

Evaluation of Post-Test Years Staff Proposal on Phase 3 of Rulemaking 20-07-013

Safety Policy Division | Risk Assessment and Safety Analytics Section

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Introduction

The Assigned Commissioner's Phase 3 [Scoping Memo](#)¹ identifies the following issue: "Should the Commission consider revising or refining the Risk-based Decision-making Framework (RDF) methodology to provide more prescriptive guidance regarding Post-Test Year cost-efficiency metrics calculations for controls and risk-mitigations related to the reliability, safety, and potentially including a template with instructions?"

The Safety Policy Division (SPD) staff (Staff) review of the 2023 Pacific Gas and Electric Company (PG&E) General Rate Case (GRC) filing, the 2021 Southern Gas Company (SoCalGas) and 2021 San Diego Gas and Electric Company (SDG&E) (collectively Sempra Companies) Risk Assessment Mitigation Phase (RAMP) filings, and the 2022 Southern California Edison (SCE) RAMP filing found that the investor owned utilities (IOUs) were not consistent in how they presented the Risk Spend Efficiency (RSE) calculations for mitigations in the GRC post-test year period. In its GRC application, PG&E provided RSEs for its mitigations in each post-test year,² whereas, the Sempra Companies, in their RAMP applications, provided a single RSE calculation for the sum of the three post-test years.³ Meanwhile, SCE provided RSE information by tranche for each post-year in the GRC cycle. To calculate risk reduction for each post-test year, both PG&E and SCE annually reset the baseline for evaluation of residual risk to be the start of each respective post-test year,⁴ which the Sempra Companies have yet to do in their post-test year analyses.

The RDF adopted in D.18-12-014 and modified in D.22-12-027 does not explicitly require IOUs to provide post-test year RSE calculations or Cost-Benefit Ratios (CBRs) in their RAMP and GRC filings. At present, the language in the RDF only requires IOUs to consider the benefits of any mitigations "that are expected to be implemented prior to the GRC period under review in the RAMP submission."⁵ Further, there is no expectation in the GRC proceedings that the IOUs should estimate costs or work units for individual years beyond the test year, expecting, instead, that the IOUs use a formula-based methodology to anticipate total aggregate costs for the three post-test years based on escalation of the test year forecast. Without knowing the IOUs' expected cost-efficiency metrics calculations in each post-test year for their controls and proposed safety mitigations, stakeholders and decision-makers are unable to determine the true risk reduction benefits from one post-test year to the next.

In order to increase transparency for decision-makers and stakeholders in the RAMP and GRC proceedings, Staff recommend new guidance in the RDF that requires IOUs to provide CBRs in

¹ See Phase 3 Scoping Memo at 3 and 13.

² PG&E TY 2023 GRC Workpapers, Excel versions of WPs: "20220301, Updated Risk Model" folder.

³ Sempra 2024 GRC Exhibit: SCG-03-S-2R/SDG&E-03-S-2R, November 2022. Pg. 5

⁴ Safety Policy Division Staff Evaluation Report on the Southern California Edison Company's 2022 Risk Assessment and Mitigation Phase (RAMP) Application (A.)22-05-013, Pg. 12

⁵ D.22-12-027, Appendix A, A-10 and A-11.

each of the GRC post-test years, by tranche, for controls and mitigation proposals that are expected to reduce risk (see Appendix A).

Discussion

When considering the behavior of mitigations, there is a distinction between maintenance-type mitigations that serve to maintain the same level of risk and reducing-type mitigations that seek to permanently reduce the level of risk (see Definitions in Appendix A). The cost-efficiency metrics for maintenance-type mitigations will be the same from one year to the next if the same maintenance work is performed at approximately the same cost. Reducing-type mitigations will shift the risk score downward permanently for the life of the new asset, so a new baseline level of risk will exist for each year after a shift is made. The total potential number of work units to be mitigated is called the ‘universe of risk’; this number will decrease with reducing-type mitigations. The cost efficiency for reducing-type mitigations in subsequent years will then reflect the smaller remaining universe of risk. Staff believe the following approach will highlight and provide more transparent and effective-risk mitigation for post-test years.

1. Reason for Post-Test Year Cost-Benefit Ratios

The RDF requires IOUs to file CBRs on both controls and mitigations as ordered by Phase 1 of this proceeding.⁶ It is helpful for decision-makers in GRCs to know the CBR year-by-year for control and mitigation proposals. Specifically, examination of CBRs for reducing-type mitigations would lead to an understanding of whether such proposals have diminishing returns over the rate case period. The post-test year CBRs for reducing-type mitigations could also be compared against the post-test year CBRs for maintenance-type mitigations that typically would remain constant across all of the post-test years. Having access to these year-by-year calculations will allow decision-makers to determine if continuing investment in reducing-type mitigations at the proposed amounts will continue to produce cost-effective risk mitigation for post-test years. Therefore, IOUs should submit post-test year CBRs for all control and mitigation programs.

2. Tranche Requirement

For the post-test year CBRs to be useful, the underlying asset must be divided into enough risk tranches that the effect of prioritizing mitigations in the highest-risk tranches can be reflected in the baseline risk score at the end of each year. The post-test year analysis will assume that the utility will ‘buy down’ the highest risk tranches first, so that the remaining residual risk in the following years is lower, and also that the available risk reduction per work unit in the remaining tranches is lower. The problem is that if mitigation work is assumed to have equal cost-effectiveness regardless of tranche, the metrics that report on future years would make it appear that the mitigations are more effective because the total remaining risk is smaller so an equal amount of work would produce a greater percentage risk reduction. To support the calculations, the Commission should authorize the IOUs to make assumptions about the future effectiveness of the risk mitigations, as long as these are clearly stated.

As an example of tranche analysis, IOUs could consider using combinations of quintiles of Likelihood of Risk Event (LoRE) and Consequence of Risk Event (CoRE). This approach would mean that portions of risk with the highest 20 percent of LoRE would be grouped within a tranche, and the highest 20 percent of CoRE would be grouped in another tranche. In combination with

⁶ D.2111009, OP1

other tranches, this system of tranche analysis would create a total Risk of 25 for LoRE * CoRE tranches. This method would support a more practical presentation of risk reduction and CBRs to facilitate review and oversight by Commission staff and other stakeholders in the RAMP and GRC proceedings.

Staff Recommendations

Staff recommend the Commission modify the RDF to require the IOUs to undertake the following:

- Provide more detailed analysis of their proposed mitigations in their RAMP and GRC filings for each of the GRC post-test years under consideration (see Appendix A).
- Submit CBRs for each of the GRC post-test years, by tranche, for all controls and proposed mitigations.
- Improve their risk-mitigation proposals in their RAMP and GRC filings for post-test years by considering and providing reasonable assumptions, historical data, methodology, baseline, and other relevant analyses.
- Consider appropriately granular tranches, then prioritize which segments of the tranches will maximize risk reduction and effectiveness of mitigation from one post-test year to the next with the remaining residual risk.

Staff expect that the proposed requirements for the GRC post-test year evaluation in RAMP and GRC filings will create additional transparency for decision-makers and stakeholders in understanding how much the IOUs intend to spend on proposed mitigations in each post-test year, the marginal risk reduction that is expected to result from the intended spending on proposed mitigations in each post-test year, and the cost-effectiveness of the proposed mitigations in each post-test year.

Appendix A
Proposed Modifications to the Risk-Based Decision-Making
Framework

(Redlined version)

Definitions

Maintenance-type Mitigations: Mitigations that reduce the same amount of risk from one year to the next if the same amount of maintenance work is performed.

Reducing-type Mitigations: Mitigations that reduce risk permanently for the life of the new asset, so that a new baseline level of risk will exist for each year after a Mitigation is implemented.

Step 2A – Risk Assessment and Risk Ranking in Preparation for RAMP

No.	Element Name	Element Description and Requirements
25.	Cost-Benefit Ratios Calculation	<p>The Cost-Benefit Ratio calculation should be calculated by dividing the dollar value of Mitigation Benefit by the Mitigation cost estimate. The values in the numerator and denominator should be present values to ensure the use of comparable measurements of Benefits and costs. The Benefits should reflect the full set of Benefits that are the results of the incurred costs.</p> <p>For capital programs, the costs in the denominator should include incremental expenses made necessary by the capital investment.</p>
<u>26.</u>	<u>GRC Post-Test Year Reporting</u>	<u>All Controls and Mitigation programs must include Cost-Benefit Ratios in each of the GRC post-test years and by Tranche.</u>