



2025 Risk Assessment Mitigation Phase

(Chapter SDG&E-Risk-7)

Contractor Safety

May 15, 2025

TABLE OF CONTENTS

I.	INTRODUCTION	1
A.	Risk Definition and Overview	1
B.	Risk Scope	2
C.	Data Sources Used to Quantify Risk Estimates	3
II.	RISK ASSESSMENT	3
A.	Risk Selection	4
B.	Risk Bow Tie	4
C.	Potential Risk Event Drivers/Triggers	5
D.	Potential Consequences of Risk Event (CoRE)	6
E.	Evolution of Risk Drivers and Potential Consequences	7
F.	Summary of Tranches	8
III.	PRE-MITIGATION RISK VALUE	8
A.	Risk Value Methodology	9
IV.	2024-2031 CONTROL & MITIGATION PLAN	11
A.	Control Programs	12
B.	Changes from 2024 Controls	15
C.	Mitigation Programs	15
D.	Climate Change Adaptation	17
E.	Foundational Programs	17
F.	Estimates of Costs, Units, and Cost-Benefit Ratios (CBRs)	18
V.	ALTERNATIVE MITIGATIONS	20
A.	Alternative 394: Contractor Safety Data Analytics & Support	20
B.	Alternative 395: Dedicated Contractor Safety Field Oversight Team Mitigation	22
VI.	HISTORICAL GRAPHIC	24

Attachment A: Controls and Mitigations with Required Compliance Drivers

Attachment B: Contractor Safety - Reference Material for Quantitative Analyses

Attachment C: Contractor Safety - Summary of Elements of Bow Tie

Attachment D: Application of Tranching Methodology

Chapter SDGE-Risk-7: Contractor Safety

I. INTRODUCTION

The purpose of this chapter is to present San Diego Gas & Electric Company's (SDG&E or the Company) risk control and mitigation plan for the Contractor Safety Risk. This chapter contains information and analysis for this risk that meet the requirements of the California Public Utilities Commission's (Commission or CPUC) Risk-Based Decision-Making Framework (RDF),¹ including the requirements adopted in Decision (D.) 22-12-027 (Phase 2 Decision) and D.24-05-064 (Phase 3 Decision). Contractor Safety Risk is included in the 2025 RAMP Report based on a safety risk assessment, further informed by its reliability and financial consequence attributes, consistent with the RDF guidance. This risk chapter describes the basis for selection of Contractor Safety Risk, the controls and/or mitigations put forth to reduce the likelihood or consequence of this risk, a discussion of alternative mitigations considered but not selected, and a graphic to show historical progress. This chapter presents cost and unit forecasts for the risk mitigating activities, but it does not request funding. Any funding requests for this risk will be made through the Company's Test Year (TY) 2028 General Rate Case (GRC) application. Finally, this chapter describes the methods applied to estimate the risk's monetized, pre-mitigated risk, the estimated risk-reduction benefits of each included control and mitigation, and the calculation of Cost-Benefit Ratios (CBRs) for each control and mitigation consistent with the method and process prescribed in the RDF.

A. Risk Definition and Overview

1. Risk Definition

For the purposes of this RAMP Report, SDG&E's Contractor Safety Risk is defined as the risk of an incident involving one or more on-duty contractors or subcontractors while conducting work on behalf of SDG&E that results in injury or fatality.

Certain controls and mitigations presented in this chapter are subject to compliance mandates beyond RDF requirements, such as those from the Occupational Safety and Health Administration (OSHA), the CPUC and their relevant investigations, rulemakings, and orders

¹ As discussed in Volume 1, Chapter RAMP-1, the RDF Framework broadly refers to the recent modifications to the Commission's Rate Case Plan adopted in Rulemaking (R.) 13-11-006, Safety Model Assessment Proceeding A. 15-05-002 et al. (cons.), and R.20-07-013 (the Risk OIR), including D.24-05-064, Appendix A.

instituting rulemakings (OIRs). A list of compliance requirements applicable to the Employee Contractor Risk is provided in Attachment A. Certain mitigation programs have value beyond the estimated risk reduction as prescribed by the RDF, such as enhancing operations and promoting public trust in the communities SDG&E serves.

2. Risk Overview

Safety is a core value and is foundational to SDG&E’s operations. SDG&E defines safety as the presence of controls for known hazards, actions to anticipate and guard against unknown hazards, and the commitment to continuously improve SDG&E’s ability to recognize and mitigate hazards. SDG&E focuses on safety through the lenses of employee safety, contractor safety, public safety, and infrastructure safety.

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 Shutoffs (PSPS), Red Flag Warnings (RFW) and other emergency events. SDG&E has many safety-related policies and procedures for contractors to follow, as discussed further below.

SDG&E’s culture and commitment to continuous safety improvement, as supported by the controls and mitigations identified within this chapter, takes a proactive and preventative approach and are designed to manage its Contractor Safety Risk.

B. Risk Scope

SDG&E’s Contractor Safety Risk analysis considers the risk of a work-related – as defined by California Occupational Safety and Health Administration (Cal/OSHA) – safety incident involving a Class 1 Contractor(s) that causes minor² or serious injury/illness³ or fatality

² Minor injury or illness is one that does not meet the criteria for a serious injury as defined by Cal/OSHA.

³ Cal/OSHA defines a serious injury or illness as “any injury or illness occurring in a place of employment or in connection with any employment that requires inpatient hospitalization for other than medical observation or diagnostic testing, or in which an employee suffers an amputation, the loss of an eye, or any serious degree of permanent disfigurement, but does not include any injury or illness or death caused by an accident on a public street or highway, unless the accident occurred in a construction zone.” Cal. Code Regs. Tit. 8, § 330(h) (2020).

while conducting work on behalf of SDG&E. SDG&E defines Class 1 Contractors as 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 a Serious Safety Incident.⁴ Examples of a Class 1 Contractor include contractors performing work involving energized equipment or hazardous chemicals.⁵

C. Data Sources Used to Quantify Risk Estimates⁶

SDG&E utilized internal data sources to determine the Contractor Safety Risk Pre-Mitigated Risk Value and calculate risk reduction estimates for mitigation activities (which enables estimation of Post Mitigation Monetized Risk Values and Cost Benefit Ratios). Where internal data is deemed insufficient, supplemental industry or national data is used, as appropriate, and adjusted to account for the risk characteristics associated with the Company’s specific operating locations and service territory. For example, certain types of incident events have not occurred within the SoCalGas and SDG&E service territories. Expanding the quantitative data sources to include industry data where such incidents have been recorded is appropriate to establish a baseline of risk and risk addressed by mitigative activities. Attachment B provides additional information regarding these data resources.

II. RISK ASSESSMENT

In accordance with Commission guidance, this section provides a qualitative description of the Contractor Safety Risk, including a risk Bow Tie, which delineates potential Drivers/Triggers and Potential Consequences, followed by a description of the Tranches determined for this risk.

⁴ SDG&E’s Class 1 Contractor Safety Manual defines a “Serious Safety Incident” as “a work-connected injury or illness occurring in a place of employment or in connection with any employment that requires inpatient hospitalization for other than medical observation or in which an employee suffers a loss of any member of the body or suffers any serious degree of permanent disfigurement.,” *available at:* <https://www.sdge.com/sites/default/files/SDGE%20-%20Contractor%20Safety%20Manual%20-%20Class%201%20Contractors%2012-21-2020.pdf>

⁵ All references to “contractors” herein are referencing Class 1 contractors only.

⁶ Copies and/or links to these data resources are provided in the workpapers served with this Report on May 15, 2025.

A. Risk Selection

The Contractor Safety Risk was included as a risk in SDG&E's 2021 RAMP and was included in the 2022, 2023 and 2024 Enterprise Risk Registries (ERR).⁷ SDG&E's ERR evaluation and selection process is summarized in Chapter RAMP-2, Enterprise Risk Management Framework and in Chapter RAMP-3 Risk Quantification Framework.

SDG&E selected this risk in accordance with the RDF Row 9.⁸ Specifically, SDG&E assessed the top risks from the Company's 2024 ERR based on the Consequence of a Risk Event (CoRE) Safety attribute. The Contractor Safety Risk was among the risks presented in SDG&E's list of Preliminary 2025 RAMP Risks on December 17, 2024 at a pre-filing workshop. The Contractor Safety Risk was selected based on the qualification of its Safety risk attribute, as required under the RDF. At the pre-filing workshop, no party expressed opposition to inclusion of this risk in SDG&E's 2025 RAMP Report.

B. Risk Bow Tie

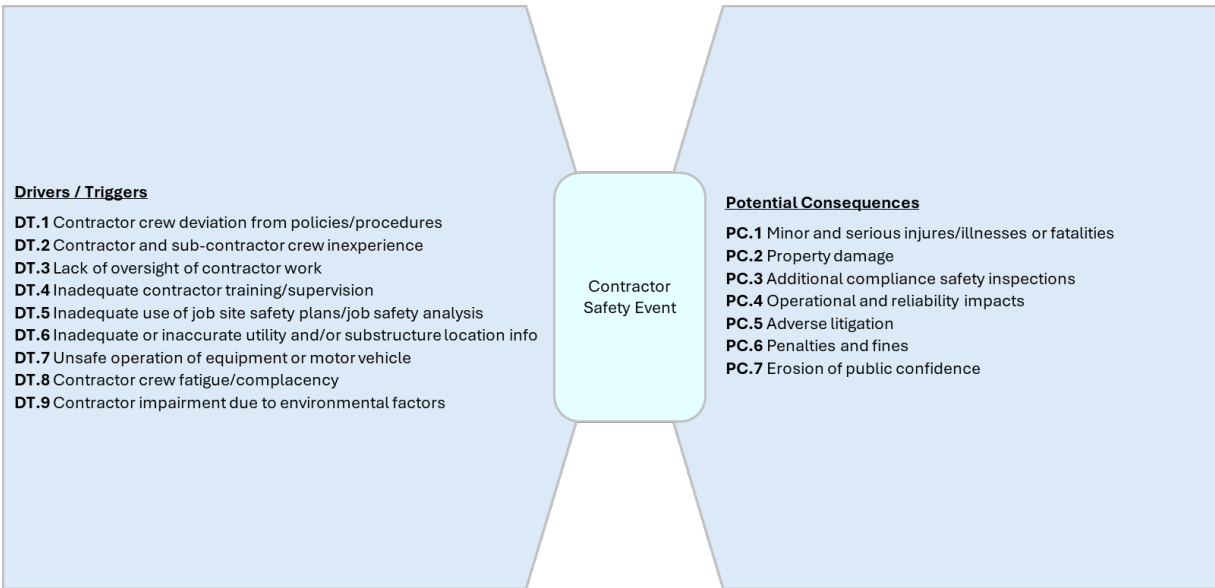
In accordance with Commission requirements, this section describes the risk Bow Tie, possible Drivers, Potential Consequences, and a mapping of the elements in the Bow Tie to the mitigation(s) that addresses it.⁹ As illustrated in the risk Bow Tie shown below in Figure 1, the Risk Event (center of the Bow Tie) is a Contractor Safety Risk that could lead to a safety-related event, the left side of the Bow Tie illustrates Drivers/Triggers that could lead to the Contractor Safety Risk, and the right side shows the Potential Consequences of the Contractor Safety Risk. SDG&E applies this framework to identify and summarize the information provided in Figure 1. A mapping of each mitigation to the addressed elements of the risk Bow Tie is provided in Attachment C.

⁷ In the 2021 RAMP Report, Chapter SDG&E-Risk-4, this risk was called Incident Involving a Contractor. The risk definition and elements are unchanged.

⁸ D.24-05-064, RDF Row 9, states that risks to be included in the RAMP Report, at minimum, are those identified in the Company's ERR comprising "the top 40% of ERR risks with a Safety Risk Value greater than zero dollars."

⁹ D.24-05-064, RDF Row 15.

**Figure 1
Contractor Safety Risk: Risk Bow Tie**



C. Potential Risk Event Drivers/Triggers¹⁰

When performing a risk assessment for the Contractor Safety Risk, SDG&E identifies potential causes, referred to as Drivers or Triggers, that reflect current and/or forecasted conditions and may include both external actions as well as characteristics inherent to the Contractor Safety Risk.¹¹ These Bow Tie Drivers/Triggers inform the Likelihood of a Risk Event (LoRE) component of the risk value. These include:

- **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 could lead to a safety-related event.

¹⁰ An indication that a risk could occur. It does not reflect actual or threatened conditions.

¹¹ D.24-05-064, RDF Row 10-11.

- **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 could 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 train and supervise their employees to reduce the likelihood of an incident. Inadequate training or the lack of sufficient supervision could 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 a 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 could lead to a safety-related event.
- **DT.7 – Unsafe operation of equipment or motor vehicles:** Contractors may utilize their own company vehicles and equipment, or vehicles and equipment owned by SDG&E. The unsafe operation of such could lead to a safety-related event.
- **DT.8 – Contractor crew fatigue/complacency:** Contractors working excessive hours can create unsafe work environments. Also, complacency may reduce the level of awareness to hazards, which could lead to a safety-related event.
- **DT.9 – Contractor impairment due to environmental factors:** Factors such as heat, night work, high-risk work locations (*e.g.* busy roadways), etc., could lead to a contractor becoming impaired, and as a result could potentially lead to a safety-related event.

D. Potential Consequences of Risk Event (CoRE)

Potential Consequences are listed to the right side of the risk Bow Tie. SDG&E identifies the Potential Consequences of the Contractor Safety Risk by analyzing internal data

sources where available, industry data,¹² and subject matter expertise (SME).¹³ These Bow Tie Consequences inform the CoRE component of the risk score. If one or more of the Drivers/Triggers listed above were to result in a safety-related event, the Potential Consequences, in a plausible worst-case scenario, could include:

- PC.1 – Minor and serious injuries/illnesses or fatalities
- PC.2 - Property damage
- PC.3 - Additional compliance safety inspections
- PC.4 - Operational and reliability impacts
- PC.5 - Adverse litigation
- PC.6 - Penalties and fines
- PC.7 - Erosion of public confidence

These Potential Consequences were used by SDG&E in the scoring of the Contractor Safety Risk during the development of its 2024 ERR.

E. Evolution of Risk Drivers and Potential Consequences

As specified in the Phase 3 Decision,¹⁴ regarding changes to the previous ERR and/or the 2021 RAMP, the title of the risk from the 2021 RAMP has changed from “Incident Involving a Contractor” to “Contractor Safety.” No changes to the Drivers/Triggers have been made to the Contractor Safety ERR since the 2021 RAMP. However, changes to the Potential Consequences include:

1. Changes to Potential Consequences of the Risk Bow Tie

- PC.1 - Added “minor injuries” and “illnesses” to serious injuries and fatalities Consequence, which was not included in the 2021 RAMP Bow Tie for the Contractor Safety Risk. Minor injuries and illnesses are included as attributes that were used in determining the safety risk value which is required by D.24-05-064,

¹² Industry data includes data from SDG&E’s annual Safety Performance Metrics Report (SPMR) and Centers for Disease Control and Prevention (CDC), *Web-based Injury Statistics Query and Reporting System (WISQARS) Cost of Injury*, available at: <https://wisqars.cdc.gov/cost/?y=2023&o=MORT&i=0&m=20810&g=00&s=0&u=TOTAL&u=AVG&t=COMBO&t=MED&t=VPSL&a=5Yr&g1=0&g2=199&a1=0&a2=199&r1=MECH&r2=INTENT&r3=NONE&r4=NONE>.

¹³ D.24-05-064, RDF Row 10.

¹⁴ D.24-05-064, RDF Row 8.

RDF Row 9, and therefore were added to Potential Consequences for the 2025 RAMP Bow Tie.

F. Summary of Tranches

To determine groups of assets or systems with similar risk profiles, or Tranches, and in accordance with Row 14 of the RDF, SDG&E applied the Homogeneous Tranching Methodology (HTM) as outlined in Chapter RAMP-3: Risk Quantification Framework. As a result, the following classes, LoRE-CoRE pairs, and resulting number of Tranches were determined:¹⁵

Table 1: Contractor Safety Risk Tranche Identification

Class	Number of LoRE-CoRE Pairs	Number of Resulting Tranches
Electric Operations	1	1
Gas Operations	1	1
Construction Management	1	1
Vegetation Management	1	1
Miscellaneous	1	1
TOTAL	5	5

Attachment D illustrates the derivation of the Tranches, as shown in Table 1 above, in accordance with the HTM. The classes were identified by SDG&E as logical groups based on the Company’s operations. These classes also align risk treatments with risk profiles reflective of SDG&E operations. More detailed Tranche information, including risk quantification by LoRE-CoRE pair, Tranche names, and mitigation associations (*i.e.*, cost mapping and risk reduction) to Tranches, is provided in workpapers.

III. PRE-MITIGATION RISK VALUE

In accordance with the RDF Row 19, the table below provides the pre-mitigation risk values for the Contractor Safety Risk. Further details, including pre-mitigation risk values by Tranche, are provided in workpapers. Explanations of the risk quantification methodology and

¹⁵ Note that Contractor Safety Risk, as a human-based safety risk, does not feature the natural segmentation characteristics that asset-based risks do, which limits the number of viable Tranches (essentially to one Tranche per class).

other higher-level assumptions are provided in Chapter RAMP-3 Risk Quantification Framework.

**Table 2: Contractor Safety Risk
Monetized Risk Values
(Direct, in 2024 \$ millions)**

LoRE	CoRE [Risk-Adjusted Attribute Values]			Total CoRE	Total Risk [LoRE x Total CoRE]
	Safety	Reliability	Financial		
61.17	\$0.23	\$0.00	\$0.01	\$0.24	\$14.56

A. Risk Value Methodology

SDG&E’s risk modeling for the Contractor Safety Risk follows RDF guidance¹⁶ for implementing a Cost Benefit Approach, as described below:

1. Cost Benefit Approach Principle 1 – Attribute Hierarchy (RDF Row 2):

Contractor Safety Risk is quantified in a combined attribute hierarchy as shown in the table above, such that Safety, Reliability, and Financial are presented based on available, observable, and measurable data.

2. Cost Benefit Approach Principle 2 – Measured Observations (RDF Row 3):

Contractor Safety Risk used observable and measurable data in the estimation of CoRE values. SDG&E utilized internal incident data to represent natural units for contractor injuries. These injuries were classified as either Minor, Serious, or Unsurvivable and assigned the corresponding fractional VSL value (0.003, 0.253, and 1.0, respectively) as described in Chapter RAMP-3.

3. Cost Benefit Approach Principle 3 – Comparison (RDF Row 4):

Contractor Safety Risk utilized proxy data as provided by various sources including, but not limited to, Bureau of Labor Statistics (to determine a proration of SDG&E’s contractor base versus the national working population), Social Science Research Network (to determine impact of manual entries rather than a statistical software), and Accident Analysis and Prevention from Indiana University of

¹⁶ D.24-05-064, RDF Rows 2-7.

Pennsylvania (to determine impact of data analysis). Please refer to Attachment B for specific details regarding these sources.

4. **Cost Benefit Approach Principle 4 – Risk Assessment (RDF Row 5):** Data distributions were not applicable for the proxy-driven risk events modeled for the Contractor Safety Risk components. For those components, probabilities of future events were derived based on internal recorded data from past years or supplemented with national data where applicable.
5. **Cost Benefit Approach Principle 5 – Monetized Levels of Attributes (RDF Row 6):** In accordance with D.22-12-027 and D.24-05-064, RDF Row 6, SDG&E used a California-adjusted Department of Transportation monetized equivalent to calculate the Safety CoRE attribute at a monetized equivalent of \$16.2 million per fatality, \$49 thousand per minor injury, and \$4.1 million per serious injury;¹⁷ and the Financial CoRE attribute is valued at \$1 per dollar.¹⁸ Gas and Electric Reliability are quantified as \$0 due to the lack of empirical and proxy data supporting reliability consequences occurring from employee safety incidents.

Further information regarding SDG&E’s quantitative risk analyses, including raw data, calculations, and technical references are provided in workpapers.

6. **Cost Benefit Approach Principle 6 – Adjusted Attribute Level (RDF Row 7):**

**Table 3: Contractor Safety Risk
Risk Scaled vs Unscaled Value by CoRE Attributes
(Direct, in 2024 \$ millions)**

	Safety	Reliability	Financial	Total
Unscaled Risk Value	\$13.76	\$0	\$0.80	\$14.56
Scaled Risk Value	\$13.76	\$0	\$0.80	\$14.56

The values in the table above are the result of SDG&E applying the risk scaling methodology described in Chapter RAMP-3 to the CoRE attributes for the Contractor Safety Risk. Contractor Safety does not feature risk aversion scaling impact because no observed

¹⁷ See D.22-12-027 at 35 (“We adopt Staff’s recommendation to require a dollar valuation of the Safety Attribute in the Cost-Benefit Approach in the RDF using the DOT VSL as the standard value.”).

¹⁸ See Chapter RAMP-3: Risk Quantification Framework, Section II.

events rise to the level at which scaling is applicable, and the magnitudes of the consequences are not as high (e.g., multiple-fatality event) as can occur with other risks.

For further information regarding the risk scaling function, including the risk scaling factor and the loss threshold at which the risk scaling factor begins to apply, please refer to Chapter RAMP-3.

IV. 2024-2031 CONTROL & MITIGATION PLAN

This section identifies and describes the controls and mitigations for the Contractor Safety Risk and reflects changes expected to occur from the last year of recorded costs at the time of filing this RAMP Report (2024) through the 2028 GRC cycle (2031). For clarity, a current activity that is included in the plan may be referred to as either a control or a mitigation. Table 4 below shows which control activities are in place in 2024, and which are expected to be on-going, completed, or new during the 2025-2031 time periods. Because the TY 2024 GRC proceeding established rates through 2027,¹⁹ information through 2027 is calculated as part of the baseline risk, in accordance with D.21-11-009.²⁰ For the TY 2028 GRC, SDG&E calculated CBRs beginning with TY 2028 and for each Post-Test Year (PTY) (2029, 2030, and 2031).²¹

**Table 4: Contractor Safety Risk
2024-2031 Control and Mitigation Plan Summary**

ID	Control/Mitigation Description	2024 Control	2025-2031 Plan
C301	Class 1 Contractor Safety Program	X	Ongoing
C304	Contractor Safety Field Oversight	X	Ongoing
M307	Risk Informed Class 1 Contractor Safety Program Management		2025 ²²

***Bold** indicates this control/mitigation includes mandated programs/activities.*

¹⁹ See D.24-12-074.

²⁰ See, D.21-11-009 at 136, Conclusions of Law 7 (providing a definition for “baselines” and “baseline risk”).

²¹ In the TY 2028 GRC, the last year of recorded costs, or base year, will be 2025. SoCalGas and SDG&E will forecast information for 2026 through 2031, in accordance with the Rate Case Plan.

²² This is the planned in-service year for the mitigation.

A. Control Programs

In accordance with Commission guidance, this section “[d]escribe[s] the controls or mitigations currently in place”²³ (*i.e.*, activities in this section were in place as of December 31, 2024). Controls that will continue as part of the risk mitigation plan are identified in Table 4 above.

C301: SDG&E Contractor Safety Program:

The SDG&E Contractor Safety Program oversees and manages Class 1 contractors to confirm work is being performed safely and risk is being managed effectively. This program is primarily managed by SDG&E’s Contractor Safety Services (CSS). SDG&E’s CSS team is made up of both internal and contracted resources to support the various activities to confirm contractors are working safely. SDG&E operating groups also have field safety oversight responsibilities for all construction work being performed by Class 1 Contractors working for their respective groups. Field Safety Oversight (C304) is discussed below.

For purposes of the Contractor Safety Program, SDG&E institutes a number of safeguards to confirm that all contracted work is performed in accordance with Cal 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. Safeguards include:

- **Safety Requirements:** Adherence to the Contractor Safety Program Standard for SDG&E and the Class 1 Contractor Safety Manual to confirm each group is adhering to the same requirements and/or standards.
- **Administrative Activities:** Administrative activities associated with Class 1 Contractor work such as educating contractors and internal resources on the program requirements, assisting with program compliance, and following up with contractors that fall out of compliance.
- **Contractor Pre-Qualification:** Pre-qualification of all Class 1 Contractors according to SDG&E’s Contractor Safety Program.
- **Safety Pre-Work:** Requiring Pre-work Safety Meeting Notices and Acknowledgement Forms. Notifications to contractors of known hazards,

²³ D.18-12-014 at 33.

followed by meetings with contractors to discuss hazards and mitigations that are jointly acknowledged before performing work.

- **Contract Requirements:** All new and existing contracts and Master Service Agreements (MSAs) between SDG&E and a contractor state that compliance with SDG&E's Class 1 Contractor Safety Manual is a requirement 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 MSA contractual requirements.

SDG&E leverages third-party software administrator, ISNetwork, to monitor risk in a cost-effective manner. ISNetwork is used to house and verify the established SDG&E pre-qualification requirements for Class 1 Contractors. It contains historical safety-related performance for all Class I contractors who perform work for SDG&E. ISNetwork also gives SDG&E a place to communicate with contractors. ISNetwork monitors new and changing Cal/OSHA requirements, verifies SDG&E's Class 1 Contractors meet minimum Cal/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 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. Absent third-party software administration tools, SDG&E would need additional resources and dedicated support to perform these activities.

SDG&E strives to promote a positive safety culture with its contractors through outreach, education, and collaboration. SDG&E starts with its Company culture, values, and the way it does business. SDG&E not only establishes touchpoints throughout the year with contractors but identifies items during the year where collaboration or improvement should be reviewed and implements mitigation measures for any identified gaps. SDG&E holds an Annual Contractor Safety Summit and Contractor Safety Quarterly Meetings to provide a forum to share industry leading best practices with contractors, communicate new requirements, give 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 senior leadership. The quarterly safety

meetings are attended by SDG&E and Class 1 Contractor senior leadership, but field-level personnel are also encouraged to attend.

Additionally, SDG&E engages its internal workforce and Class 1 Contractors with periodic safety culture assessments to better gauge where it is with the safety culture and maturity of the Contractor Safety Program. The results of these assessments are used for action planning and upcoming initiatives targeted to improve safety and cultural gaps.

SDG&E's Contractor Safety Program offers several key benefits that help reduce safety risks, including:

- 1. Hazard Identification and Mitigation:** A structured contractor safety program reduces the risk of safety-related events by promoting safe work practices so that potential hazards are identified and addressed before contractors begin work.
- 2. Compliance with Regulations:** The Program confirms that contractors comply with relevant safety regulations and standards, reducing the risk of safety-related events.
- 3. Enhanced Communication:** The Program encourages and provides opportunities for clear communication channels between SDG&E and its Class 1 Contractors, which improve the dissemination of safety protocols and procedures so that everyone is on the same page with respect to safety.
- 4. Training Verification:** Regular safety training for contractors confirms they are aware of the latest safety practices and protocols, which helps in maintaining a safe working environment.
- 5. Incident Reduction:** By proactively managing safety, SDG&E can reduce the number of safety-related events and near-misses, leading to a safer workplace.
- 6. Improved Safety Culture:** SDG&E's strong Contractor Safety Program fosters a culture of safety among contractors, encouraging them to prioritize safety in their daily activities.

C304: Contractor Safety Field Oversight

The Contractor Safety Field Oversight program confirms contracted work being performed on behalf of SDG&E is being performed safely and risk is being managed effectively. SDG&E's CSS oversees safety for all operating groups that use Class 1 Contractors, including Contractor Safety Field Oversight. Contractor Safety Field Oversight uses mostly contracted

safety professionals. Internal resources are also used to support the data received by new Class 1 Contractors and business units in order to pre-qualify, process, track, trend, and communicate safety data. Contractor Safety Field Oversight contracted safety professionals perform field level safety assessments on Class 1 Contractors who perform work on behalf of SDG&E. Contractor Safety Field Oversight duties include, but are not limited to, the following:

Safety inspections/observations: This is a proactive measure to observe and confirm 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 confirm accuracy.

Pre-work safety meetings: Contractor Safety Field Oversight safety professionals perform jobsite reviews with all parties involved to identify potential hazards and mitigations prior to work starting and also review site specific safety plans when SDG&E requires contractors to submit them.

Contractor Safety Scorecard: SDG&E's CSS team collects and utilizes the field level data submitted from Class 1 contractors working on SDG&E projects in order to supply a safety grade for future work. This is a proactive approach to SDG&E's contractor vetting and selection process.

B. Changes from 2024 Controls

SDG&E plans to continue each of the existing controls discussed above, and reflected in Table 4, through the 2025-2031 period without significant changes.

C. Mitigation Programs

SDG&E's mitigation program is intended to enhance and strengthen SDG&E's current Contractor Safety Program to continually advance its safety culture and mature as a learning organization. SDG&E intends to implement the following mitigation program:

- **M307: Risk Informed Class 1 Contractor Safety Program Management**

M307: Risk Informed Class 1 Contractor Safety Program Management

SDG&E regularly reviews, measures, and assesses the effectiveness of its safety programs and takes a proactive and preventative approach to safety. SDG&E plans to enhance

its Class 1 Contractor Safety Program by implementing High Energy Control Assessments (HECAs). Introduction of HECAs would provide enhanced data analytic capabilities for proactive and preventive action. Additionally, SDG&E plans to expand its Class 1 Contractor Safety Program by leveraging data analytic software and tools. Risk reduction benefits would include:

- 1. Enhanced Safety Performance:** HECA is a method of measuring performance by assessing the extent to which front-line employees are protected against life-threatening hazards. By identifying high energy hazards and ensuring corresponding direct controls, SDG&E could further mitigate the risk of serious injuries or fatalities.
- 2. Consistent Measurement:** HECA provides a standardized method for measuring safety performance within SDG&E and externally. This consistency allows for reliable and comparable safety metrics, which is essential for making informed decisions and improving safety protocols.
- 3. Improved Risk Management:** Utilizing a risk management and data analytics technology platform allows for better identification, assessment, and mitigation of high-energy hazards. This technology can provide real-time data and insights, enabling proactive measures to prevent accidents and enhance overall safety.

Together, HECA and enhanced data analytic capabilities will allow SDG&E to make more data-driven and risk-prioritized decisions. By leveraging data analytics, SDG&E can track safety performance, identify trends, and make more data-driven decisions to improve safety measures. This approach not only enhances safety with proactive and preventative measures but also optimizes resource allocation and operational efficiency.

SDG&E's planned expansion of its Contractor Safety Program with internal resources will advance HECA operationalization and predictive data analytics. Additional internal resources should improve review of new incoming data, assist with development of mitigation measures, as well as enhance internal and external safety communication. The planned expansion of the program would also allow for improved HECA training of safety observers in the field for the purpose of enhancing efficiency and consistency of data collection to support reduction of SIF events.

D. Climate Change Adaptation

Pursuant to Commission decisions²⁴ in the Climate Adaptation OIR (R.18-04-019), SDG&E performed a Climate Adaptation Vulnerability Assessment (CAVA) focused on years 2030, 2050, and 2070, with the aim of identifying asset and operational vulnerabilities to climate hazards across the SDG&E system. SDG&E recognizes the need to address climate vulnerabilities to promote the safety and reliability of its services and mitigate the increasing climate-related hazards through innovative and community-centric approaches. Some of the climate hazards that will have short- and long-term ramifications in the San Diego region include extreme temperatures, wildfire, inland flooding, coastal flooding and erosion, and landslides. Climate change is recognized as a factor that can drive, trigger, or exacerbate multiple RAMP risks. Implementing climate change adaptation measures and integrating climate vulnerability considerations into RAMP controls and mitigations can enhance system infrastructure longevity and reduce the severity of long-term negative climate impacts. The controls and mitigations described in further detail in this chapter, as shown below, align with the goal of increasing SDG&E’s physical and operational resilience to the increasing frequency and intensity of climate hazards. Additional information on the CAVA and a list of climate-relevant controls and mitigations included in RAMP are provided in Chapter RAMP-5: Climate Change Adaptation.

**Table 5: Contractor Safety Risk
Controls and Mitigations that Align with Increasing Resilience to Climate Hazards**

Relevant ID	Relevant Control/Mitigation	Potential Climate Hazard(s)
M307	Risk Informed Class 1 Contractor Safety Program Management	Extreme Temperatures

E. Foundational Programs

Foundational Programs are “[i]nitiatives that support or enable two or more Mitigation programs or two or more Risks but do not directly reduce the Consequences or reduce the Likelihood of safety Risk Events.”²⁵ There are no Foundational Programs that are applicable to the Contractor Safety Risk and the mitigation activities that are supported.

²⁴ D.19-10-054; D.20-08-046.

²⁵ D.24-05-064, RDF at A-4.

F. Estimates of Costs, Units, and Cost-Benefit Ratios (CBRs)

The tables in this section provide a quantitative summary of the risk control and mitigation plan for the Contractor Safety Risk, including the associated costs, units, and CBRs. Additional information by Tranche is provided in workpapers. The costs shown are estimated using assumptions provided by SMEs and available data. In compliance with the Phase 3 Decision,²⁶ for each enterprise risk, SDG&E uses actual results and industry data, and when that is not available, supplements the data with SME input. Additional details regarding the data and expertise relied upon in developing these estimates are provided in Attachment B.

**Table 6: Contractor Safety Risk
Control and Mitigation Plan Recorded and Forecast Costs Summary
(Direct, in 2024 \$ thousands)**

Control/Mitigation		Adjusted Recorded		Forecast Costs			
ID	Name	2024 Capital	2024 O&M	2028 O&M	2025-2028 Capital	PTY Capital	PTY O&M
C301	Class 1 Contractor Safety Program	0	1,018	1,092	0	0	3,276
C304	Contractor Safety Field Oversight	4,754	0	0	19,212	14,409	0
M307	Risk Informed Class 1 Contractor Safety Program Management	0	0	184	224	168	552
Total		4,754	1,018	1,276	19,436	14,577	3,828

***Bold** indicates this control/mitigation includes mandated programs/activities.*

**Table 7: Contractor Safety Risk
Control & Mitigation Plan – Units Summary**

Control/Mitigation		Recorded Units			Forecast Units			
ID	Name	Unit of Measure	2024 Capital	2024 O&M	2028 O&M	2025-2028 Capital	PTY Capital	PTY O&M
C301	Class 1 Contractor Safety Program	FTEs	0	6	6	0	0	18
C304	Contractor Safety Field Oversight	Class 1 Contractor Hours	7,249,839	0	0	28,999,356	21,749,517	0

²⁶ D.24-05-064, RDF Row 10.

Control/Mitigation		Recorded Units			Forecast Units			
ID	Name	Unit of Measure	2024 Capital	2024 O&M	2028 O&M	2025-2028 Capital	PTY Capital	PTY O&M
M307	Risk Informed Class 1 Contractor Safety Program Management	FTEs	0	0	1	4	3	3

Bold indicates this control/mitigation includes mandated programs/activities.

In the table below, CBRs are presented in summary at the mitigation or control level for the TY 2028 GRC cycle. CBRs are calculated based on scaled, expected values, unless otherwise noted, and are calculated for each of the three required discount rates²⁷ in each year of the GRC cycle and for the post-test years in aggregate (2029-2031). Costs and CBRs for each year of the GRC cycle and the aggregated years are provided in workpapers.

**Table 8: Contractor Safety Risk
Cost Benefit Ratio Results Summary (2028-2031)
(Direct, in 2024 \$ millions)**

ID	Control/Mitigation Name	Capital (2028 – 2031)	O&M (2028 – 2031)	CBR (Societal)	CBR (Hybrid)	CBR (WACC)
C301	Class 1 Contractor Safety Program Oversight	\$0.0	\$4.4	2.87	3.06	2.87
C304	Contractor Safety Field Oversight	\$19.2	\$0.0	2.14	2.28	2.14
M307	Risk Informed Class 1 Contractor Safety Program Management	\$0.22	\$0.74	0.45	0.48	0.45
A394	Contractor Safety Data Analytics & Support	\$0.0	\$1.9	0.53	0.57	0.53
A395	Dedicated Contractor Safety Field Oversight Team	\$12.7	\$0.0	1.51	1.61	1.51

Bold indicates this control/mitigation includes mandated programs/activities.

Tranche-level CBRs by year and in aggregate for each mitigation are provided in workpapers.

²⁷ See Chapter RAMP-3 for definitions of discount rates, as ordered in the Phase 3 Decision.

V. ALTERNATIVE MITIGATIONS

Pursuant to D.14-12-025, D.16-08-018, and D.18-12-014²⁸ SDG&E considered two alternatives to the risk mitigation plan for the Contractor 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 plan considers changes in risk reduction, cost, reasonableness, current conditions, modifications to the plan, and constraints, such as budget and resources.

**Table 9: Contractor Safety Risk
Alternative Mitigation Plan Forecast Cost Summary
(Direct, in 2024 \$ thousands)**

Alternative Mitigation		Forecast Costs			
ID	Name	2025-2028 Capital	PTY Capital	2025-2028 O&M	PTY O&M
A394	Contractor Safety Data Analytics & Support	0	0	1,980	1,485
A395	Dedicated Contractor Safety Field Oversight Team	12,708	9,531	0	0
Total		12,708	9,531	1,980	1,485

**Table 10: Contractor Safety Risk
Alternative Mitigation Costs Benefit Ratio Results Summary
(Direct, in 2024 \$ millions)**

ID	Alternative Mitigation Name	Capital TY 2028	O&M TY 2028	CBR (Societal)	CBR (Hybrid)	CBR (WACC)
A394	Contractor Safety Data Analytics & Support	\$0	\$495	0.53	0.57	0.53
A395	Dedicated Contractor Safety Field Oversight Team	\$3,177	\$0	1.51	1.61	1.51

A. Alternative 394: Contractor Safety Data Analytics & Support

This is an alternative approach to M307. As described above, SDG&E plans to expand its Class 1 Contractor Safety Program by leveraging data analytic software and internal resources to implement HECAs and assess the output of the assessment data. Introduction of HECAs would mitigate Contractor Safety Risk and provide enhanced data analytic capabilities for proactive and preventive action. Risk reduction benefits of M307 are described above.

²⁸ See, e.g., D.18-12-014 at 33-35.

In developing its planned mitigation (M307), SDG&E assessed the option of leveraging additional fully dedicated internal personnel to manually collect safety observation, inspection and HECA data in lieu of the planned technology to provide a centralized data resource and risk software. Without data analytic software, as included in M307, SDG&E would need to dedicate additional employee resources not accounted for in M307 to manually collect and assess data in lieu of the data analytic software. Having a larger internal dedicated team of data specialists to collect and assess HECA data could enhance the Contractor Safety Program by improving identification and mitigation of risks associated with high energy hazards. Key risk reduction benefits, in addition to those identified above, include:

- **Enhanced Hazard Identification:** HECA data helps in identifying high-energy hazards that might not be immediately obvious. Having a larger team to assess and follow-up could allow for additional proactive risk identification and mitigation.
- **Improved Control Measures:** Having a larger team to assess the effectiveness of existing controls could allow for implementation of more robust measures and controls to mitigate high energy risks.
- **Enhanced Data-Driven Decision Making:** HECA data provides a comprehensive understanding of risk factors, enabling smarter, data-driven decisions during the design and planning stages of projects. A larger support team could improve data-driven decision making for supported teams such as SDG&E's Engineering, Design, Operations and Planning teams.
- **Benchmarking and Continuous Improvement:** Regular assessment and benchmarking of high energy controls facilitate continuous improvement in safety practices, helping to set and achieve incremental safety goals. A larger team could engage in additional benchmarking efforts industry wide.
- **Focused Safety Discussions:** HECA data can guide focused crew discussions about the adequacy of controls before work begins. A larger support team could improve communication of potential hazards and precautions.
- **Reduced At-Risk Exposures:** By identifying gaps in control measures and addressing them promptly, HECA data helps reduce the rate of at-risk exposures, thereby lowering the likelihood of serious injuries or fatalities. A larger support

team could improve processes for tracking and follow-up on identified gaps or at-risk exposures.

Overall, having a larger data collection and analytic support team in lieu of a smaller team that leverages data analytic software as included in M307, to collect, review and access HECA data is a proactive approach to HECA management and contractor safety. However, this approach would require more resources and would not provide the risk reduction benefit of having centralized data analytic software and technology to identify and assess risk company-wide. A centralized safety data repository offers several risk reduction benefits that would not be present with this Alternative Mitigation, including:

1. **Improved Data Accuracy:** Centralizing data allows for updates to be made in one place, reducing the risk of inconsistencies and errors.
2. **Enhanced Security:** With data stored in a single location, it is easier to apply and monitor security protocols, access controls, and permissions uniformly.
3. **Risk-Informed Decision-Making:** Access to comprehensive and up-to-date information helps in identifying patterns and trends, leading to more informed decisions.
4. **Increased Efficiency:** Centralized data is easier to access and manage, reducing the time and effort needed to find and update information.
5. **Standardization:** A centralized repository can adopt global data standards, improving the consistency and interoperability of data across different systems.
6. **Reduced Duplication:** By consolidating data, organizations can avoid redundant data collection and storage, leading to more efficient use of resources.

These benefits collectively contribute to a more secure, efficient, and reliable safety data management system, ultimately reducing risks associated with data handling and decision-making. As such, SDG&E is not currently pursuing a larger team to manually collect and manage safety data in lieu of a centralized data management system.

B. Alternative 395: Dedicated Contractor Safety Field Oversight Team Mitigation

This is an alternative approach associated with C301 and C304. As described above in C301 and C304, SDG&E's Contractor Safety Program oversees and manages Class 1 Contractors to confirm work is being performed safely and risk is being managed effectively. This program is primarily managed by SDG&E's CSS department and is comprised of both

internal and contracted resources to support the various activities to confirm contractors are working safely.

This Alternative Mitigation would include adding internal resources (vs. contracted support staff) to support these contractor field safety oversight activities. A dedicated team of internal resources would be present in the field to oversee contractor work to promote safe work practices, including field safety observations and engagements, contractor event documentation, pre-construction meetings, and weekly/monthly meetings.

Having a dedicated team of internal support for these efforts could provide several risk reduction benefits, including:

1. **Hazard Identification and Mitigation:** An internal field safety oversight team could promote safe work practices and potentially improve identification of potential hazards for mitigation before contractors begin work.
2. **Compliance with Regulations:** An internal field safety oversight team could continue SDG&E's current practice of confirming and validating that all contractors comply with relevant safety regulations and standards, potentially reducing the likelihood of safety incidents.
3. **Enhanced Communication:** An internal field safety oversight team could provide enhanced two-way safety communication. Clear communication channels between SDG&E and its Class 1 Contractors improves the dissemination of safety protocols and procedures so that everyone is on the same page with respect to safety.
4. **Increased Training Verification:** An internal field safety oversight team could provide improved continuity of verification of training records as internal resources would remain on staff whereas contracted field safety support functions may decrease as projects conclude. Regular safety training for contractors confirms they are aware of the latest safety practices and protocols, which helps in maintaining a safe working environment.
5. **Potential Incident Reduction:** An internal field safety oversight team could serve as additional resources for proactive safety management. The level of contracted support varies as projects start and end. Use of internal resources could

support administrative functions on a continuous basis and assist with proactive safety management to potentially reduce incidents and near misses.

While this Alternative approach could provide several risk reduction benefits, it is not currently planned as SDG&E believes the approach described above in C301 and C304 provides more benefits. Given the fluctuation in workload and the required expertise to perform contractor safety oversight functions across various work types, SDG&E leverages contracted support in lieu of internal resources. Internal employees provide less flexibility to make adjustments based on work scope, workload, and required skill set. Therefore, this Alternative Mitigation is not currently planned.

VI. HISTORICAL GRAPHIC

As directed by the Commission in the Phase 2 Decision, this section illustrates the accomplishments in safety work and the progress in mitigating safety risks over the two immediately preceding RAMP cycles. A bar chart graphic is employed to depict historical progress. This graphic uses a key metric that aligns with Company safety goals to illustrate trends in historical progress and identify remaining tasks necessary to continue mitigating risks.

Figure 2
Contractor Safety Risk Mitigation
DART Rate

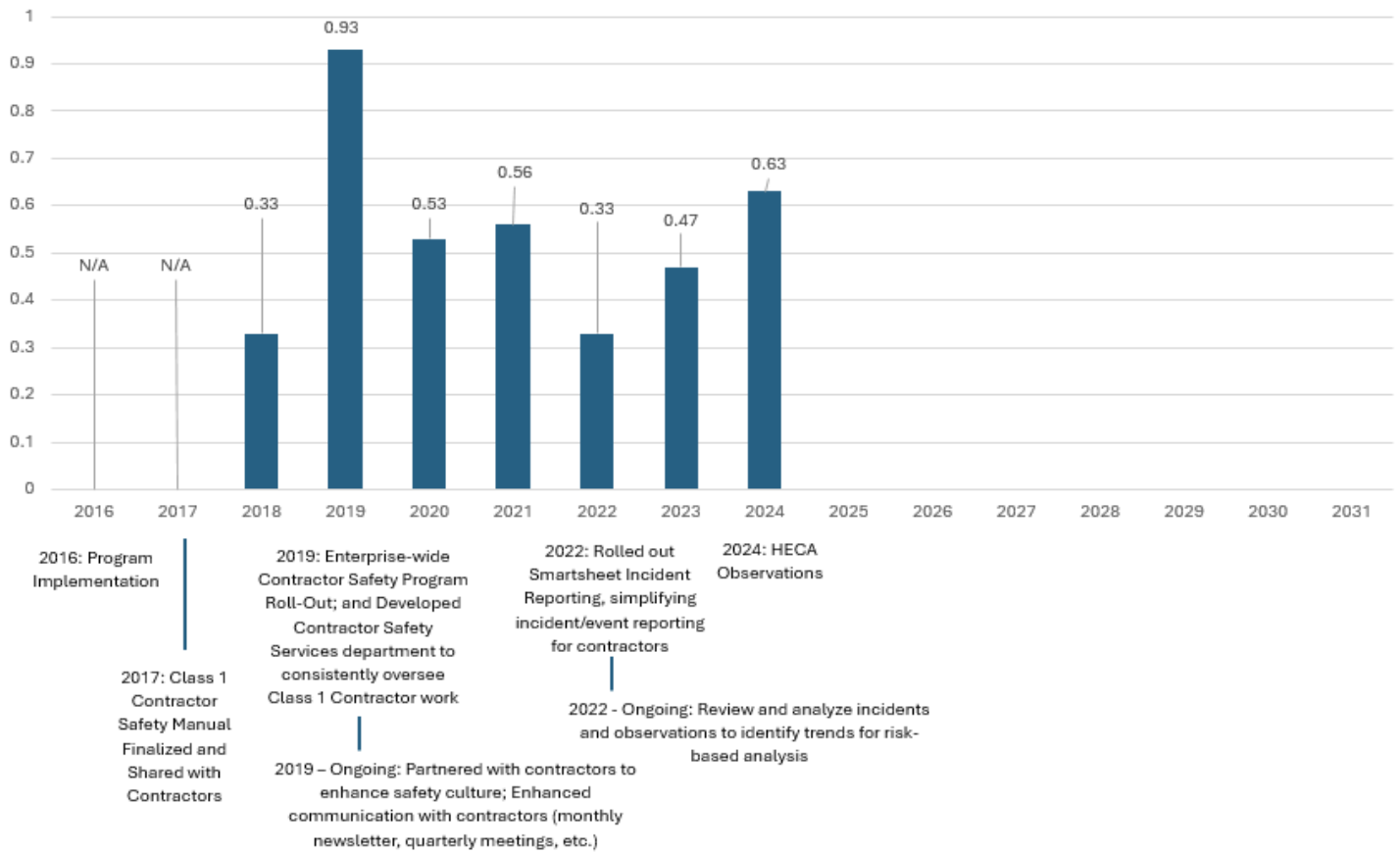


Figure 2 above shows the historical safety work activities completed using the Contractor Days Away, Restricted and Transfer (DART) Rate²⁹ from 2016-2024. SDG&E began tracking DART Rate for Class 1 Contractors in 2018. The DART Rate is calculated based on the number of OSHA-recordable injuries resulting in Days Away from work and/or Days on Restricted Duty or Job Transfer, and hours worked. (DART Rate = DART Cases times 200,000 divided by contractor hours worked.)

The safety work that remains to be performed is addressed in the controls/mitigations detailed above.

²⁹ Contractor DART Rate is Metric No. 19 in SDG&E’s 2024 Safety Performance Metrics Report, filed on April 1, 2025.

ATTACHMENTS

ATTACHMENT A
CONTROLS AND MITIGATIONS WITH REQUIRED COMPLIANCE DRIVERS

The table below indicates the compliance Drivers that underpin identified controls and mitigations.

ID	Control/Mitigation Name	Compliance Driver
C301	Class 1 Contractor Safety Program	CPUC

ATTACHMENT B
CONTRACTOR SAFETY - REFERENCE MATERIAL
FOR QUANTITATIVE ANALYSES

The Phase 3 Decision at RDF Row 10 and Row 29 directs each utility to identify Potential Consequences of a Risk Event using available and appropriate data.³⁰ Appropriate data may include Company specific data or industry data supplemented by the judgment of subject matter experts. Provided below is a listing of the inputs utilized as part of this assessment and a description of the data applied.

Risk Data	Source Type	Source Information
OSHA Industry Rates	External Data	<u>Agency:</u> Bureau of Labor Statistics <u>Link:</u> https://www.bls.gov/web/osh/table-1-industry-rates-national.htm#soii_n17_as_t1.f.1 <u>Description:</u> Comparing SDG&E OSHA rate to industries OSHA rate.
TRC Rate Safety Management System (SMS)	External Data	<u>Agency:</u> Indiana University of Pennsylvania <u>Link:</u> https://www.sciencedirect.com/science/article/pii/S0001457513002972#sec0060 <u>Description:</u> Safety Management System has an effectiveness of 9%.
The Role of Statistical Software in Data Analysis	External Data	<u>Department:</u> Social Science Research Network <u>Link:</u> https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2532326 <u>Description:</u> Statistical Software has an 80% positive impact on their research result as compared manual data entry.
Financial Consequences	External Data	<u>Agency:</u> Centers for Disease Control and Prevention <u>Link:</u> https://wisqars.cdc.gov/cost/?y=2022&o=TAR&i=0&m=3000&g=00&s=0&u=TOT

³⁰ D.24-05-064, RDF Row 10 and Row 29.

Risk Data	Source Type	Source Information
		<p>AL&u=AVG&t=COMBO&t=MED&t=LIFE&t=WORK&a=5Yr&g1=0&g2=199&a1=0&a2=199&r1=MECH&r2=INTENT&r3=NONE&r4=NONE&c1=NONE&c2=NONE</p> <p><u>Description:</u> Centers for Disease Control and Prevention estimated the cost of the injury as per the cause.</p>
Contractor Safety Program Oversight	Internal SME Data	<p><u>Description:</u> Hiring all the employees rather than the contractor would be 20% less effective.</p>

ATTACHMENT C

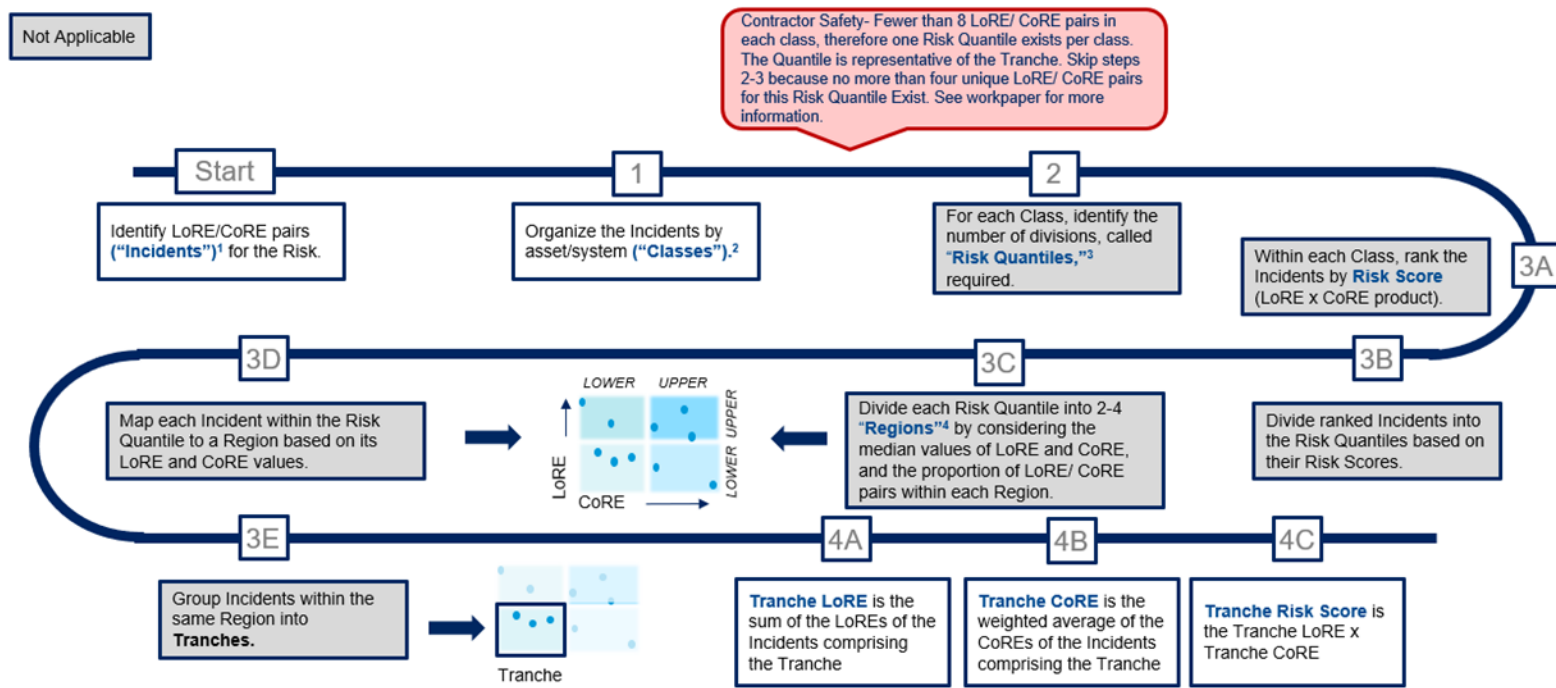
CONTRACTOR SAFETY - SUMMARY OF ELEMENTS OF BOW TIE

SUMMARY OF ELEMENTS OF BOW TIE			
ID	Control/Mitigation Name	Drivers Addressed	Consequences Addressed
C301	Class 1 Contractor Safety Program Management	DT.1, DT.2, DT.3, DT.4, DT.5, DT.6, DT.7, DT.8, and DT.9	PC.1, PC.2, PC.3, PC.4, PC.5, PC.6, and PC.7
C2	Contractor Safety Field Oversight	DT.1, DT.2, DT.3, DT.4, DT.5, DT.6, DT.7, DT.8, and DT.9	PC.1, PC.2, PC.3, PC.4, PC.5, PC.6, and PC.7
M1	Risk Informed Class 1 Contractor Safety Program Management	DT.1, DT.2, DT.3, DT.4, DT.5, and DT.7	PC.1, PC.2, PC.4, PC.5, PC.6, and PC.7

ATTACHMENT D

CONTRACTOR SAFETY - APPLICATION OF TRANCHING METHODOLOGY

A sample walkthrough of the Homogeneous Tranching Methodology (HTM) as outlined in Volume 1, Chapter RAMP - 3: Risk Quantification Framework is provided.



NOTES

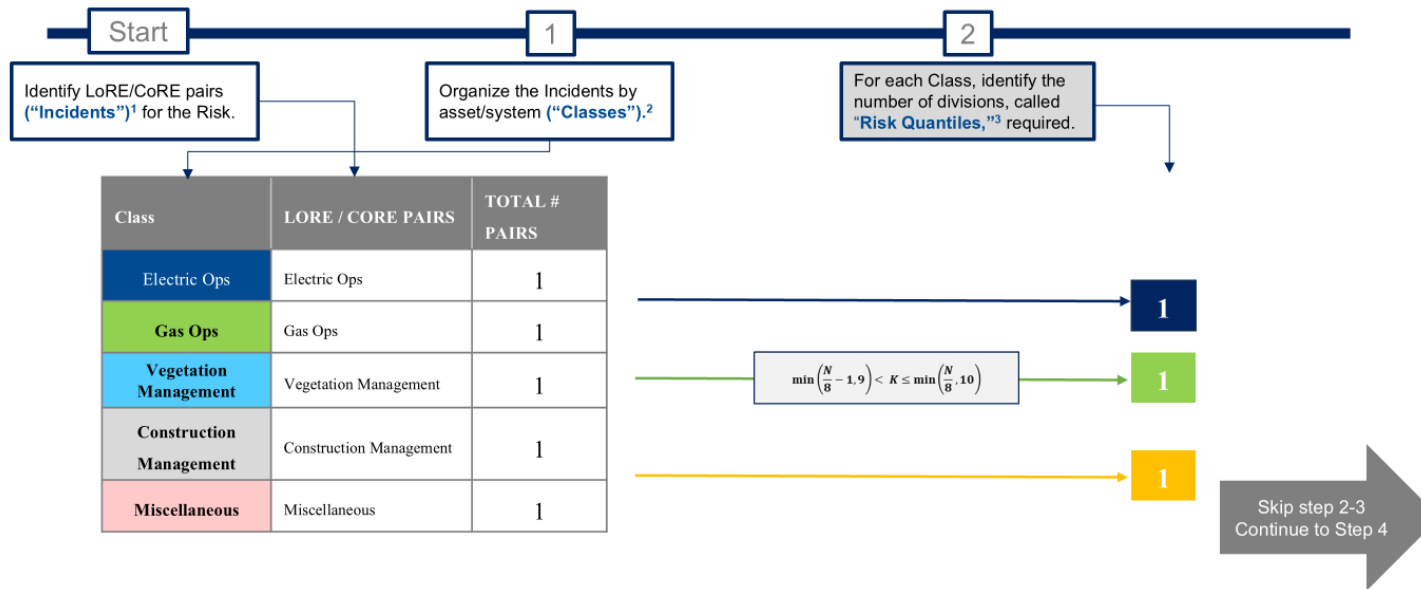
¹For example, **Incidents (or "Risk Incidents")** for Contractor refer to safety incidents.

²For example, **Classes (or "Asset Classes")** for Contractor Safety include Electric Ops, Gas Ops, Vegetation Management, Construction Management, Miscellaneous .

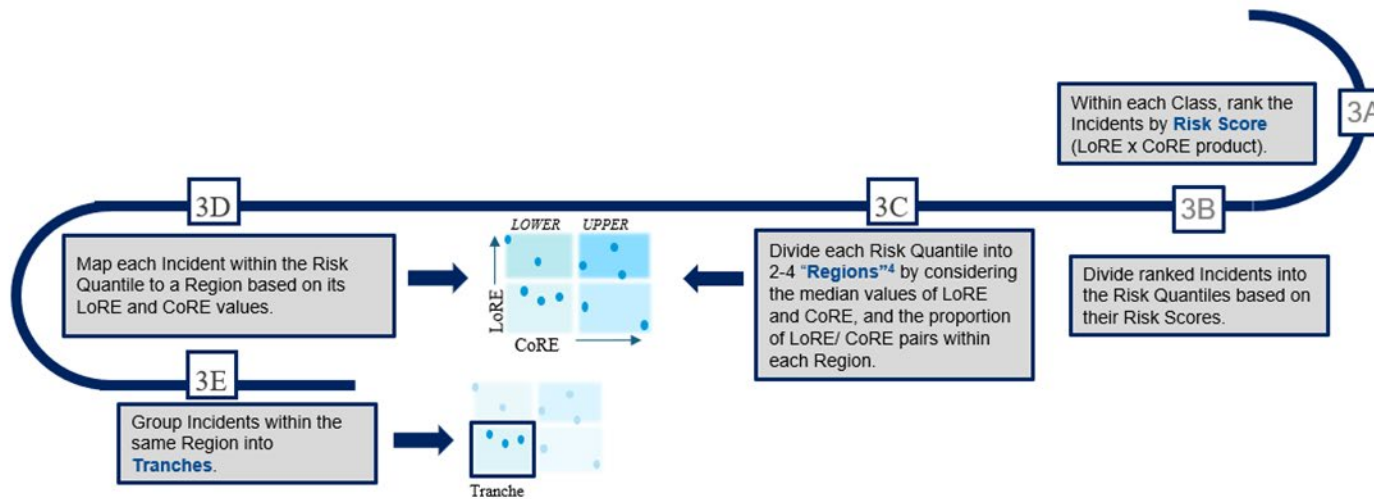
³**Quantiles** are divisions of equal numbers of incidents (quartiles have 4 divisions, quintiles have 5, etc.) The number of incidents dictates the number of quantiles needed.

⁴The four **Regions** are: 1. Lower LoRE-Lower CoRE (LL-LC), 2. Lower LoRE-Upper CoRE (LL-UC), 3. Upper LoRE-Lower CoRE (UL-LC), and 4. Upper LoRE-Upper CoRE (UL-UC).

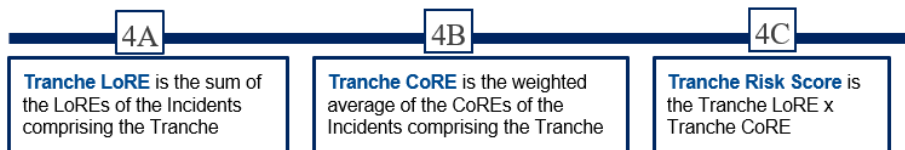
Not Applicable



Not Applicable



Not Applicable



Class	Risk Quantile	Incident (LoRE/CoRE) Pair	Risk Quantile Region	Tranche	4A	4B	4C
					Tranche LoRE	Tranche CoRE	Tranche Risk Score
Electric Ops	1	Electric Ops	None	Electric Ops	5.0	\$0.19M	\$0.97M
Gas Ops	1	Gas Ops	None	Gas Ops	10.50	\$0.53M	\$5.59M
Vegetation Management	1	Vegetation Management	None	Vegetation Management	7.50	\$0.24M	\$1.78M
Construction Management	1	Construction Management	None	Construction Management	15.83	\$0.23M	\$3.62M
Miscellaneous	1	Miscellaneous	None	Miscellaneous	22.33	\$0.12M	\$2.61M