compliance Management Program (ESCMP)	DT.1, DT.2, DT.3, DT.4, DT.5
SDG&E-3-C6	Employee safety training and awareness programs	DT.1, DT.2, DT.3, DT.4, DT.5 PC.1
SDG&E-3-C7	Employee wellness programs	DT.3 PC.1
SDG&E-3-C8	OSHA Voluntary Protection Program (VPP) assessments	DT.1, DT.2 PC.1
SDG&E-3-C9	Safe driving programs	DT.1, DT.4 PC.1, PC.2
SDG&E-3-C10	Personal protection equipment	DT.3 PC.1
SDG&E-3-C11	Jobsite Safety Programs including Near Miss and Stop the Job	DT.1, DT.2, DT.4, DT.5 PC.1, PC.2
SDG&E-3-C12	Utilizing OSHA and industry best practices and industry benchmarking	DT.1, DT.2, DT.3, DT.4, DT.5 PC.1
SDG&E-3-M1	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 PC.1
SDG&E-3-M2	Safety in Action Program Enhancement	DT.1, DT.3 PC.1
SDG&E-3-M3	Enhanced employee safe driving training (Vehicle Technology Programs)	DT.1, DT.4 PC.1, PC.2



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SDG&E-3-M4	Implementing findings from VPP program assessments	DT.1, DT.2 PC.1
SDG&E-3-M5	Energized Skills Training and Testing Yard	DT.1, DT.2, DT.3, DT.4, DT.5 PC.1, PC.2, PC.3
SDG&E-3-M6	Employee Wildfire Smoke Protections – Cal/OSHA emergency regulation	DT.2, DT.3 PC.1