



Risk Assessment Mitigation Phase

(SCG/SDG&E-RAMP-A) Overview and Approach

May 17, 2021

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RAMP-A: OVERVIEW AND APPROACH

I. RAMP OVERVIEW

A. Introduction

San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCalGas) (individually, Company, and collectively, Companies) present their respective 2021 Risk Assessment Mitigation Phase (RAMP) Reports (or Report). The 2021 RAMP Reports continue the Companies' risk-informed decision-making framework processes and the journey of the California investor-owned utilities' (IOUs) efforts over the past several years by incorporating in this Report the "quantitative approach to risk assessment and risk prioritization"¹ approved by the Commission in D.18-12-014, the Safety Model Assessment Proceeding (S-MAP) Settlement Agreement Decision (Settlement Decision).

The instant RAMP proceedings are considered the first phase of each Company's next General Rate Case (GRC), Test Year (TY) 2024. "The purpose of the RAMP is 'to examine the utility's assessment of its key risks and its proposed programs for mitigating those risks.'"² Consistent with this purpose, the 2021 RAMP Reports focus on each Company's key safety risks and the current and proposed activities to help mitigate those risks. Specifically, SDG&E's Report presents nine risk chapters (eight of which are specific to SDG&E), SoCalGas's Report presents seven risk chapters (six of which are specific to SoCalGas), and each Company's Report contains one joint risk chapter (Cybersecurity).

RAMP-A provides an overview of

- the requirements for the Companies' RAMP Reports (including the ten major components and the workshop requirement);
- how the Companies have met the requirements;
- changes and updates to the Companies' 2021 RAMP Reports, along their development timeline, including responses to intervenor comments and workshop feedback;
- the guiding principles behind the Reports; and
- the organization of each risk chapter.

¹ Decision (D.)18-12-014 at 28.

² D.14-12-025 at 31 (citation omitted).

The selection of RAMP risks is described in each Company’s RAMP Chapter B. Each identified RAMP risk is discussed in detail in the individual risk chapters associated with a particular risk event³ and complies with the directives in the Settlement Decision, as discussed below and in Chapter C.

B. Summary of RAMP Requirements

Although these are not the Companies’ first RAMP Reports implementing the methodologies and processes adopted in the Settlement Decision,⁴ the 2021 RAMP Reports will be the first associated with a subsequently filed GRC Application for the Companies.⁵ The 2021 RAMP Reports were developed in accordance with Commission guidance and the directives adopted in D.14-12-025, D.16-08-018, the Settlement Decision, and D.20-09-004.⁶ The Reports also reflect lessons learned from the Companies’ 2019 RAMP Reports as well as from the RAMP filings of Pacific Gas and Electric Company (PG&E) and Southern California Edison Company (SCE). As required by the RAMP 2019 Final Decision, the Reports also “address and consider...the comments and suggestions by intervenors regarding the 2019 RAMP Report and further improvement of the RAMP process.”⁷

³ D.18-12-014 at Attachment A, A-2 – A-4, provides a glossary of the terms used in this 2021 RAMP Report.

⁴ See D.18-12-014, which adopted the 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.

⁵ D.20-09-004 (2019 RAMP Final Decision) closed the Companies’ 2019 RAMP proceedings and clarified that the Companies’ respective 2019 RAMP Reports would not be integrated into each Company’s next GRC Application.

⁶ In addition to the RAMP requirements set forth in various risk-related proceeding directives, the Companies’ TY 2019 GRC Decision (D.19-09-051) required inclusion of a re-testing implementation plan related to pipelines under the Pipeline Safety Enhancement Plan (PSEP) Phase 2B as part of SoCalGas’s 2019 RAMP filing, and provides specific items to be included in this plan. (D.19-09-051, Ordering Paragraph 15 at 779-780.) As discussed in SoCalGas’s 2019 RAMP Report (at page RAMP A-3), SoCalGas requested and received approval from the CPUC Executive Director for an extension of time to comply with this requirement. In compliance with the authorized extension (see Letter from CPUC Executive Director Alice Stebbins, dated November 14, 2019), SoCalGas will include the required re-testing implementation plan as part of its TY 2024 GRC Application.

⁷ D.20-09-004 at 18-19 (Ordering Paragraph 1). This chapter (RAMP-A) includes discussion of intervenor feedback that has been incorporated into the Companies’ RAMP Reports. RAMP-E includes discussion of all types of feedback, including feedback that has been considered but has not been incorporated into the Companies’ RAMP Reports.

In brief, the Settlement Decision adopted the following required steps:⁸

- Building a Multi-Attribute Value Function (MAVF) (Step 1A);
- Identifying Risks for Investor-Owned Utilities' Enterprise Risk Register (Step 1B);
- Risk Assessment and Risk Ranking in Preparation for RAMP (Step 2A);
- Selecting Enterprise Risks for RAMP (Step 2B); and
- Mitigation Analysis for Risks in RAMP (Step 3).

The Companies' compliance with Steps 1A and 3 of the Settlement Decision are set forth in detail in Chapter SCG/SDG&E RAMP-C. The Companies addressed the requirements in Steps 1B and 2B of the Settlement Decision in Chapters SCG/SDG&E RAMP-B. The workshop requirement in Step 2A of the Settlement Decision is discussed in this Chapter. Addressing the feedback received, as discussed in Step 2A of the Settlement Decision, is addressed in this chapter and also in detail in Chapter SCG/SDG&E RAMP-E.

In addition to the above, the Settlement Decision also required utilities to satisfy the "Ten Major Components of RAMP Filings."⁹ A roadmap demonstrating compliance with the ten components of RAMP filings is provided below.

II. SUMMARY OF APPROACH TO MEET RAMP REQUIREMENTS

This section explains how the Companies have complied with the Settlement Decision's "Ten Major Components of RAMP Filings"¹⁰ and the requirement to host a publicly noticed workshop. This section also describes where the Companies have changed and updated their 2021 RAMP Reports, including changes and updates in response to intervenor comments, consistent with the Commission's directive in the 2019 RAMP Final Decision as well as workshop feedback.¹¹

A. Approach to Complying with the Settlement Decision's Ten Major Components of RAMP Filings and Roadmap.

The Companies' approach to compliance with the Settlement Decision's enhanced ten major components and a roadmap explaining where these components are addressed in the

⁸ D.18-12-014 at Attachment A, A-4.

⁹ See D.18-12-014 at 33-35 (citing D.16-06-018).

¹⁰ D.18-12-014 at 33-35.

¹¹ Intervenor comments and workshop feedback are also addressed in SCG/SDG&E RAMP-E.

Reports is provided below. Together with the enterprise risk management framework presented in Chapters SCG RAMP-B and SDG&E RAMP-B, this approach satisfies the Cycla ten-step evaluation process, as enhanced by the Settlement Decision.¹²

1. **Identify top risks.** The Companies identified their respective top risks as part of developing their respective 2020 Enterprise Risk Registries (ERR), which were used as the starting points for the RAMP Reports. Details of the ERR process are described in each Company's respective RAMP-B chapters.
2. **Describe the controls or mitigations currently in place.** Consistent with the GRC methodology of starting with the last year of recorded information, the Companies generally consider mitigations that were in place as of the end of 2020 to be controls and denotes these existing mitigations with a control ID. The baseline costs represent actual costs incurred for controls in 2020. The controls are identified and discussed in Section III of each risk chapter. Baseline and forecasted costs and units for the controls are identified in Section V of each risk chapter.
3. **Present plan for improving the mitigation of each risk.** Section IV of each risk chapter includes a table identifying the existing and planned new mitigating activities that represent the risk mitigation plan for that risk. Planned new mitigations, *i.e.*, mitigations that are planned to begin after the start of 2021, are denoted with a mitigation ID. Controls that are expected to continue maintain their control ID. The Companies plan to request funding for the risk mitigation plans described in each of the individual risk chapters in their next GRC applications, which will be filed by May 15, 2022.¹³
4. **Present two alternative mitigation plans that were considered.** Section VI within each of the individual risk chapters present at least two considered alternative mitigations with associated costs and Risk Spend Efficiencies (RSEs). The Companies' alternative mitigation plans presented in the RAMP Reports are

¹² D.18-12-014 at 33-35.

¹³ The risk mitigation plans are contingent on resource availability, permitting, operational compliance, unanticipated events, and other factors, and therefore the Companies' identified mitigations may be subject to constraints and/or delays.

specific individual activities that were considered in the process of determining the Companies' risk management efforts but are not currently proposed.¹⁴

5. **Present an early stage “risk mitigated to cost ratio” or related optimization.**

The Companies calculated an RSE for each mitigation at the identified tranche, where feasible, and provided a summary of the post-mitigation Likelihood of Risk Event (LoRE), Consequence of Risk Event (CoRE), and risk score analysis within each individual risk chapter. Details of the pre- and post-mitigation analysis are included in the workpapers. As discussed further in Chapter SCG/SDG&E RAMP-C, an explanation is provided in Section V of the applicable risk chapter where an RSE is unavailable for a particular mitigation (consistent with SPD guidance).¹⁵ In addition, Appendix C-1 provides a ranking of each Company's mitigations by RSE, where an RSE analysis is performed, consistent with the Settlement Decision.¹⁶ Mitigations with RSEs are listed in descending order by RSE.

6. **Identify lessons learned in the current round to apply in future rounds.**

Consistent with the approach the Companies took when preparing their 2019 RAMP Report under the current S-MAP framework, “lessons learned” from the Companies' 2019 RAMP proceeding, as well as from the RAMP filings of PG&E and SCE are discussed in Chapter SCG/SDG&E RAMP-E. The SCG/SDG&E RAMP-E discussion also meets the RAMP 2019 Final Decision's requirement to “address and consider ... the comments and suggestions by intervenors regarding the 2019 RAMP Report and further improvement of the RAMP process.”¹⁷

¹⁴ Although an increase/decrease in the scope of activities may be a feasible approach to alternatives, the individual risk chapters (with the exception of the Cybersecurity risk chapter) do not take this approach, based on feedback from the Commission's Safety and Policy Division (SPD).

¹⁵ See Safety Policy Division Staff Evaluation Report on PG&E's 2020 Risk Assessment and Mitigation Phase (RAMP) Application (A.) 20-06-012 (November 25, 2020) at 5 (“SPD recommends PG&E and all IOUs provide RSE calculations for controls and mitigations or provide an explanation for why it is not able to provide such calculations.”).

¹⁶ D.18-12-014 at Attachment A, A-14 (Mitigation Strategy Presentation in the RAMP and GRC).

¹⁷ D.20-09-004 at 18-19 (Ordering Paragraph 1).

7. **Move toward probabilistic calculations, to the maximum extent possible.** The 2021 RAMP Reports apply the probabilistic analysis required by the Settlement Decision, and make strides toward incorporating more probabilistic analysis than in the 2019 Report. The Companies will continue working toward a more probabilistic analysis in future RAMP reports, as further discussed in Chapter SCG/SDG&E RAMP-C.
8. **For those business areas with less data, improve the collection of data and provide a timeframe for improvement.** The Companies continue to position themselves to continually improve data collection efforts and therefore improve the risk assessment process. Further discussion on data collection can be found in Chapters SCG/SDG&E RAMP-C and E.
9. **Describe the company's safety culture, executive engagement, and compensation policies.** Chapters SCG RAMP-D and SDG&E RAMP-D are dedicated to describing the Companies' respective safety cultures, executive engagement, and compensation policies.
10. **Respond to immediate or short-term crises outside of the RAMP and GRC process.** Although the 2021 RAMP Reports identify the Companies' respective key safety risks, the Companies respond to immediate or short-term needs outside of the RAMP efforts and continually manage risk. An example is the unexpected and unprecedented need for the Companies to assess and reprioritize certain resources beginning in early 2020 to address the health and safety issues associated with the COVID-19 Pandemic, as described in SCG-CFF-3 and SDG&E-CFF-3.

B. RAMP Workshop Requirement

The Settlement Decision requires the Companies to host a publicly noticed workshop in preparation for the RAMP filing. Based on interest, the Companies hosted two workshops that were properly noticed and held on October 15, 2020, and January 27, 2021. The Companies also held a pre-filing technical sub-workshop on November 17, 2020. The intent of the workshops was to inform and educate stakeholders and SPD regarding the Companies' upcoming filings and

gather input from stakeholders. As required by the Settlement Decision,¹⁸ the Companies provided the following information to the interested parties on October 1, 2020, in advance of the first workshop:

- their preliminary list of RAMP risks;
- the safety risk score for each risk in the ERRs; and
- the multi-attribute risk score for the top ERR risks.

The Companies appreciate the input received during the workshops, which has been incorporated or otherwise addressed, as described below, in the 2021 RAMP Reports.¹⁹

C. Changes from the 2019 RAMP

The Companies informed stakeholders during the October 15, 2020 workshop of the following broader changes made from the 2019 RAMP Reports, primarily based on stakeholder feedback up to that point.

1. Change to Risk Spend Efficiency Approach

The Companies informed stakeholders at the workshop of their intention to review all current and newly planned activities to evaluate the usefulness and ability to create an RSE, and that an RSE value would be included when meaningful data or SME judgment is available. The Companies will provide an explanation for each mitigating activity without an RSE value. This approach incorporates feedback on the Companies' 2019 RAMP Reports, in which the Companies generally did not calculate RSE values for mitigations that are performed to maintain compliance with state and federal mandated requirements that were controls.

The Companies also informed workshop participants that a single RSE value would reflect the forecast cost of a mitigation and not a range of RSE values (as the Companies presented in their 2019 RAMP Reports), in response to previous stakeholder feedback.

2. Incorporation of Additional Attributes

The workshops also provided information regarding the Companies' intent to include a fourth attribute to the MAVF that would focus on the impacts to customers, employees, public,

¹⁸ D.18-12-014 at Attachment A, A-10.

¹⁹ For example, the Companies considered input received from SPD and other interested parties in determining the modeling of a fourth MAVF attribute (*see* SCG/SDG&E RAMP C). In accordance with the Settlement Agreement (D.18-12-014 at Attachment A, A-10), the Companies also considered input in determining a final list of risks to be addressed in the RAMP Report.

government and/or regulators from a risk event, based in part on previous stakeholder feedback. The idea of incorporating this fourth attribute is to provide a means to capture how risk events affect customers, employees, public, government and/or regulators that are not captured in the other attributes. By adding an attribute to their MAVF, the Companies are the first in the State to apply a fourth attribute beyond the minimum attributes of safety, financial, and reliability in their RAMP Reports. Discussed below (Section II-D-2) are additional details regarding the evolution of that fourth attribute. The Companies also updated lower level attributes of the MAVF. An “acres burned” sub-attribute was added to the safety attribute.

3. Modeling Public Safety Power Shut-off (PSPS) De-Energizations

SDG&E informed stakeholders that within its Wildfire risk chapter (SDG&E-Risk-1), PSPS impacts would be modeled as a risk that impacts the overall total wildfire risk score, as well as a mitigation to the wildfire risk. Although PSPS might be considered by some stakeholders as a separate risk, PSPS events are directly tied to wildfire mitigation and would not otherwise independently exist. Furthermore, without PSPS, the wildfire risk would be significantly higher. SDG&E thus calculates PSPS impacts as an aspect to the wildfire risk and calculates an RSE for PSPS as a mitigation. SDG&E informed stakeholders that, because PSPS as a mitigation has an impact to customers, the overall wildfire risk assessment comprises two components: the risk of a catastrophic wildfire and the PSPS impacts to customers. Thus, the impact of PSPS is incorporated into the mitigation and the risk assessment.

4. Additional Number of Tranches

The Companies informed workshop participants of their intent to subdivide to a greater degree the risk-reducing activities into tranches. As in the previous RAMP, and as described in more detail below in Section D.3 and RAMP-E, this current RAMP filing reflects the subdivision of risk-reduction activities via a multi-tiered methodology. In addition to some of the risks in the 2021 RAMP now having more tranced mitigations than similarly scoped risks in the 2019 RAMP, the Companies have also identified a larger number of mitigations with additional tiers in the 2021 RAMP.

Many of the additional first tier tranced mitigations – mitigations that have their own risk profiles – are the result of an increased understanding of RAMP qualifying criteria by members of the business units and quantitative analysis teams who have been through multiple RAMP and risk spend accountability report cycles. An example of a first-tier tranced

mitigation is in the Electric Infrastructure Integrity (EII) chapter, where underground cable is discussed and quantified separate from electrical switching equipment. In this regard, the mitigation discussed is considered a tranching mitigation.

A second tier occurs among a particular asset class where the risk profiles of that asset can be subdivided further. Using the same example as above, and new for the 2021 RAMP, electrical switching equipment has been tranching into three separate subdivisions, each with its own quantitative analysis, including cost, risk reduction, and RSE. Similarly new for the 2021 RAMP, for some gas instances, pipeline assets have been further tranching into two separate subdivisions, each with its own quantitative analysis, including cost, risk reduction, and RSE.

5. Consolidation of Dig-In Risks Into One Risk Chapter

The Companies informed workshop participants of their intent to consolidate risks associated with dig-ins on the medium pressure pipeline system and dig-ins on the high-pressure pipeline system into one risk chapter, titled Excavation (Dig-In) Damage to the Gas System (SCG-Risk-2 and SDG&E-Risk-7). Consolidating these risks into one chapter is an efficient and effective way to show that the majority of mitigations included in the control and mitigation plan are essentially the same, streamlining the review of the risk activities for stakeholders. As applicable, the mitigations are tranching reflecting the different risk profiles associated with high and medium pressure pipelines.

6. Inclusion of Internal Labor

Internal labor for applicable baseline controls (*e.g.*, internal labor to attend training, adhering to internal protocols or standards, internal time spent at meetings, etc.) is now generally included in the baseline and forecasted cost estimates in the Reports.

7. Creation of Cross-Functional Factors

In response to feedback received, the Companies created cross-functional factor (CFF) volumes to address some of the various topics raised by parties that would not be standalone risk chapters. CFFs, similar to the cross-cutting factors first presented by PG&E in their 2020 RAMP submission, provide additional information regarding foundational, safety-related initiatives that are associated with more than one RAMP risk.

For example, the Companies have included a Safety Management Systems (SMS) CFF, in part based on Commission guidance in the TY 2019 GRC Decision that many of the Office of the Safety Advocate's (OSA) recommendations in that proceeding were "better addressed in

SoCalGas' next RAMP filing.”²⁰ OSA offered several suggestions regarding enhancements to the Companies' respective safety culture and safety management systems, in particular, integration of American Pipeline Institute (API) Recommended Practice (RP) 1173. Accordingly, the Companies are including supplemental information on safety culture and their safety management systems in Chapter RAMP-D of their respective RAMP Reports and Safety Management Systems CFF volumes (SDG&E-CFF-7 and SCG-CFF-6).

D. Changes and Responses Subsequent to the October 15, 2020, Pre-RAMP Filing Workshop

The Companies also incorporated additional changes to their approach in the RAMP Reports following the October 15, 2020, pre-filing workshop, as described below.

1. Fourth Attribute

The Companies presented a preliminary MAVF²¹ at the October 15, 2020 workshop, with the understanding that the risk quantification framework may evolve prior to filing the RAMP Report (as permitted by the Settlement Decision). Representatives from the Protect our Community Foundation (PCF) and The Utility Reform Network (TURN) both raised questions during the first workshop regarding the Companies' new fourth attribute, which at the time was called “Trust/Reputation.” PCF questioned whether the attribute was – either intentionally or unintentionally – a way to consider the financial impact of a risk event on shareholders. TURN commented that it is not necessarily opposed to inclusion of the attribute but believes that specifications of the attribute are incomplete and that additional clarity is needed to avoid overlap with other attributes.

Based on this feedback, the Companies changed the name of their fourth attribute from Trust/Reputation to Stakeholder Impacts, to better reflect the attribute's intent and function, and provided information regarding this update to stakeholders at the January 27, 2021 workshop. The Companies explained that the elements of the attribute and the anticipated modeling remained the same. Stakeholders again voiced concerns similar to those expressed during the first workshop.

²⁰ D.19-09-051 at 97.

²¹ The Company refers to its MAVF herein as the Risk Quantification Framework (*see* discussion in SCG/SDG&E RAMP-C).

Subsequent to the second workshop, the Companies continued to review stakeholder feedback along with the intended use of this fourth attribute and again made modifications – changing the name to “Stakeholder Satisfaction,” and also changing the weighting of the attribute to 2% instead of 5%, among other modifications. Additional information regarding this revised fourth attribute is provided in Chapter SCG/SDG&E RAMP-C.

2. MAVF Weights

The Companies changed the final weight of the Reliability MAVF attribute to 23% (from an initial 20% weighting estimate) and the final weight of the fourth attribute to 2% (from an initial 5% weighting estimate), to align with the changes to the fourth attribute described above. The weight of the other two MAVF attributes did not change.

3. Granularity of Tranching

As a follow-up to discussions during the October 15, 2020 workshop, the Companies held a technical sub-workshop on November 17, 2020, regarding tranching. As a result of discussions during this workshop, the Companies agreed to further examine how appropriate tranching could be applied consistently at the risk event level wherein one such result was the appropriateness to tranche mitigations that were occurring in High Consequence Area (HCA) locations separate from non-HCA locations. HCAs are areas along the gas transmission right-of-way where there is increased building density or a proximity to certain types of gathering locations where there is an expected concentration of population. Areas of known greater consequential impact to the public have different risk profiles compared to high pressure pipe not located in an HCA.

While tranches had previously been discussed, it continued to be an area of potential confusion, which warranted a separate working group discussion on November 17, 2020 and further elucidation here. Tranches are subdivisions of a group of assets or systems that align with different risk profiles.²² As TURN indicated, “all of the assets in each tranche should be grouped so that there are no significant differences in either the LoRE or the CoRE of those assets. If there is a meaningful difference, the asset group needs to be broken out into more granular tranches.”²³ The Settlement Decision states “[t]he determination of Tranches will be

²² See Settlement Decision, Appendix A at A-11 (“Definition of Risk Events and Tranches”).

²³ TURN Informal Comments (February 12, 2021) at 1.

based on how the risks and assets are managed by each utility, data availability and model maturity, and strive to achieve as deep a level of granularity as reasonably possible.”²⁴ In preparing their 2021 RAMP Reports, the Companies’ used a multi-step approach to subdivide assets and systems into groups of different risk profiles that align with how the risks and assets are managed by the Companies. This is discussed further in SCG/SDG&E RAMP-E.

III. GUIDING PRINCIPLES

The Companies strive to provide uniformity and transparency in their risk presentations. The section below outlines the main assumptions and guiding principles that were globally applied throughout their 2021 RAMP Reports.²⁵ Many of these global assumptions resulted from lessons learned and are therefore also discussed in Chapter SCG/SDG&E RAMP-E.

A. The Risk Quantification Framework Analyzed Direct and Secondary Impacts

As discussed in Chapter SCG/SDG&E RAMP-C, direct and secondary impacts were analyzed for each risk event. An example of an event with a secondary impact is a prolonged power outage which leads to inoperable traffic lights that could result in an automobile accident, the consequences of which may include a serious injury and/or fatality. Each risk has its own impact model, but data regarding impacts that happen after the initial event may be difficult to discover and to utilize.

B. Presentation of Costs to Align with Risk Reduction Benefits

The purpose of RAMP is not to request funding. Any funding requests will be made in the Companies’ TY 2024 GRC applications, currently anticipated to be filed in May 2022, with supporting testimony. There, costs associated with activities presented in the 2021 RAMP Reports will be updated to, among other things, put forth specific dollar requests for funding. Accordingly, the Companies present cost information in the 2021 RAMP Reports in ranges of dollars that represent those costs for which the Companies anticipate requesting recovery in the TY 2024 GRC.

Costs are also presented in the 2021 RAMP Reports after accounting for shared service allocations to align the costs with the company that is experiencing the risk reduction benefits,

²⁴ Settlement Decision, Appendix A at A-11 (“Definition of Risk Events and Tranches”).

²⁵ Unless otherwise noted throughout the 2021 RAMP Report, these global assumptions and parameters apply to all risk areas.

consistent with RSE calculations. As explained in the TY 2019 GRC testimony, “Shared services are activities permitted by the Affiliate Transaction Rules Decision (D.) 97-12-088 that are performed by SDG&E and SoCalGas departments that are designated as utility Shared Services departments (*i.e.*, functional area) for the benefit of: (i) SDG&E or SoCalGas, (ii) Sempra Energy Corporate Center (Corporate Center), and/or (iii) any Sempra unregulated subsidiaries. Shared Assets are assets that are on the financial records of one utility, but also benefit other Sempra Energy affiliates.”²⁶ The details providing where the costs are incurred, the shared allocation percentages, and the costs after allocations are shown in the workpapers.

As discussed in more detail in SCG/SDG&E RAMP-C, the baseline costs of controls and mitigations for the 2021 RAMP Reports are the costs incurred in 2020. This is because, at the time of finalizing these RAMP Reports, the last available recorded annual financial data was 2020. Modeled after the GRC presentation, the cost forecasts presented herein include forecasts for anticipated capital expenditures over the forecast years of the next GRC cycle (2022-2024) and estimated O&M cost forecasts for TY 2024. The 2021 RAMP Reports present capital costs as a sum of the years 2022, 2023, and 2024 as a three-year total, whereas O&M costs are presented for TY 2024. All dollars are presented in direct (*i.e.*, does not include company overhead costs such as medical), constant 2020 thousands of dollars. Costs are also, where possible, assigned to one risk chapter. However, in a few cases within the RAMP Reports, a mitigation may help mitigate more than one risk and therefore may be included in multiple chapters.

The Companies provide cost and risk reduction benefit information in a consistent manner in the 2021 RAMP Reports. As such, risk reduction benefits: (1) are estimated for years 2022, 2023, and 2024 for capital programs and TY 2024 for O&M activities; (2) represent the benefiting company (*i.e.*, after company allocations); and (3) are compared for purpose of calculating a RSE to a baseline of 2020, other than the Wildfire risk chapter.²⁷ Consistently providing cost and benefit information in RAMP and for the same years as the GRC is anticipated to better enable RAMP-to-GRC integration and minimize changes, to the extent

²⁶ A.17-10-007 (cons.). Exhibit SCG-34-2R/SDG&E-32-2R, Testimony of James Vanderhye, Shared Services & Shared Assets Billing, Segmentation & Capital Reassignments (April 6, 2018) at JV-1.

²⁷ SDG&E’s Wildfire risk Chapter (SDG&E-Risk-1) uses 2021 as the baseline for RSE calculations due to the significant risk reduction expected in 2021 compared to 2020.

possible, between RAMP and GRC filings. Section V of each risk chapter presents a summary of the baseline and forecasted costs, units, and RSEs for each control and mitigation by tranche.

The Companies' accounting systems are not configured to capture all costs for the level or type of risk-management activities anticipated by the RAMP process – instead, costs are tracked by cost center (O&M) and budget code (capital). Estimates, assumptions, and available accounting data were provided by SMEs where feasible. Lessons learned associated with the level of detail and specifically for tranches are provided in Chapter SCG/SDG&E RAMP-E.

1. Treatment of Risk Mitigating Activities Presented in Risk Chapters

These RAMP Reports provide analyses of activities within the scope of the risk description (as required by the Settlement Decision) and, in some instances, also provide a qualitative discussion of certain risk mitigation activities that are otherwise out-of-scope due to the risk definition, to aid the Commission and stakeholders in developing a more complete understanding of the breadth and quality of the Companies' mitigation activities. For example, compressor station modifications that are planned to occur during the 2022-2024 period but have an in-service date beyond 2024 are discussed in SoCalGas's Incidents Related to the High-Pressure System (Excluding Dig-in) risk chapter (SCG-Risk-1); electric transmission related activities that have cost recovery through a non-GRC cost recovery mechanism are discussed in SDG&E's Electric Infrastructure Integrity risk chapter (SDG&E-Risk-2). This additional information is provided in the interest of full transparency and understanding of the Companies' activities, consistent with guidance from Commission staff and stakeholder discussions.

2. RSE Analysis

The Settlement Decision directs the Company to provide a Step 3 analysis of mitigations.²⁸ As further discussed in Chapter SCG/SDG&E RAMP-C, for mitigations where costs are not identified or not available or where data or SME judgment to quantify a benefit is not available or meaningful, such as with communication-based mitigation activities and procurement/utilization of personnel protection equipment, no RSE calculation can be provided. As mentioned above, activities for which no RSE is available are identified with explanations within Section V of the individual risk chapters.

²⁸ D.18-12-014 at Attachment A, A-11 – A-13.

IV. RAMP RISK CHAPTER ORGANIZATION AND OVERVIEW

In each individual risk chapter, the Companies describe the existing controls and new and/or incremental planned mitigations for each risk, presenting at least two alternative mitigation plans for each risk. The Companies present the following sections in each risk chapter:

1. Introduction.
2. Risk Assessment – In accordance with the Settlement Decision,²⁹ this section describes the risk bow tie, possible drivers/triggers, and potential consequences of each identified risk.
3. 2020 Controls – This section discusses how activities with recorded costs in or prior to 2020 (denoted with a control ID) help mitigate the risk.
4. 2022 – 2024 Controls and Mitigation Plan – This section discusses both planned significant changes to existing mitigations and/or planned new mitigations (denoted with a mitigation ID) that will address the risk, and includes a table informing which existing and new mitigations are planned to occur during the TY 2024 GRC's 2022 – 2024 forecast period.³⁰
5. Costs, Unit, and Quantitative Analysis Summary Tables – This section includes tables summarizing the costs, units, and RSEs for mitigations included in the risk control and mitigation plan.
6. Alternative Mitigation Plan Analysis – This section presents at least two alternative mitigation plans considered as part of the risk assessment process, including forecasted costs, units, and RSE values.
7. Appendices
 - a. Appendix A provides a summary of which elements of the bow tie are addressed by which mitigations.
 - b. Appendix B provides a summary of the source documents used in the quantitative analyses.

²⁹ D.18-12-014 at 33 and Attachment A, A-11 (Bow Tie).

³⁰ As discussed in some risk chapters, not all activities with a control ID or a mitigation ID are included in the risk control and mitigation plan for the 2022-2024 period.

In summary, the RAMP Reports provide information regarding how the Companies think about, plan for, and mitigate identified key safety risks. The RAMP Reports will inform the safety-related funding requests that the Companies will include in their respective TY 2024 GRC applications, currently anticipated to be filed in May 2022.