



Risk Assessment and Mitigation Phase

(Chapter SDG&E-Risk-4)

Incident Involving a Contractor

May 17, 2021

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	Risk Overview	2
B.	Risk Definition.....	3
C.	Scope.....	3
II.	RISK ASSESSMENT	4
A.	Risk Bow Tie and Risk Event Associated with the Risk	4
B.	Cross-Functional Factors	5
C.	Potential Drivers/Triggers.....	5
D.	Potential Consequences of Risk Event	7
E.	Risk Score	8
III.	2020 CONTROLS	8
A.	Control 1 - Contractor Oversight Program	9
B.	Control 2 - Field Safety Oversight.....	12
1.	Administration and Tools	13
2.	Stop the Job.....	13
3.	Near Miss/Close Call Reporting Program	14
C.	Control 3 - Safety Culture.....	14
IV.	2022-2024 CONTROL & MITIGATION PLAN.....	15
A.	Changes to 2020 Controls.....	15
B.	2022 – 2024 Mitigations	16
1.	Mitigation 1- Enterprise-Wide Contractor Incident and Schedule Management.....	16
2.	Mitigation 2 – Enhanced Verification of Class 1 Contractor Employee Specific Training.....	16
V.	COSTS, UNITS, AND QUANTITATIVE SUMMARY TABLES	17
VI.	ALTERNATIVES.....	19
A.	Alternative 1 - SAP Contractor Incident Portal	20
B.	Alternative 2 - Use internal resources and tools to vet contractors for safety	20
	APPENDIX A: SUMMARY OF ELEMENTS OF THE RISK BOW TIE.....	A-1
	APPENDIX B: QUANTITATIVE ANALYSIS SOURCE DATA REFERENCES	B-1

RISK: INCIDENT INVOLVING A CONTRACTOR

I. INTRODUCTION

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

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

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

¹ 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.

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

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

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

A. Risk Overview

SDG&E relies on support from its contractors to perform a significant amount of construction related work on its electric and gas infrastructure assets located throughout its service territory. Such work is frequently performed in public space and is impacted by external factors, such as vehicular traffic in populated areas. Contractors support SDG&E during normal operating conditions as well as during emergency situations resulting from events, such as wildfires, Public Safety Power Shutoff’s (PSPS), Red Flag Warnings (RFW) and other emergency events.

SDG&E has many safety-related policies and procedures for contractors to follow. There are myriad instances that could implicate this risk, including:

³ *Id.* at 16.

⁴ *Id.* at 17.

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

- Failure of a contractor to adhere to an OSHA Regulation or Company safety policy or procedure could result in a safety-related event involving serious injuries and/or fatalities while conducting work on behalf of the Company.
- Contractors failing to report safety incidents, including serious near misses, and sharing lessons learned from such incidents with SDG&E, can result in a reoccurrence of the incident with potentially more adverse results.
- Driving distractions due to increased vehicles on the road and/or use of mobile technology may result in more vehicle related incidents.
- Personnel turnover and movement within the contracting industry impacting availability of experienced workers and resulting impact on safety.

To address the potential risk drivers and consequences, SDG&E has implemented strong oversight and controls as part of its contractor safety program, such as by developing and implementing a Contractor Safety Manual, establishing a third-party vetting process requiring membership in ISNetworld (a vendor platform for contractor management services), to pre-qualifying contractors on safety practices, and engaging with contractors to strengthen the sharing of best safety practices. The purpose of implementing strong controls and mitigations to oversee contractors is to enhance the safety of SDG&E construction projects from inception to completion.

B. Risk Definition

For purposes of this RAMP Application, SDG&E’s Contractor Incident risk is defined as the risk of a safety event, caused by a contractor or subcontractor not following safety standards and/or procedures, which results in serious injuries and/or fatalities while conducting work on behalf of the Company.

C. Scope

Table 1 below provides what is considered in scope for the Contractor Incident risk in this RAMP Application.

Table 1: Risk Scope

In-Scope:	The risk of a work-related – as defined by Occupational Safety and Health Administration (OSHA) – safety incident involving a Class 1 Contractor(s) that causes serious injuries or fatalities while conducting work on behalf of SDG&E. SDG&E is focusing its enhanced Contractor Safety Program on Class 1 Contractors. Class 1 Contractors are:
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	<p><i>“A Class 1 Contractor is a contractor engaged to perform work that can reasonably be anticipated to expose the Contractor’s employees, Subcontractors, SDG&E employees, or the general public to one or more hazards that have the potential to result in Serious Safety Incident. Examples of a Class 1 Contractor include contractors performing work involving energized equipment or hazardous chemicals.”</i></p>
<p>Data Quantification Sources:</p>	<p>Company data and SME judgement See Appendix B for additional information.</p>

II. RISK ASSESSMENT

In accordance with the Settlement Decision,⁶ this section describes the risk bow tie, possible drivers/triggers, potential consequences, and the risk score for the Contractor Incident risk.

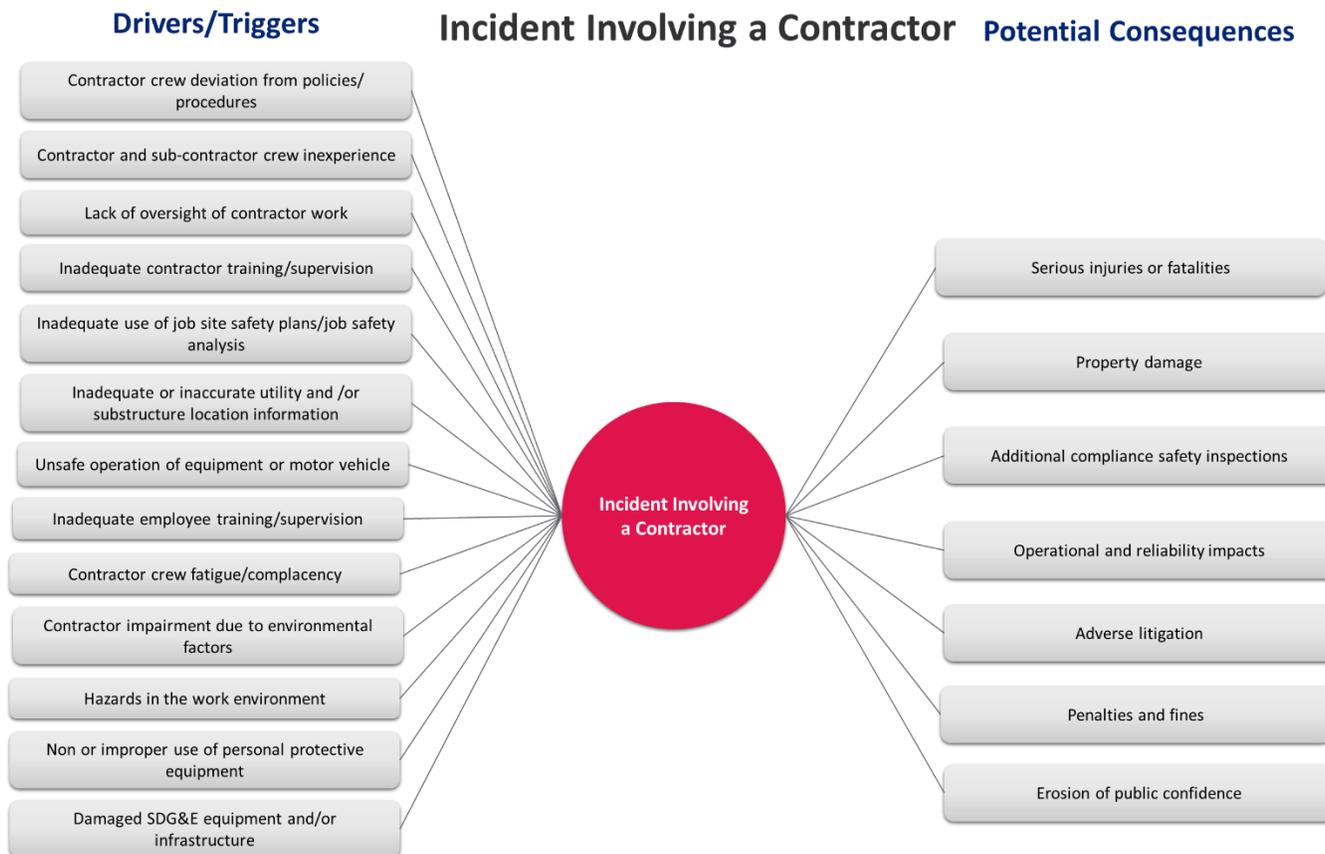
A. Risk Bow Tie and Risk Event Associated with the Risk

The risk bow tie is a commonly used tool for risk analysis, and the Settlement Decision⁷ instructs the utility to include a risk bow tie illustration for each risk included in RAMP. As illustrated in the risk bow tie shown below in Figure 1, the risk event (center of the bow tie) is an incident involving a contractor, the left side of the bow tie illustrates drivers/triggers that lead to the risk of a Contractor Incident, and the right side shows the potential consequences of the risk of Contractor Incident. SDG&E applied this framework to identify and summarize the information provided in Figure 1. A mapping of each mitigation to the element(s) of the risk bow tie addressed is provided in Appendix A.

⁶ D.18-12-014 at 33 and Attachment A, A-11 (“Bow Tie”).

⁷ *Id.* at Attachment A, A-11 (“Bow Tie”).

Figure 1: Risk Bow Tie



B. Cross-Functional Factors

There are two cross-functional factors that may influence this risk: Safety Management System, and Emergency Preparedness and Response and Pandemic cross-functional factors. In addition, Company Safety Culture can also play a role with this risk. The activities that are described in those chapters play a role in helping reduce the risk of a Contractor Incident. For example, a strong safety culture could reinforce and further emphasize the need for compliance with many of the controls and mitigations presented within this risk chapter.

C. Potential Drivers/Triggers⁸

The Settlement Decision⁹ instructs the utility to identify which element(s) of the associated risk bow tie each mitigation addresses. When performing the risk assessment for the

⁸ An indication that a risk could occur. It does not reflect actual or threatened conditions.

⁹ D.18-12-014 at Attachment A, A-11 (“Bow Tie”).

Contractor Incident risk, SDG&E identified potential leading indicators, referred to as drivers or triggers. These include, but are not limited to:

- **DT.1 – Contractor crew deviation from policies/procedures:** SDG&E has many safety-related policies and procedures for employees and contractors to follow. Failure of a contractor to adhere to a company safety policy or procedure could result in a safety-related event.
- **DT.2 – Contractor and sub-contractor crew inexperience:** Contractors and sub-contractors used by SDG&E are expected to hire experienced employees to perform the work required. Failure of contractors to hire and utilize experienced employees for their work may lead to a safety-related event.
- **DT.3 – Lack of oversight of contractor work:** Oversight by SDG&E is an integral part of managing work performed by contractors, not only from a work quality perspective, but also to verify that safe work practices are being followed. A lack of oversight of a contractor's work can lead to departures from safe work practices and result in a safety-related event.
- **DT.4 – Inadequate contractor training/supervision:** SDG&E expects its contractors and subcontractors to provide training to and to supervise their employees to reduce the likelihood of an incident. Inadequate training or the lack of sufficient supervision can be a cause of a safety-related event.
- **DT.5 – Inadequate use of job site safety plans/job safety analysis:** Insufficient knowledge of the work environment or improper planning for potential job hazards may lead to contractors sustaining safety-related event while on the job.
- **DT.6 – Inadequate or inaccurate utility and /or substructure location information:** Contractors need to have the proper information about the assets or systems they work on for the benefit of SDG&E. Inadequate or inaccurate utility and/or substructure information can lead to safety-related events to contractor employees.
- **DT.7 – Unsafe operation of equipment or motor vehicle:** Contractors may utilize their own company vehicles and equipment, or vehicles and equipment owned by SDG&E. The unsafe operation of such may lead to a safety-related event.

- **DT.8 – Inadequate employee training/supervision:** Contractors working without appropriate training or adequate supervision.
- **DT.9 – Contractor crew fatigue/complacency:** Contractors working excessive hours can create unsafe work environments. Also, complacency may reduce the level of awareness to hazards which can lead to a safety-related event.
- **DT.10 – Contractor impairment due to environmental factors:** Factors such as heat, night work, high-risk work locations (e.g. busy roadways), etc., may lead a contractor to become impaired, and as a result increase the likelihood of a safety-related event.
- **DT.11 – Hazards in the work environment:** Unsafe work environments, including work locations, roadways and parking places, customer premises, gas equipment condition, Polychlorinated Biphenyls (PCB), lead from paint, asbestos, and fumigation chemicals, for example, could lead to a safety-related event.
- **DT.12 – Non or improper use of personal protective equipment:** Contractors working without personal protective equipment (PPE) or performing work with the incorrect PPE may lead to a safety-related event.
- **DT.13 – Damaged 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-related incident.

D. Potential Consequences of Risk Event

Potential consequences¹⁰ are listed to the right side of the risk 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:

- PC.1 - Serious injuries or fatalities
- PC.2 - Property damage
- PC.3 - Additional compliance safety inspections
- PC.4 - Operational and reliability impacts
- PC.5 - Adverse litigation

¹⁰ D.18-12-014 at 16 and Attachment A, A-8 (“Identification of Potential Consequences of Risk Event”).

- PC.6 - Penalties and fines
- PC.7 - Erosion of public confidence

These potential consequences were used in the scoring of the Contractor Incident risk that occurred during the development of SDG&E’s 2020 Enterprise Risk Registry.

E. Risk Score

The Settlement Decision requires a pre- and post-mitigation risk calculation.¹¹ Chapter RAMP-C of this RAMP Application explains the Risk Quantitative Framework which underlies this Chapter, including how the Pre-Mitigation Risk Score, Likelihood of Risk Event (LoRE), and Consequence of Risk Event (CoRE) are calculated.

Table 2: Pre-Mitigation Analysis Risk Quantification Scores¹²

	LoRE	CoRE	Risk Score
Contractor Incident	1.83	1,033	1,894

Pursuant to Step 2A of the Settlement Decision, the utility is instructed to use actual results, as well as available and appropriate data.¹³

SDG&E used company data to model the uncertainty of safety frequency and consequences and used SME judgment to model financial and stakeholder satisfaction. SDG&E used a Monte Carlo methodology to yield a probability distribution of safety and stakeholder satisfaction results per year. Specific data sources and other supporting material will be provided in workpapers.

III. 2020 CONTROLS

This section “[d]escribe[s] the controls or mitigations currently in place” as required by the Settlement Decision.¹⁴ The activities in this section were in place as of December 31, 2020. Controls that will continue as part of the plan are addressed in Section IV.

¹¹ D.18-12-014 at Attachment A, A-11 (“Calculation of Risk”).

¹² The term “pre-mitigation analysis,” in the language of the S-MAP Settlement Agreement 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.

¹³ *Id.* at Attachment A, A-8 (“Identification of Potential Consequences of Risk Event”).

¹⁴ S-MAP Settlement Agreement Decision at 33.

A. Control 1 - Contractor Oversight Program

The Contractor Oversight Program is the overall program used by SDG&E to assess and educate contractors with respect to safety protocols. This program is primarily run by the Contractor Safety Services (CSS) Department. CSS's main objective is to ensure the Class 1 Contractors engaged with SDG&E are working safely and risk is being managed effectively. The CSS team is made up of both internal and contracted resources to support the various activities to ensure contractors are working safely. SDG&E business units also have field safety oversight responsibilities for all construction work being performed by Class 1 Contractors working for their respective groups (*see* Control 2).

With respect to internal resources, SDG&E institutes a number of safeguards that all contracted work is performed in accordance with SDG&E standards, OSHA regulations, applicable laws, Commission Orders (such as General Order (GO) 95, Rules for Overhead Electric Line Construction and GO 128 Rules for Construction of Underground Electric Supply and Communications Systems). The safeguards can include:

- Adherence to the Contractor Safety Program Standard for SDG&E, and the Class 1 Contractor's Safety manual for contractors to ensure each group is adhering to the same requirements and/or standards.
- Administrative activities associated with Class 1 work such as education on the program requirements to our contractors and internal resources, assisting in obtaining program compliance, and following up with contractors that fall out of compliance.
- Pre-qualification of all Class 1 Contractors according to SDG&E's Contractor Safety program.
 - o Contractors that meet the criteria targets in the table below are granted points toward an overall compliance grade from SDG&E's third-party administrator.
 - o Contractors that fall below the criteria targets do not receive points toward an overall compliance grade from SDG&E's third-party administrator.

Criteria	Target	Below Target
3-Year TRIR (Total Recordable Incident Rate)	Equal to or less than BLS industry average for applicable NAICS code	Greater than BLS industry average for applicable NAICS code
3-Year DART (Days Away Restricted/Transfer Rate)	Equal to or less than BLS industry average for applicable NAICS code	Greater than BLS industry average for applicable NAICS code
EMR (Experience Modification Rate)*	Equal to or less than 1.1	Greater than 1.1
5 -Year Fatality Data	Zero (0) fatalities within the last five (5) years	One (1) or more fatalities within the last five (5) years
5-Year Non-Fatal, Serious Safety Incident Data (e.g., life altering/life threatening, including incidents affecting the public)	Zero (0) non-fatal, serious safety incidents within the last five (5) years	One (1) or more non-fatal, serious safety incidents within the last five (5) years
3-Year OSHA Serious, Willful, or Repeat Citations	Zero (0) serious, willful, or repeat OSHA citations within the last three (3) years	One (1) or more serious, willful, or repeat citations within the last three (3) years
3-Year OSHA Non-Serious Citations	Zero (0) non-serious OSHA citations within the last three (3) years	One (1) or more non-serious citations within the last three (3) years
Written Safety Programs	Company has comprehensive written safety programs that are in compliance with environmental, health, and safety laws and regulations and are specific to the hazards associated with the work to be performed	Company does not have comprehensive written safety programs that are in compliance with environmental, health, and safety laws and regulations and are specific to the hazards associated with the work to be performed
Drug and Alcohol Plan	Company has a comprehensive written drug and alcohol plan that is in compliance with applicable laws and regulations	Company does not have a comprehensive written drug and alcohol plan that is in compliance with applicable laws and regulations
Subcontractor Management Plan	Company has a written plan to monitor subcontractors and hold them accountable for the same requirements as themselves	Company does not have a written plan to monitor subcontractors and hold them accountable for the same requirements as themselves
Employee Disciplinary Action Plan	Company has a written employee disciplinary action plan	Company does not have a written employee disciplinary action plan
Safety Culture Evaluation	Company has a positive safety culture that it is working to advance	Company does not have a positive safety culture that it is working to advance

* **Experience modification rate (EMR)** is a number insurance companies use to represent a business' prior workers' comp claims and potential for future injuries.

- Requiring Pre-Work Safety Meeting Notices and Acknowledgement Forms. Notifications to contractors of known hazards, followed by meetings with contractors to discuss hazards and mitigations that are jointly acknowledged before performing work.
- All new and existing contracts and Master Service Agreements (MSAs) between SDG&E and a primary contractor includes a reference to SDG&E's Class 1 Contractor Safety Manual and states it is a requirement to follow as part of the contract terms and conditions.

SDG&E currently uses certain third-party administration tools to verify that contractors comply with SDG&E's established safety requirements according to the Class 1 Contractor Safety Manual and the contractual requirements. SDG&E currently uses Predictive Solutions for safety observations and Veriforce for gas operator qualifications as third-party software administration tools to monitor risk in a more cost-effective manner than has been found utilizing an internal workforce.

Veriforce is a third-party vendor that offers comprehensive solutions for Operator Qualifications (OQ), Drug & Alcohol (D&A), Training, Auditing, and Consulting programs to Operators and contractors nationwide. In 2012, SDG&E partnered with Veriforce to manage all gas contractors' OQ and D&A programs. The Veriforce partnership allows SDG&E to improve the overall OQ program for gas contractors by requiring them to abide by a common OQ program and tracks their D&A status to maintain compliance. Some key features of using the Veriforce system are: the ability for contractors to have proof of qualifications on the job site, the ability to track qualification failures, and visibility to the D&A status of each contractor company and its employees.

SDG&E partnered with Veriforce in response to increased scrutiny and auditing by internal and/or external parties of the OQ and D&A programs which revealed inconsistencies among contractors. Veriforce provided SDG&E with solutions to address these audit findings and improved the OQ and D&A programs by implementing an electronic platform for testing and an electronic database for tracking this data. The Veriforce platform also allows for portability of qualifications between SDG&E and Southern California Gas Company.

SDG&E uses a third-party administrator, ISNetworld, to house and verify the established SDG&E pre-qualification requirements for our Class 1 Contractors. It contains historical safety

related performance for all Class I contractors who perform work for SDG&E. ISNetworld also gives SDG&E a place to communicate with our contractors, including:

- Communication of new rules, regulations and requirements;
- Reports from contractors on SDG&E specific incidents and hours in order for SDG&E to track and trend performance;
- A bulletin board that houses documents communicated to all connected contractors; and
- An action item tool for targeted communications to specific contractors.

ISNetworld monitors new and changing OSHA requirements and verifies SDG&E's Class 1 Contractors meet minimum OSHA requirements for written safety programs for the work performed and grades Class 1 Contractors according to the pre-qualification criteria SDG&E establishes. The main elements in the scoring criteria of pre-qualification collected by ISNetworld are:

- The nationwide review of the three previous years of Total Recordable Incident Rate (TRIR);
- The nationwide review of the three previous years of Days Away Restricted or Transfer Rate (DART);
- Previous year Experience Modification Rate (EMR);
- Previous 5-year fatalities review;
- Previous 5-year Serious Safety Incidents (SSI) review;
- Written safety program reviews according to the work type(s) performed; and
- Safety Culture questionnaire review.

The nationwide-level data captured by the third-party administration program is reviewed by SDG&E to standardize the pre-qualification process as well as for selection of Class 1 Contractors.

B. Control 2 - Field Safety Oversight

SDG&E's CSS oversees safety for all business units that use Class 1 Contractors. CSS's contracted safety professionals perform field level safety assessments on Class 1 Contractors who perform work on behalf of SDG&E.

Duties of CSS with respect to field safety oversight include but are not limited to:

- Safety inspections/observations: This is a proactive measure to observe contractors are working in accordance with appropriate work methods. If at-risk behaviors are identified they are documented, tracked, and corrected.
- Incident/Near Miss response, review, and investigation: When an incident occurs, a CSS Team Lead dispatches the appropriate individual to document the incident initial findings. Initial findings are used in conjunction with reviewing contractors' incident reports to ensure accuracy.
- Pre-work safety meetings: Contracted safety professionals perform jobsite reviews with all parties involved to identify and agree with potential hazards and mitigations prior to work starting and also review site specific safety plans when SDG&E requires contractors to submit them.
- Post-Job evaluations: SDG&E construction team conducts post major project or annual jobsite performance reviews of contractors. This review has the ability to affect a contractor's qualification status and ability to continue working with SDG&E.

Additionally, SDG&E has a variety of administration tools and programs to support the safety oversight of Class 1 Contractors as described below.

1. Administration and Tools

Predictive Solutions is used by SDG&E as the primary software application for safety observations of Class 1 Contractors. This customizable tool can house a specifically designed safety observation form for each business unit in order to capture all relevant data. There is also a core group of questions that is used to track and trend safety contractor observations enterprise wide. Predictive Solutions allows SDG&E to easily collect safety observations, track and trend, then communicate the results of observations in a clear format so SDG&E can potentially mitigate at-risk behaviors or incidents.

2. Stop the Job

The Stop the Job (STJ) Process is a protocol SDG&E has established for all contractors. It gives authority to everyone onsite to stop a job or task if an unsafe work condition or activity is identified. All work must immediately cease in the area of concern once the STJ is declared until site supervision and the involved contractor(s) have done an investigation, the identified

situation is abated, controlled, or otherwise determined to be safe, and the situation and outcome are explained to effected personnel.

3. Near Miss/Close Call Reporting Program

SDG&E requires its contractors to report all incidents per the Class 1 Contractor Safety Manual including Near Miss/Close Call incidents immediately, then monthly in a report. This information is then tracked and used during SDG&E's Class 1 Contractor safety observations and also communicated out to contractors, if applicable.

SDG&E defines a Near Miss/Close Call as follows:

- Non-Serious Near Miss: A work-connected incident in which property damage less than \$50,000 or an injury or illness (other than a Serious Safety Incident) could have occurred but did not.
- Serious Near Miss: A work-connected incident in which property damage, a spill/release resulting in damages of \$50,000 or more, or a Serious Safety Incident could have occurred but did not.

C. Control 3 - Safety Culture

SDG&E strives to ensure a positive safety culture with our contractors through outreach, education, and leading the way. Our drive to improve starts with our company culture and the way we do business. SDG&E not only has established touchpoints throughout the year with our contractors but identifies items during the year where collaboration or improvement should be reviewed and implements mitigation measures for any identified potential gaps.

The Annual Contractor Safety Summit and Contractor Safety Quarterly Meetings are particular events that create a forum to share industry leading best practices with our contractors, communicate new requirements, give our contractors the opportunity to collaborate with SDG&E on safety, and foster an improved safety culture for contractors and SDG&E. The Contractor Safety Summit is a broad-scoped meeting with focused attendance from SDG&E and Class 1 Contractor Executives and Management. The quarterly safety meeting are attended by SDG&E and Class 1 Contractor Executives and Management, but field-level personnel are also encouraged to attend.

SDG&E engages our internal workforce and Class 1 Contractors with periodic safety culture assessments to better gauge where we are with our culture and maturity of the SDG&E

Contractor Safety Program. The results of these assessments are used for action planning and upcoming initiatives targeted to improve safety and cultural gaps.

IV. 2022-2024 CONTROL & MITIGATION PLAN

This section contains a table identifying the controls and mitigations comprising the portfolio of mitigations for this risk.¹⁵ Controls and mitigations in the Contractor Incident risk have the same risk profile; thus, they are not further trached.

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

Table 3: Control and Mitigation Plan Summary

Line No.	Control/Mitigation ID	Control/Mitigation Description	2020 Controls	2022-2024 Plan
1	C1	Contractor Oversight Program	X	X
2	C2	Field Safety Oversight	X	X
3	C3	Safety Culture	X	X
4	M1	Enterprise-Wide Contractor Incident and Schedule Management	No	X
5	M2	Enhanced Verification of Class 1 Contractor Employee Specific Training	No	X

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

A. Changes to 2020 Controls

The Contractor Oversight Program (C1) and the Field Safety Oversight (C2) controls discussed above have been expanded in 2021 to reflect implementation on an enterprise-wide

¹⁵ See D.18-12-014, Attachment A at A-14 (“Mitigation Strategy Presentation in the RAMP and GRC”).

basis into all business units that use Class 1 Contractors. Additional contracted resources have been added to the Contractor Oversight Program (C1) to support the additional data received by new Class 1 Contractors and business units in order to pre-qualify, process, track, trend, and communicate safety data. Additional safety professionals have been contracted to support Field Safety Oversight (C2) to support the additional business units that are using Class 1 Contractors.

B. 2022 – 2024 Mitigations

1. Mitigation 1- Enterprise-Wide Contractor Incident and Schedule Management

During the expansion of the SDG&E Contractor Safety Program it was determined that certain business units that used Class 1 Contractors did not have enough work to support having a dedicated resource to manage contractor incidents or schedules. Because of the number of business units with this same gap, SDG&E decided to have that function brought into the Contractor Safety Services Department where this work scope could be performed for multiple business units. Incident reporting would be moved to a single contact in Contractor Safety Services then communicated out to the Enterprise, Business Units, and other parties as appropriate.

Requiring all Class 1 Contractors to submit a schedule to a single source in Contractor Safety Services would be a benefit to the enterprise. The tool would provide a view of all Class 1 Contractors that are working for SDG&E that Contractor Safety Services and the business units using the contractors could access. This would improve tracking of incidents, hours worked, and scheduling safety observations.

2. Mitigation 2 – Enhanced Verification of Class 1 Contractor Employee Specific Training

This activity encompasses developing a process to verify contractors are trained on specific safety programs according to their company specific requirements (*i.e.* OSHA, SDG&E). SDG&E will perform field visits to identify contractor employees' specific work scope in order to follow up with contractors to verify specific training requirements. Documentation will be reviewed specific to each contractor employee and training programs will be reviewed. Once this program framework is developed, additional third-party support will be required to support this effort.

V. COSTS, UNITS, AND QUANTITATIVE SUMMARY TABLES

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

**Table 4: Risk Control and Mitigation Plan - Recorded and Forecast Dollars Summary¹⁶
(Direct After Allocations, In 2020 \$000)**

ID	Control/Mitigation Name	Recorded Dollars		Forecast Dollars			
		2020 Capital ¹⁷	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
C1	Contractor Oversight Program	-	1,148	-	-	1,008	1,220
C2	Field Safety Oversight	3,894	433	13,500	16,342	500	605
C3	Safety Culture	-	-	-	-	11	14
M1	Enterprise-Wide Contractor Incident and Schedule Management	-	-	285	345	19	23
M2	Enhanced Verification of Class 1 Contractor Employee Specific Training	-	-	570	690	38	46

¹⁶ Recorded costs and forecast ranges are rounded. Additional cost-related information is provided in workpapers. Costs presented in the workpapers may differ from this table due to rounding. The figures provided are direct charges and do not include company loaders, with the exception of vacation and sick. The costs are also in 2020 dollar and have not been escalated to 2021 amounts. The capital presented is the sum of the years 2022, 2023, and 2024, or a three-year total. Years 2022, 2023 and 2024 are the forecast years for SDG&E's Test Year 2024 GRC Application.

¹⁷ Pursuant to D.14-12-025 and D.16-08-018, the Company provides the 2020 "baseline" capital costs associated with Controls. The 2020 capital amounts are for illustrative purposes only. Because capital programs generally span several years, considering only one year of capital may not represent the entire activity.

Table 5: Risk Control and Mitigation Plan - Units Summary

ID	Control/Mitigation Name	Units Description		Recorded Units		Forecast Units			
		Capital	O&M	2020 Capital	2020 O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 (Low) O&M	TY 2024 (High) O&M
C1	Contractor Oversight Program	FTEs		-	9	-	-	10	11
C2	Field Safety Oversight	3 rd party contractors		21	2	24	29	3	4
C3	Safety Culture	# of Joint Meetings		-	-	-	-	4	6
M1	Enterprise-Wide Contractor Incident and Schedule Management	Contractor		-	-	1	1	-	-
M2	Enhanced Verification of Class 1 Contractor Employee Specific Training	Contractor		-	-	1	2	-	-

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

ID	Control/Mitigation Name	Forecast			
		LoRE	CoRE	Risk Score	RSE
C1	Contractor Oversight Program	2.27	1,033	2348	139
C2	Field Safety Oversight	2.38	1,033	2461	35
C3	Safety Culture	See Table 7			
M1	Enterprise-Wide Contractor Incident and Schedule Management	See Table 7			
M2	Enhanced Verification of Class 1 Contractor Employee Specific Training	1.78	1,033	1837	86

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

ID	Control/Mitigation Name	RSE Exclusion Rationale
C3	Safety Culture	As mentioned in the description for this control, SDG&E strives for a positive safety culture with its contractors. SME judgement for this control is highly subjective given the nature of this control, and the data to determine the level of risk reduction associated with the activities noted in that section does not exist in order to calculate a meaningful RSE.
M1	Enterprise-Wide Contractor Incident and Schedule Management	Incident reporting and schedule management is an activity which provides a tool to improve reporting and monitoring of SDG&E's contractors. These tools are foundational, in that they are used as the underlying basis for the risk reduction that the Field Oversight control provides. As such, meaningful data or SME input to determine the level of risk reduction associated with this tool does not exist in order to calculate an RSE.

VI. ALTERNATIVES

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

A. Alternative 1 - SAP Contractor Incident Portal

This alternative would involve developing a portal for contractors to self-report their incidents which would trigger SDG&E Contractor Safety’s incident reporting process. Internalizing this process would give Contractor Safety Services more control over the incident information collected and allow for additional analysis and trending of incidents. SDG&E currently uses a tool within our third-party administrator, ISNetworld, for this process. Due to its complexity, the development of a portal that is more effective than what is currently in place has proven difficult to accomplish.

B. Alternative 2 - Use Internal Resources and Tools to Vet Contractors for Safety

This alternative would involve developing an in-house electronic platform using internal Information Technology (IT) resources at a cost exceedingly greater than the subscription fees incurred for outside third-party platforms, like ISNetworld. It would also result in time delays to develop such a platform. Furthermore, this alternative would require hiring several safety professionals at a much greater cost than the subscription fees incurred for third-party services, like ISNetworld, to review contractor compliance programs on an on-going basis for accuracy and completeness. Based on our experience over two years with using ISNetworld, this alternative was judged to be not a cost-effective option.

**Table 8: Alternative Mitigation Plan - Forecast Dollars Summary¹⁸
(Direct After Allocations, In 2020 \$000)**

ID	Alternative Mitigation Name	Forecast Dollars			
		2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 O&M (Low)	TY 2024 O&M (High)
A1	SAP Contractor Incident Portal	-	-	95	115
A2	Use internal resources and tools to vet contractors for safety	-	-	1,390	1,530

¹⁸ Recorded costs and forecast ranges are rounded. Additional cost-related information is provided in workpapers. Costs presented in the workpapers may differ from this table due to rounding. The figures provided are direct charges and do not include company loaders, with the exception of vacation and sick. The costs are also in 2020 dollar and have not been escalated to 2021 amounts. The capital presented is the sum of the years 2022, 2023, and 2024, or a three-year total. Years 2022, 2023 and 2024 are the forecast years for SDG&E’s Test Year 2024 GRC Application.

Table 9: Alternative Mitigation Plan - Units Summary

ID	Alternative Mitigation Name	Units Description		Forecast Units			
		Capital	O&M	2022-2024 Capital (Low)	2022-2024 Capital (High)	TY 2024 (Low) O&M	TY 2024 (High) O&M
A1	SAP Contractor Incident Portal	Internal IT Resources		-	-	1	1
A2	Use internal resources and tools to vet contractors for safety	FTEs		-	-	10	11

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

ID	Alternative Mitigation Name	Forecast			
		LoRE	CoRE	Risk Score	RSE
A1	SAP Contractor Incident Portal	See Table 11			
A2	Use internal resources and tools to vet contractors for safety	1.78	1,033	1,837	13

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

ID	Control/Mitigation Name	RSE Exclusion Rationale
A1	SAP Contractor Incident Portal	The Contractor Incident Portal alternative is currently being developed for review. Until we understand the new system, we will not know the potential benefits. As such, meaningful data to determine the level of risk reduction associated with this tool does not exist in order to calculate an RSE, and SME judgment does not fill the gaps.

APPENDIX A: SUMMARY OF ELEMENTS OF THE RISK BOW TIE

Appendix A: Summary of Elements of the Risk Bow Tie

Contractor Incident: Summary of Elements of the Risk Bow Tie

ID	Control/Mitigation Name	Elements of the Risk Bow Tie Addressed
C1	Contractor Oversight Program	DT.1 - DT.13 PC.1 - PC.7
C2	Field Safety Oversight	DT.1 - DT.13 PC.1 - PC.7
C3	Safety Culture	DT.1, DT.2, D.T. 3, D.T. 4, D.T. 11 PC.1 - PC.7
M1	Enterprise-Wide Contractor Incident and Schedule Management	D.T. 3 PC.1 - PC.7
M2	Enhanced Verification of Class 1 Contractor Employee Specific Training	DT.1, DT.2, D.T. 3, D.T. 4, D.T. 7, D.T. 8, D.T. 12 PC.1 - PC.7

APPENDIX B: QUANTITATIVE ANALYSIS SOURCE DATA REFERENCES

Appendix B: Quantitative Analysis Source Data References

The SA Decision directs the utility to identify potential consequences of a risk event using available and appropriate data.¹⁹ The below provides a listing of the inputs utilized as part of this assessment.

San Diego Gas & Electric Annual Serious Injuries and Fatalities (SIFs)

- 2015 –2020 internal SIF data

¹⁹ D.18-12-014, Attachment A at A-8 (Identification of Potential Consequences of Risk Event).