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Definition of Scoped Work and the Risk Reporting Unit

R.20-07-013 PHASE 4 STAFF PROPOSAL FOR WORKSHOP 1

November 5 2024

California Public Utilities Commission

Thanks to:

Safety Policy Division Staff

Level 4 Inc.

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Executive Summary

The concept of "mitigation program" is well defined within the Risk-based Decision-making Framework (RDF). However, SPD argues it is necessary for the Commission to consider a definition of scoped work in the context of risk mitigations before other refinements to the RDF can progress. Scoped work is a disaggregation of mitigation programs that allows Staff, parties and decision-makers to have a granular understanding of risk reduction. SPD recommends the Commission consider a definition of scoped work that requires the utilities to trace the lifecycle of the scoped work and allows scoped work to be forecastable and auditable.

At the same time SPD recognizes that the utilities face a diverse set of enterprise risks with unique characteristics that may not readily fit the ideal definition of scoped work. The workshop will discuss the complications that come with determining the proper granularity of scoped work. Moreover, the term "scoped work" is an odd nomenclature for what is being described in this proposal. The word "work" in English is an uncountable noun, which makes phrases like "each scoped work," "the number of scoped work," or even "five scoped work" appear awkward.

With this in mind, SPD recommends the Commission adopt the term Risk Reporting Unit (RRU) for inclusion within the RDF. The RRU would form the foundation for the utility's risk reporting hierarchy and enable aggregation up to the Mitigation Program scale. The RRU is also relevant to the discussion of the RMAR as well as the RAMP and GRC Data Templates, which will be discussed later in Phase 4. SPD highlight a key concern regarding the scale of the RRU: that the utility establishes an RRU that is overly granular or overly aggregated. A reasonable starting point for the scale of an RRU is scoped work. The principles which structure SPD's definition of scoped work are directly relevant to determining the characteristics of an RRU. Those principles focus on ensuring an RRU is forecastable and auditable as well as capable of being scheduled, mapped, and prioritized. SPD argues that inclusion of the RRU within the RDF is necessary to increase transparency and ensure the accuracy of RAMP and GRC filings.

Background

Safety Policy Division (SPD)'s perspective is that it is necessary for the Commission to consider a definition of scoped work in the context of risk mitigations before other refinements to the Risk-based Decision-making Framework (RDF) can progress. At present, only the concept of "mitigation program" is well defined within the RDF. D.24-05-064 defines program as

> a CPUC jurisdictional effort within Electric Operations or Gas Operations consisting of projects, activities, and/or functions with a defined scope that is intended to meet a specific objective.[1]

As we can see the term program is a high-level aggregation composed of, for instance, *projects with a defined scope*. In other words, a collection of scoped work makes a program. This Staff proposal will return to the idea of scoped work in a later section.

Tranches are a disaggregation of the risk associated with a given risk event and the assets and systems within each tranche share the same LoRE and CoRE profile. The granularity of tranches has been addressed by the Commission in D.24-05-064.[2] Mitigation programs reduce risk from each of those tranches. As stated above, mitigation programs themselves can be disaggregated into scoped work and examples below will demonstrate how the utility creates this scoped work from its mitigation programs. It is through the risk reduction achieved by scoped work that a utility can then properly determine the best way to manage the risk found within tranches. In the past, SPD requested disaggregated data at the scoped work level through data requests to the utilities. Without a set of principles or conditions for describing what scoped work is, utility data request responses have been inconsistently useful for determining the risk reduction, cost efficiency and prioritization associated with scoped work. This has also made it difficult to determine how each scoped work addresses risk within a given tranche.

With this Staff Proposal, SPD provides a definition for scoped work. This will require the utility to disaggregate their mitigation programs according to a set of principles described below. SPD envisions that that scoped work can also be associated with tranches of risk that will be reduced once the scoped work is used and useful. In layman's terms, if we imagine tranches are buckets of risk, scoped work will remove risk from each of those buckets. The mitigation program would be the sum of all the risk removed from all of those buckets by the scoped work.

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[1] D.24-05-064, Appendix A, Row 28 at A-19. All three IOUs have a different alphanumeric naming convention for their programs. For details see D.24-05-064, Appendix A, Row 28 at A-19 – A-20

[2] See D.24-05-064 at 26 and D.24-05-064 Appendix A, Row 14 at A-13 for details.

Discussion about Projects

The issue of scoped work within the RDF Proceeding originates in discussions around the concept of projects as a unit of analysis in risk assessment. During the Risk-based Decision-making Proceeding (R.13-11-006), a Commission Decision initially required that the newly created Risk Assessment and Mitigation Phase (RAMP) Application and the Risk Spend Accountability Report (RSAR) would be based on the project scale as the unit of analysis.[3] In a later Decision, the Commission agreed that "in lieu of defining a project" utilities were required to structure the RAMP and RSAR according to programs, which was defined at the beginning of this Staff Proposal.[4] An early Energy Division Staff Proposal noted that "GRC decisions generally have not authorized funding at the 'project' level and the utilities are not recommended to include this information in their reports at this time."[5] With this current proposal, SPD is asking the Commission to consider whether or not it is now time for utilities to submit project-level data to inform Commission Decisions on revenue requests for risk mitigations submitted to the GRC.

SPD's position on this matter has been influenced by recent direction from the legislature. In the context of wildfire risk, the legislature established the need for an expedited undergrounding program (EUP) that requires the "Identification of the undergrounding projects that will be constructed as part of the program, including a means of prioritizing undergrounding projects based on wildfire risk reduction, public safety, cost efficiency, and reliability benefits."[6] The Commission recognized the considerable overlap between the EUP and the RDF, which is why it issued a resolution requiring EUP applications to provide Benefit-Cost Ratios (BCR) for every proposed undergrounding project as part of its application.[7] Discussion about the EUP among parties at the Commission and at the Office of Energy Infrastructure Safety (OEIS) has opened up the issue of defining project. For instance, in comments on the OEIS's Draft EUP Program, CalAdvocates presented three principles for defining a project:

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[3] "…the RAMP is viewed…as an opportunity…to gain an early indication of the utility's risk priorities and mitigation plans and Staff and party Responses would inform the utility's recommended projects and funding requests in the subsequent phase of the GRC." See D.14-12-025 at 34. the Risk Spending Accountability Report would compare the utility's GRC projected spending for approved risk mitigation projects to the actual spending on those projects, and to explain any discrepancies between the two.

[4] The requirement to present programs in the RAMP was established with the Settlement Agreement in D.18-12-014, Appendix A, Row 28. The requirement to present programs in the RSAR was established in D.19-04-020 at 34.

[5] Energy Division Summary of Changes to Revised Staff Proposal for Standardized Reporting and Outline, Based on February 22, 2018, Workshop Comments, May 22, 2018 at 3

[6] PUC 8388.5 (c)(2).

[7] SPD-15 at 8. Please note: As stated in the Phase 4 Scoping Memo, the Commission is currently considering clarifying the nomenclature used in the RDF from Cost-Benefit Ratio to Benefit-Cost Ratio (i.e. Benefit divided by Cost). In all of the Phase 4 Staff Proposals, SPD will be preemptively making this change to ensure clarity going forward.

1. The definition of a project is a contiguous group of comparably high-risk assets that are to be mitigated simultaneously. When a project is complete, the entire set of existing overhead assets entailed in the project will be simultaneously removed from service.
2. Risk reduction benefit should be estimated at the scale of the assets to be removed from service; inclusion of assets that are not being taken out of service should be avoided.
3. The project should be traceable through all stages of the project lifecycle. This begins at preliminary identification of high-risk locations and continues to project completion. The decisions resulting in the ultimate project should be auditable.[8]

These three principles were used to recommend a definition for "undergrounding project" within the context of SB-884. Leaving aside the word "overhead" in principle #2, these three principles could provide basic concepts for the Commission's definition of scoped work in the RDF Proceeding.

A detailed discussion about the definition of project returned during Phase 3 of the RDF Proceeding. For instance, during Phase 3 Workshop 5, CalAdvocates provided a draft version of their Risk Mitigation Reporting Templates that would require the utilities to provide project-level data for the RAMP and GRC. The CalAdvocates proposal put forward a definition of project as such:

> A project would typically be expected to include a set of tasks to be completed within a defined timeline to accomplish a specific set of goals. The project would typically be expected to include scoping, estimating, planning, scheduling, tracking, unit cost, budget, and assessment.[9]

The Commission then requested parties of the RDF Proceeding to provide comment on the CalAdvocates Proposal. In particular parties were asked whether the term "project" needed to be defined within the RDF and if so, what criteria should be included within such a definition.

In opening comments on CalAdvocates proposal, PG&E stated:

> Neither the RAMP nor GRC require project-level information, although in the GRC utilities explain how they will implement and deploy projects in a risk prioritized manner…. Project information is typically not available on a forecast basis beyond the near term, or is subject to significant revision and change in real time, since specific projects are not identified that far in advance of implementation.[10]

PG&E here does note that project-level data for informing the implementation of mitigations is considered within the GRC. Elsewhere in its comments, PG&E argues that the GRC is the only appropriate place to

[8] Public Advocates Office's Comments on Undergrounding Plan Guidelines, Office of Energy Infrastructure Safety Docket 2023-UPs, November 2 2023, at 4

[9] The Public Advocates Office's Recommendation to Develop Risk Mitigation Project Templates in Rulemaking 20-07-013 Workshop 5, October 31 2023, at 15.

[10] PG&E Opening Comments on R.20-07-013 Phase 3 Workshop 5 at 17.

discuss project-level data.[11] TURN's Opening Comments on the CalAdvocates proposal actually presented their own definition of project as such:

> a project is a self-contained set of activities which can be independently assessed for its ability to reduce risk, cost and timing. Projects can be scheduled, mapped, and prioritized.[12]

SCE's reply comments to Workshop 5 focused on the timing challenges that are created by applying the TURN and CalAdvocates definitions:

> the use of project as TURN and CalAdvocates suggest would mean that utilities would need to provide project-level information and commitments as much as seven years in advance of project execution. Project-level mitigation plans can and will change substantially over the course of time from whatever initial scoping that can be performed as the RAMP/GRC cycle commences through implementation as far in the future as the final GRC attrition year.[13]

SPD recognizes that changes can occur to project-level mitigations, however we are less convinced that it would be difficult for the utilities to provide initial project-level information in RAMP and GRC filings. The reason for SPD's position is that the utilities already do provide this information in their applications. Two examples are outlined below:

Example of Project in RAMP Filing

In PG&E's 2024 RAMP filing, both the narrative and workpapers supporting the Large Unplanned Water Release (LGUWR) risk chapter clearly describe mitigation projects. For instance, when discussing how to address the flood risk at Belden Forebay Dam, PG&E stated that it has "initiated a project to retrofit the spillway."[14] The workpapers for this chapter also include fields such as "Project_ID", "Mitigation_Project" and "Project_Scope".[15] The information related to these projects includes risk reduction efficiency values, actual capital or operating expenses for 2023, total forecasted capital or operating expenses, and even annual forecasted capital or operating expenses out to 2037. In other words, PG&E submitted forecasted project-level expense data with its RAMP application thirteen years before that project would be used and useful. While that is an outlier, 16.5 percent of LGUWR projects with capital expenses submitted to the 2024

[11] PG&E Opening Comments on R.20-07-013 Phase 3 Workshop 5 at 8.

[12] TURN Opening Comments on R.20-07-013 Phase 3 Workshop 5 at 6.

[13] SCE Reply Comments on R.20-07-013 Phase 3 Workshop 5 at 4

[14] A.24-05-008, PG&E 2024 RAMP (PG&E 5-1) at 1-28.

[15] See various spreadsheets throughout the GEN-LGUWR-08_Inputs_to_CBR-Input.xlsx workpaper.

RAMP have forecasted expenses out to 2032.[16] This level of granularity allowed PG&E to calculate risk reduction and BCR for each year that they had forecasted expenses.[17]

SPD also wants to note that for all of the LGUWR projects with capital expenses during the 2027-2030 period, PG&E allocated approximately 36% ($403 million) of its proposed investment to what it calls budget plugs.[18] While budget plugs may make sense for projects with operating expenses related to maintenance activities, when a budget plug is used for projects with capital expenses, decision-makers are simply asked to trust that the utility will properly allocate and prioritize ratepayer funds towards the riskiest set of assets. In the case of the LGUWR risk event, PG&E is not able to inform decision-makers at which hydropower dam the budget plug funding will be used to reduce risk, meaning that the funding would be spread evenly across every tranche. That means the BCRs associated with the budget plugs are inaccurate and irrelevant to PG&E's upcoming 2027 GRC filing. Thus, the example from PG&E's 2024 RAMP demonstrates how project-level data can be beneficial to determining if the utilities are prioritizing mitigations in a cost-efficient manner, as long as the utilities provide the appropriate amount of transparency around all of its projects.

Example of Projects in GRC Filings

In the SCE 2025 GRC filing, a significant amount of inquiry focused on the level of data granularity related to two wildfire mitigations: covered conductor and undergrounding. In workpapers, SCE has presented its data for both mitigations at the circuit segment level, which in some cases resulted in a mitigation being designated for less than 500 feet of an asset. In data requests, SCE explained that a circuit segment "is often a more granular level than would be used for actual scoping purposes. Scoped work is typically bundled for prioritization purposes, improved design and construction efficiencies, and reduced planned outage impacts to customers."[19] This issue first arose in SCE's 2022 RAMP filing, where SPD requested SCE to explain how it bundles circuit segments. SCE associated this bundling process with a Project Initiation Form (PIF) that aggregates circuit segments into isolatable segments. SCE further explained that "[o]ne PIF Project is submitted per program for a specific plan year (i.e., operating date) for all isolatable segments on a circuit that were prioritized for that Operating Date (OD) year. This PIF Project scope may be further refined based on construction requirements or a review of conditions in the field, to determine final project scope."[20] SCE is describing how the assets of its electric grid are aggregated up to an isolatable segment that

[16] See the Capital_Mitigation spreadsheet in the GEN-LGUWR-08_Inputs_to_CBR-Input.xlsx workpaper.

[17] See the "CBR Results" spreadsheet in the GEN-LGUWR-03_CBR Input File_updated0702.xlsx workpaper.

[18] In some places PG&E refers to this as a budget placeholder or programmatic program budget. Details can be found in PG&E response to SPD data request, RAMP-2024_DR_SPD_005-Q019, Q19_Budget Placeholder spreadsheet in RAMP-2024_DR_SPD_005-Atch01.xlsx, July 22 2024.

[19] SCE response to ED data request, A.23-05-010 – SCE 2025 GRC, ED-SCE-003 Question 02, September 25 2023.

[20] SCE response to ED data request, A.22-05-013 – SCE 2022 RAMP, SPD – SCE – Verbal – 002 Question 04.a at 1, October 3 2022.

is used to scope out mitigation projects including for covered conductor and undergrounding. The PIF is then the way SCE identifies the assets together to form a project that would be submitted to the GRC. SPD indeed recommended in its evaluation of the SCE RAMP that SCE should "utilize isolatable circuit segments for tranches to align more closely with how projects would be implemented on the ground."[21]

However, when SCE submitted its GRC application, the workpapers were quite similar to those that had been submitted to the RAMP, with the exception that an isolatable segment ID variable had been added. The risk analysis that included calculations of likelihood and consequence scores for the electric grid assets as well as the risk reduction and cost efficiency (i.e. Risk Spend Efficiency or RSE) of the mitigations was still conducted at the excessively granular circuit segment scale.[22] It required further data requests for SCE to confirm the manner in which the data could be aggregated at the isolatable segment scale.[23]

CalAdvocates analysis of the SCE GRC wildfire mitigation data took a slightly different approach. In a data request, CalAdvocates requested that SCE organize its data according to PIFs, work orders, and Circuit ID. Of the 889 Circuit IDs within this dataset, 298 had been issued PIFs since they were in the scoping phase or beyond. 27 of those PIFs had scoped in mitigations to be deployed in 2028, which was effectively five years into the future. Even 126 of the Circuit IDs that were in the "pre-scoping phase" had also determined that a certain number of miles of mitigations would be deployed in 2028. SCE's definition of "pre-scoping phase" is simply "project activity prior to scoping is underway".[24] CalAdvocates, in fact, pointed to this dataset in reply comments to Phase 3 Workshop 5 in the RDF Proceeding as evidence that the utilities are able to present project-level data in the RAMP and GRC for analysis by Staff and parties.[25] Ultimately, this example demonstrates that clarifying questions regarding the scope of a project that began in SCE's RAMP paved the way for refined datasets that can provide decision-makers with the detailed information they need in order to determine if the utilities are properly prioritizing its riskiest assets in a cost-efficient manner.

The utilities have submitted projects to the RAMP and there is extensive discussion of project-level data within the GRC. Contrary to PG&E and SCE's comments during Phase 3 of the RDF Proceeding, there does not appear to be a logical reason why projects should not be discussed during the evaluation of a RAMP application. It is possible that over the course of 1-2 years from the RAMP submission to testimonial hearings in the GRC Proceeding, there would be changes in the utility's set of projects that it intends to implement during the GRC Cycle. From SPD's perspective, it would be beneficial to decision-makers, Staff, and parties to have access to a set of projects to be submitted with the RAMP Application for

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[21] A.22-05-013, SPD Evaluation of SCE 2022 RAMP at 22.

[22] SCE response to ED data request, A.23-05-010 – SCE 2025 GRC, ED-SCE-002 Question 01.a, WP SCE-04 Vol. 05 Pt. 1 – WCCP_UG_RSE_calcs.xlsx, August 14 2023

[23] SCE response to ED data request, A.23-05-010 – SCE 2025 GRC, ED-SCE-003 Question 01.a, September 25 2023.

[24] All data can be found in SCE response to CalAdvocates data request, A.23-05-010 – SCE 2025 GRC, Revised_PubAdv-SCE-171-MGN-01, 01 Revised_PubAdv-SCE-171-MGN-01._Revised_Attachment.xlsx, November 22 2023.

[25] R.20-07-013 Phase 3, Public Advocates Office Reply Comments on Workshop 5 at 9, December 8 2023.

evaluation that is then updated in the utility's GRC Proceeding. SPD recommends that the submission of projects be done in a systematic way for all mitigation programs. Establishing a definition is the first step of this process, but SPD envisions that the Technical Working Groups, which will discuss the data templates in early 2025, will ensure greater coherence and rigor around the role that mitigation projects play in the evaluation of RAMP and GRC applications.

The LGUWR risk chapter and workpapers in PG&E's 2024 RAMP are a good example of how projects can help decision-makers or, if inappropriately addressed, could generate more obfuscation of cost efficiency. SCE's testimony related to wildfire mitigations in the 2025 GRC demonstrates how project-level data can be "scoped" at least 5 years into the future, but also that the current RDF Framework requires Staff and parties to spend an unacceptable amount of time and resources on data requests to provide decision-makers with the data they need to make wise decisions. Project-level data can be used to understand the details of how a mitigation or control works. Project-level data can also clearly demonstrate at which assets or systems a mitigation or control is intending to reduce risk. Additionally, project-level data can be used to understand the annual expenses for a mitigation or control that reduce risk at a given asset or system. With this information, decision-makers are in a better position to ensure that the utility's mitigations are prioritizing risk reduction at the riskiest assets or systems in the most cost-efficient manner. SPD argues that project-level data is necessary to address the affordability crisis in California's electric and natural gas sector while we continue to ensure Californians have safe and reliable access to these services.

Discussion about Scoped Work

One of the problems with the term "project" is not just that it has yet to be defined in the RDF, which will be addressed below, but within the utilities' internal management structure they use a number of different terms and acronyms to address the same concept.[26] From SPD's perspective, terms like Planning Orders and PIFs are corporate jargon for referring to what an outsider would likely refer to as a "project." SCE also uses the term "scoped work," which the Commission felt was a close approximation of project but appears to better capture the timing aspect of "scoping" that utilities claim is central to their ability to provide data for the analysis of mitigations. As noted above, SCE was even able to provide a significant amount of risk and cost data for Circuit IDs that were still in the "pre-scoping" phase. With this in mind, SPD proposes a set of basic principles for establishing the proper granularity of scoped work for a mitigation that intends to reduce a given risk.

SPD Proposed Definition of Scoped Work

Building upon the discussion in various proceedings at the Commission, SPD proposes the following definition of scoped work:

> A CPUC jurisdictional effort within Electric Operations or Gas Operations that simultaneously removes or mitigates a group of assets or systems that exhibit a certain level of risk. Scoped work is traceable through all stages of a lifecycle, including but not limited to, scoping, designing, permitting, construction/implementation, post-construction. Scoped work must be forecastable to at least the third post-test year of a GRC cycle. Scoped work must be auditable in terms of timing, location, work units, cost, and risk reduction.

The above definition incorporates principles that allow scoped work to be scheduled, mapped, and prioritized. We will expand on some of the terms in the definition below. SPD acknowledges that utilities face a diverse set of enterprise risks with unique characteristics that may not readily fit the definition above. SPD provides the following examples and possible solutions for discussion in the workshop.

1. Should scoped work for reducing risk associated with the electric grid or natural gas pipelines only remove or mitigate a group of assets that are contiguous with each other? In plain English, should scoped work only include electric lines, poles, and transformers or pipelines, compressors and feeders etc. that are all connected to each other?
    a. If the answer is yes, the implication is that each scoped work could be small in size, which means a large number of scoped work would be included in a dataset submitted to a RAMP or GRC application. This level of granularity provides intervenors and Staff the opportunity

[26] As the Phase 4 Scoping Memo also noted, the term "project" can have a specific legal meaning which may or may not be appropriate within the context of the RDF Proceeding.

to conduct more refined analysis. However, this level of granularity also requires explicit and rigorous data management protocols and templates.

b. If the answer is no, the implication is that the size of scoped work is not dependent on the characteristics of the assets. This means that the utility could include a large number of assets within each scoped work. This could reduce the number of scoped work in a RAMP or GRC application but would require the utility to provide clear justification and rationale for its approach to combining assets within each scoped work.

2. Should scoped work for reducing risk be associated with only one asset? Utilities will often conduct risk assessment on what is described as a single asset (i.e. electric substations, gas compressor stations) despite the fact that it is made up of multiple systems. As a clear example, utilities often treat hydropower dams as single assets in risk assessment and tranche design. However, dams are in fact complex, highly engineered structures with multiple systems. The scope of a dam safety mitigation typically is limited to addressing risk on one or more of those systems. A dam safety mitigation would never simultaneously address risk on all the systems that make up the entire dam.[27] In other words, in the context of risk assessment, should scoped work be associated with a dam as the single asset that is being mitigated?
    a. If the answer is yes, this may create conflicts or confusion regarding scheduling and prioritization. When scoped work is defined by a single dam, it is not clear how a utility would prioritize two different mitigations that reduce risk associated with two different mechanical systems within that dam.
    b. If the answer is no, this may create confusion for how risk reduction is aggregated across all the scoped work at a single dam. At present, the utilities use an additive approach to aggregating a number of scoped work at one dam within a single mitigation program, which may or may not be acceptable.[28] This additive approach may need to be revisited should the successor to the RDF Proceeding wish to explore interrelated risk drivers.

Explanation of Terms in the Definition

Exhibit a certain level of risk: This refers to the level of risk that is estimated by the utility's risk model.

Scoping: Identifying the size and timeline of the scoped work. Scoping is the first step to providing visibility to the construction feasibility and possible execution timing.

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[27] The one exception being dam removal, which eliminates all of the risk associated with a large unplanned water release but creates significant environmental impacts and has high financial costs.

[28] For a detailed example, see PG&E's 2024 RAMP (Chapter 5-1), GEN-LGUWR-08_Inputs_to_CBR-Input.xlsx workpaper, Capital_Mitigation spreadsheet. There are four different "Mitigation_projects" related to the M002 Spillway Remediation mitigation targeting the Flood driver and the Flood (full dam breach) Suboutcome. All four projects reduce likelihood and the risk reduction benefits from each project are summed (along with other Spillway Remediation Mitigation_projects across PG&E's 60 dams) to support the calculation of the Program Risk Reduction Net Present Value found on the CBR Results (aggregated) spreadsheet in the GEN-LGUWR-03_CBR Input File_updated0702.xlsx workpaper.

Designing: Delineation of a plan for implementing the scoped work including determining the scoped work's integration within existing infrastructure or operations and need for materials, training, or permitting. The costs for completing the scoped work, including for permitting, labor and materials, are forecasted at this stage.

Permitting: The process of obtaining the rights and permits from relevant stakeholders to implement the scoped work. This stage of the lifecycle also includes negotiating of contracts to implement the scoped work as well as final estimation of the costs associated with implementing the scoped work.

Construction/Implementation: During this stage a capital investment is built out or an operational activity is put into action. Capital investments are complete when they are used and useful. Operational activities could be an ongoing means of maintaining a level of risk.

Post-Construction: For capital investments, there can be final paperwork and updates to asset registries after the scoped work is used and useful.

Forecastable: Scoped work is a unit of analysis that is forward-looking, which means the utility must be able to estimate the risk reduction, units of work to be completed and expenses of scoped work implemented in the future. Parties must also be able to verify the accuracy of the risk reduction estimates provided by utilities.

Auditable: Scoped work is a unit of analysis that is backward-looking. Specifically, once a scoped work is implemented, parties, the Commission, or an independent auditor must be able to determine if the risk reduction and units of work estimate was realized by scoped work implemented in the past. It must also be possible to determine if the expenses of scoped work implemented in the past are incremental to expenses authorized in other rate-making proceedings.

The Risk Reporting Unit

The term "scoped work" is not an ideal nomenclature for what is being described in this proposal. The term could easily be confused with "a scope of work," which is a document that guides the preparation of scoped work before it is submitted in a RAMP or GRC. SPD envisions instances of particularly awkward sentences such as, "We reviewed the scope of work for the scoped work." Moreover, syntactically speaking, the term "scoped work" is an awkward turn of phrase. The word "work" in English is an uncountable noun, which makes phrases like "each scoped work," "the number of scoped work," or even "five scoped work" appear odd. With this in mind, SPD recommends the Commission adopt the term Risk Reporting Unit (RRU) for inclusion within the RDF. Moreover, the RRU contains all the data elements and dimensions that will be reported in the Risk Mitigation Accountability Report (RMAR), which will be discussed in Phase 4 Workshop 3.

Figure 1 below presents how risk data flows to an RRU. First, note that the first category of data is unique identifiers. These would form the foundation for the utility's risk reporting hierarchy and enable aggregation. For instance, an RRU may not be identified with more than one risk event - it would be highly unusual for risk data for wildfires to be the same for cybersecurity. The second category is the actual risk data, which can be aggregated based on unique identifiers, which we call roll-up points within the risk reporting hierarchy.

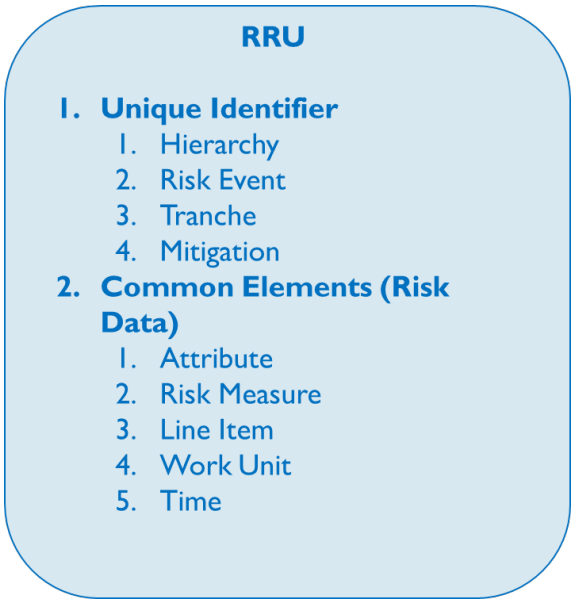

Figure 1. How an RRU is organized.[29]

[29] Hierarchy refers to a utility's organizational hierarchy, such as an Electric Distribution Division or a Gas Distribution Division as well as other ways of categorizing high risk assets and systems (i.e. HFTDs, circuits, regions etc.). Unique identifiers could also

For example, we can produce a table that aggregates the risk data for a risk event, such as a Large Unplanned Water Release (LGUWR) from a hydro-power facility. All the RRUs that have the hierarchy roll-up point of LGUWR are collected, and the common elements for those RRUs aggregate to produce a view of risk reduction from mitigation programs within the context of the LGUWR risk.

The following diagrams show how different aggregations can be created from RRUs. Figure 2 below shows a straightforward aggregation of RRUs to different risk events:

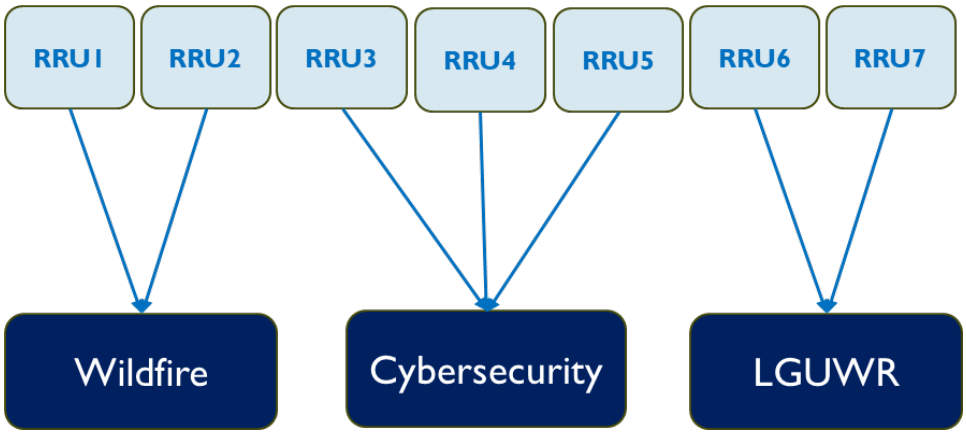

Figure 2. RRUs aggregating to risk events.

Figure 3 below illustrates a more complicated aggregation. Since each RRU contains risk information for each attribute, RRUs can be aggregated to total Safety, Reliability and Financial according to those three roll-up points.

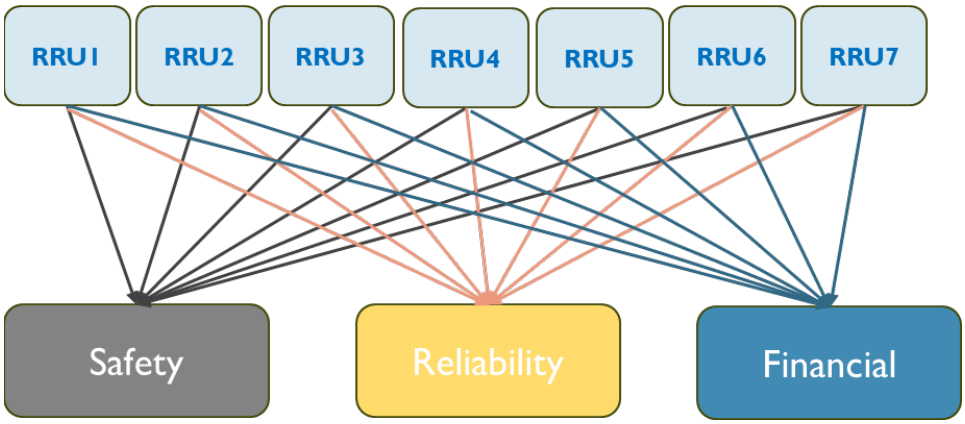

Figure 3. RRUs aggregating to the three attribute roll-up points.

What is the right level of granularity for an RRU? Here, the "goldilocks principle" applies.

include features that will be discussed further in the RMAR Staff Proposal, such as Scenario, which refers to actuals, plan or forecast, and Version, which refers to a risk model version.

- *Overly granular*: It is at first tempting to choose the most granular level possible such as a circuit segment or gas pipe segment. It is true that granularity enables more flexibility in aggregating the data and defining hierarchy points. However, an overly granular approach may result in thousands or tens of thousands of RRUs, each one requiring modeled results, forecasts and plans, risk detail, and expense detail. Overly granular could be unwieldy. This is similar to a concern raised above when the Proposal asked a question about the need for scoped work to be a contiguous group of assets.
- *Overly aggregated*: While fewer RRUs are easier to manage, they may be inflexible for further aggregating. If an RRU contains multiple mitigations, or multiple tranches, or in the case of wildfire risk includes portions of High Fire Threat District (HFTD) and non-HFTD, then RRUs cannot be aggregated to the mitigation program level to create reports for these dimensions which defeats the purpose.

A reasonable starting point for an RRU is a project or scoped work. SPD argues that the principles discussed in the definition of scoped work above are directly relevant to determining the characteristics of an RRU.

The following diagrams will help in deciding how to define the RRU. Ideally, data that flows to an RRU will exhibit a simple mapping to the RRU structure. Figure 4 below illustrates a simple mapping, also known as "one-to-one," for two wildfire mitigations, undergrounding (UG) and covered conductor (CC).

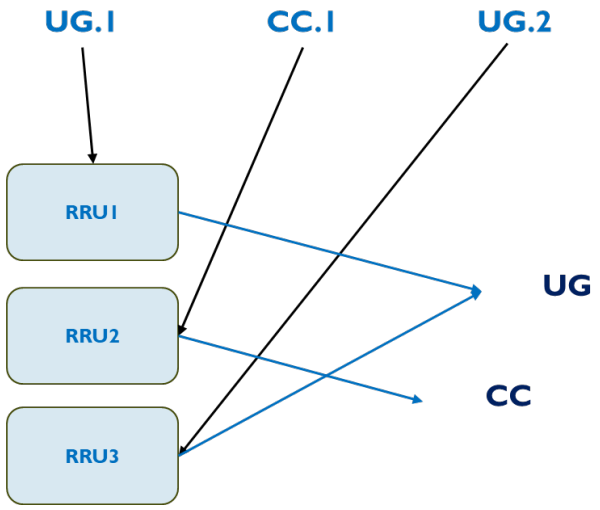

Figure 4. Wildfire mitigations mapping "one-to-one" to RRU.

This means that if there are three attributes included in an RRU (safety, reliability, and financial), a lower-level roll-up point (i.e. UG.1, CC.1 and UG.2 in Figure 4) in risk reporting hierarchy that feeds into the RRU will not have added all the attributes together into one, nor will it try to send information about a fourth attribute that is not defined. Each mitigation type maps to an RRU – two underground segments map one each to RRU1 and RRU3, and the covered conductor segment maps to an RRU. This allows the RRUs to be aggregated to create the total for the UG mitigation program and the total for the CC mitigation program.

If the mapping is complex (e.g. "one to many" "many to one" or "many to many") however, the diagram can look like Figure 5 below. In this "many to many" example, RRU2 and RRU3 include a mix of UG and CC segments, which means the RRUs can no longer be aggregated to a total UG and total CC.

Figure 5. "Many to one" mapping.

The aggregation to the total UG mitigation program and total CC mitigation program must be done from the mitigation segment, which means that two hierarchy structures would have to be maintained (one for mitigation segments to mitigations, another for RRUs to everything else). This would defeat the purpose of defining an RRU.

Additionally, the "one to many" mapping of RRU is highly discouraged. Take, for instance, the mapping of RRUs to Tranche 1, Tranche 2 and Tranche 3 in Figure 6.

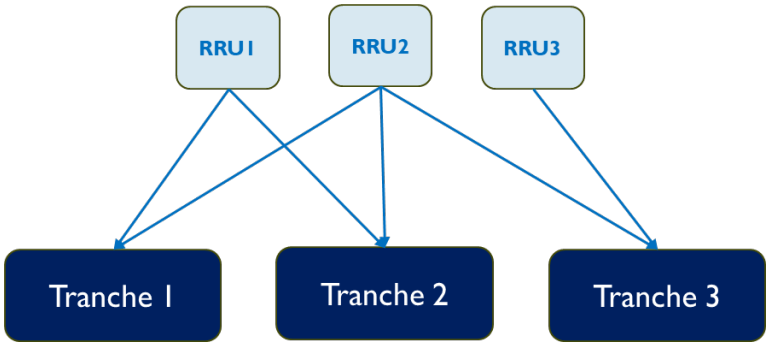

Figure 6. "One to many" mapping of tranches

It is not clear how much risk reduction achieved by RRU2 is reducing risk from Tranche 1, Tranche 2 or Tranche 3. While a utility could in theory say that 40% of risk reduction achieved by RRU2 is reducing risk from Tranche 1, another 40% from Tranche 2, and another 20% from Tranche 3, this would be very

difficult to audit, which is a foundational requirement of the RRU. In other words, a "one to many" mapping of an RRU can allow for the possibility of double counting. In contrast, a "one to one" mapping (Figure 4) ensures that an auditor can easily determine if the costs associated with RRU3 are incremental to the costs of RRU1.

However, there may be instances where complex mapping may be necessary. Let's take the example in Figure 7. The undergrounding and covered conductor mitigation segments properly display a One-to-One Mapping with three distinct RRUs. Those RRUs may have risk reduction benefits for more than one risk. For instance, the undergrounding segment (UG.1) in RRU2 has risk reduction benefits for Wildfire, PSPS and Failure of Electric Distribution (Figure 7).

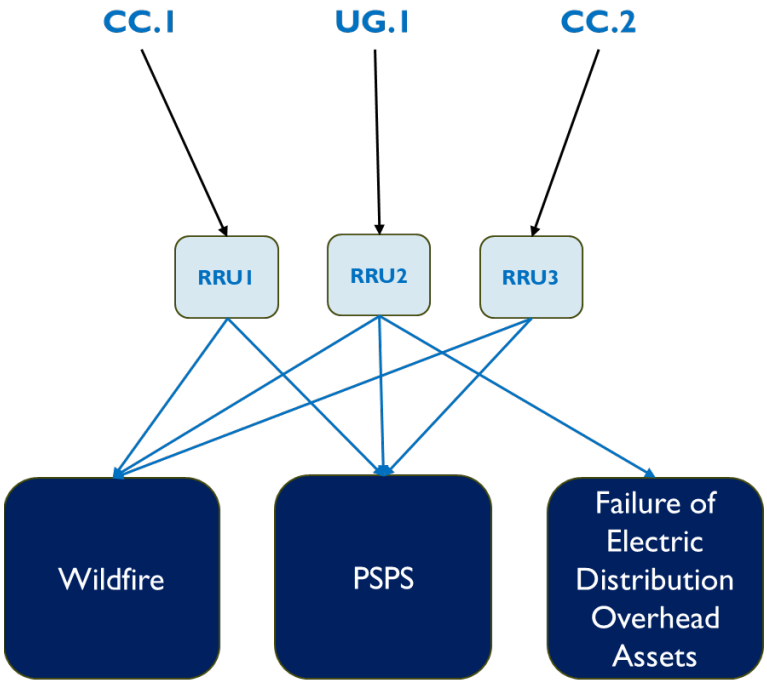

Figure 7 A Complex Mapping of RRUs to Risk Events

While the utility may be able to calculate how much risk reduction is achieved by RRU for each risk event, it is less clear how the costs for the RRU should be allocated. In Table 1, we can see three different methods for allocating costs associated with RRU2. Method 1 recognizes that the primary purpose of RRU 2 is to reduce wildfire risk. The total cost is allocated strictly in the context of the wildfire risk, therefore a BCR cannot be calculated for RRU2 in the context of the PSPS and Failure of Electric Distribution Overhead Assets risk events. Method 2 calculates a BCR based on the cost and total risk reduction achieved by RRU2. The cost is then allocated proportionately to the risk reduction achieved for all three risk events. Method 3 references the total cost for the RRU2 when calculating a BCR for each of three risk events. It is not clear what the correct approach would be in this Many-to-One example as a tradeoff would occur in each case. For instance, with Method 1, RRU2 could only be ranked in the context of the Wildfire risk event, but not in the other two. Method 2 may only work if RRU2 reduces risk on a specific asset. With Method 3, the

BCR for the non-primary risk events (PSPS and Failure of Electric Distribution Overhead Assets) will likely be severely undervalued.

Cost Allocation Method		Wildfire	PSPS	Failure of Electric Distribution Overhead	Total
Method 1	Benefit	$90	$20	$20	$130
	Cost	$100			$100
	BCR	**0.9**	**n/a**	**n/a**	**1.3**
Method 2	Benefit	$90	$20	$20	$130
	Allocated Cost	$69.23	$15.38	$15.38	$100
	BCR	**1.3**	**1.3**	**1.3**	**1.3**
Method 3	Benefit	$90	$20	$20	$130
	Allocated Cost				$100
	BCR	**0.9**	**0.2**	**0.2**	**1.3**

Table 1 Cost Allocation for a One-to-Many Mapping of an RRU

Some of the complications associated with the One-to-Many mapping will be easier to address within the context of portfolios. The RDF Proceeding will have a fuller discussion of portfolios in the Phase 4 Workshop 2 Staff Proposal that will touch on simple optimization of portfolios of mitigations.

As a rule of thumb, RRUs should be as granular as possible to provide the most flexibility for aggregating, without proliferating to the point of being unmanageable.

Consistency across time is also an important principle of the RRU. Once the proper granularity for the RRU is determined, for transparency purposes, it would be highly undesirable for the RRU to change from one GRC Cycle to the next. SPD argues if a utility wishes to update an RRU's level of granularity it must clearly explain the method it chose to update the granularity and how the granularity of the new RRU differs from the granularity of the prior RRU. Additionally, the utility must provide a Backcast of post-mitigated risk, risk reduction and BCRs submitted to the previous cycles of RAMPs and GRCs that are impacted by an update to the RRU's level of granularity. In other words, the utility must be able to demonstrate the implications that changing the granularity of the RRU might have for previous risk assessments. Any RRU Backcast may

need to be coordinated with the RMAR, which will be described in further detail in the RMAR Staff Proposal and discussed in Workshop #3. Requiring an RRU Backcast will encourage the utility to maintain the same level of granularity and ensure an "apples-to-apples" comparison of data and metrics between GRC Cycles.

Conclusion

The path to the RRU has taken us through a discussion of projects and scoped work. The primary goal of this proposal has been to demonstrate that there has been ample discussion on this topic and utilities are already providing this unit of analysis in workpapers albeit in an ad hoc manner. Moving forward, SPD argues that the discussion regarding whether the RDF needs the RRU as a unit of analysis is already complete and the answer is that both the legislature and intervenors have deemed it is necessary. With this proposal SPD wishes to focus the discussion upon what the principles of the RRU should be. Those principles have focused on ensuring an RRU can, at a minimum, be scheduled, mapped, and prioritized. SPD envisions that the RRU is a concept that can be integrated directly into the RMAR approach that will be discussed in Workshop 3, as well as the RAMP and GRC Data Templates that will be discussed in the Technical Working Group of Phase 4. In conclusion, SPD argues that inclusion of the RRU within the RDF is necessary to increase transparency and ensure the accuracy of RAMP and GRC filings. Doing so will help the Commission address the affordability crisis in California's electric and natural gas sector while we continue to ensure Californians have safe and reliable access to these services. With that in mind, the proposal turns to specific recommendations for integrating the RRU into the RDF.

SPD Recommendations

Text in red-underline (deletions) and blue-underline (additions) represent proposed changes to the Risk-Decision Framework.

1. Integrate the term Risk Reporting Unit (RRU) into the Risk-based Decision-making Framework (RDF) and require utilities to present workpapers in Risk Assessment and Mitigation Phase (RAMP) and General Rate Case (GRC) filings at the RRU scale beginning with the SCE 2026 RAMP and Sempra 2028 GRC filings. Safety Policy Division (SPD) recommends that all data templates discussed in the Phase 4 Technical Working Groups should be structured on the RRU.

2. Include the following definitions in the RDF:
    a. Asset: a retirement unit as defined by Federal Energy Regulatory Commission (FERC) Uniform System of Accounts (USOA) that exhibits risk.[30]
    b. Backcast: use updated inputs (i.e. new RRUs, new risk models) to recalculate Benefit-Cost Ratios, pre-mitigated risk, post-mitigated risk or other data point as required by the RDF, Commission Ruling or Commission Decision. The goal of a Backcast is to establish a bridge between the prior inputs and the new inputs, which ensure an "apples-to-apples" comparison.
    c. Mitigation/Control Program: A California Public Utilities Commission (CPUC) jurisdictional effort within Electric Operations or Gas Operations consisting of multiple risk reporting units with a defined scope that is intended to meet a specific objective.
    d. Risk Reporting Unit (RRU): A CPUC jurisdictional effort within Electric Operations or Gas Operations that simultaneously removes or mitigates a group of assets or systems that exhibit high levels of risk. The RRU must include comment elements that should include, but are not limited to Consequence Attributes, Risk level, line item costs, work units and time. The RRU can be aggregated based on unique identifiers that should include, but are not limited to, hierarchy[31], risk event, tranche and mitigation type.
    e. System: a regularly interacting or interdependent group of items forming a unified whole that exhibits risk and cannot be classified as a retirement unit.

3. Create a new row (between row 15 and 16) with the following language:

[30] For the FERC USOA, see 18 CFR Part 101 https://www.ecfr.gov/current/title-18/chapter-I/subchapter-C/part-101

[31] Hierarchy refers to a utility's organizational hierarchy, such as an Electric Distribution Division or a Gas Distribution Division as well as other ways of categorizing high risk assets and systems (i.e. HFTDs, circuits, regions etc.).

15.1	Define the Mitigation Risk Reporting Unit	A Risk Reporting Unit (RRU) will be defined for each mitigation. The RRU must be: (a) traceable through all stages of a lifecycle, including but not limited to, scoping, designing, permitting, construction/implementation, post-construction. (b) forecastable to at least the third post-test year of a GRC cycle. (c) auditable in terms of timing, location, work units, cost, and risk reduction. (d) able to aggregate up to the Mitigation Program or Control Program. Once the level of granularity of an RRU for each risk is established, beginning with SCE's 2026 RAMP and SDG&E's 2028 GRC filings, that level of granularity for the RRU should be maintained for all future filings which include that risk. If a utility wishes to update an RRU's level of granularity it must clearly explain the method it chose to update the granularity and how the granularity of the new RRU differs from the granularity of the prior RRU. Additionally, the utility must provide a Backcast of post-mitigated risk, risk reduction and Benefit-Cost Ratios submitted to the previous cycles of RAMPs and GRCs that are impacted by an update to the RRU's level of granularity.

4. Make the following changes to the RDF:

14.	Definition of Risk Events and Tranches	Detailed pre- and post-mitigation analysis of Mitigations and Controls will be performed for each risk selected for inclusion in the RAMP. The utility will endeavor to identify all asset groups or systems subject to the risk and each Risk Event associated with the risk. For example, if Steps 2A and 2B identify wildfires associated with utility facilities as a RAMP Risk Event, the utility will identify all Drivers that could cause a wildfire and each group of assets or systems that could be associated with the wildfire risk, such as overhead wires and transformers. For each Risk Event, the utility will subdivide the group of assets or the system associated with the risk into Tranches. Risk reductions from Mitigation and Control Programs and Cost Benefit Ratios will be determined at the Tranche level, which gives a more granular view of how Mitigations and Control Programs will reduce Risk. The utility will identify which Risk Reporting Units are responsible for reducing risk in each tranche. The determination of Tranches will generally be based on how the risks, as a product of LoRE and CoRE, 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. The rationale for the determination of Tranches, or for a utility's judgment that no Tranches are appropriate for a given Risk Event, will be presented in the utility's RAMP submission.

		For the purposes of the risk analysis, all of the elements (i.e., assets or system) that are scoped for a given RAMP and GRC Application and contained within the identified Tranche would be considered to have homogeneous risk profiles, meaning they should have the same LoRE and CoRE. The best practice for determining the homogeneity of risk profiles in reporting Tranches is the use of quintiles of LoRE and quintiles of CoRE, resulting in 25 reporting tranches. The utility can and should submit more granular data in workbooks included with RAMP and GRC filings if it is available. If the assets or system associated with a given risk are less than 25 in number, the utility may use an alternative means of determining homogeneity of risk profiles, including quartiles or other smaller divisions of LoRE and CoRE, but this alternative means must be described in detail in the RAMP filing. If a utility desires to use an alternative determination of Tranches not reflecting 25 homogenous risk profiles based on LoRE and CoRE, or they wish to use a percentile ranking approach that would result in more than 25 reporting Tranches, the utility must submit a White Paper describing their preferred method for determining Tranches and relevant workpapers to SPD no later than 45 days before their first pre-RAMP workshop and must serve the White Paper to the service list of R.20-07-013 or a successor proceeding as well as the service list of the utility's most recent RAMP application no later than 45 days before their first pre-RAMP workshop. Staff and parties may provide input on the IOU's White Paper within the 21 days of the submittal. The utility must also include the White Paper in its RAMP filing, clearly indicating any changes to the previously served version. An IOU may submit this White Paper without prejudice to the right of parties to the RAMP or GRC to challenge such alternative determination of tranches.

16.	Expressing Effects of a Mitigation	The effects of a Mitigation on a Tranche will be expressed as a change to the Tranche-specific pre-mitigation values for LoRE and/or CoRE. The utility will provide the pre- and post-mitigation values for LoRE and CoRE determined in accordance with this Step 3 for all Mitigations subject to this Step 3 analysis. Additionally, the utility must provide pre- and post-mitigation values for LoRE, CoRE, Monetized Risk Value, Risk Reduction, and Benefit-Cost Ratios for all Risk Reporting Units that aggregate up to the Mitigation Program subject to this Step 3 analysis.

26.	Mitigation Strategy Presentation in the RAMP and GRC	The utility's RAMP filing will provide a ranking of all RAMP Mitigation~~s~~ Programs by ~~Cost~~ Benefit-Cost ~~r~~Ratios. The utility's RAMP filing will include a dataset of Risk Reporting Units for each Mitigation and Control Program and rank each Risk Reporting Unit by Benefit-Cost Ratio.

		In the GRC, the utility will provide a ranking of Mitigations Programs by ~~Cost~~ Benefit-Cost Ratios, as follows: (1) For any dataset of Risk Reporting Units submitted with the RAMP, the utility will provide an update of the dataset, if any is required, and provide an explanation of any differences from its RAMP filing and a justification for why the dataset from the RAMP filing required to be updated, (~~1~~2) For Mitigations and Control Programs addressed in the RAMP, the utility will use risk reduction estimates, including any updates, and updated costs to calculate ~~Cost~~ Benefit-Cost Ratios and explain any differences from its RAMP filing; (~~2~~3) For Mitigations and Control Programs that require Step 3 analysis under and consistent with Row 28, the utility will include the ~~Cost~~ Benefit-Cost Ratios, calculated in accordance with Step 3, in the ranking of Mitigations by ~~Cost~~ Benefit-Cost Ratios. In the RAMP and GRC, the utility will clearly and transparently explain its rationale for selecting Mitigations and Control Programs for each risk and for its selection of its overall portfolio of Mitigations. In the RAMP and GRC, the utility will clearly and transparently explain its rationale for prioritizing Risk Reporting Units for each Mitigation and Control Program. The utility is not bound to select its Mitigations and Control Programs strategy based solely on the ~~Cost~~ Benefit-Cost Ratios produced by the Cost-Benefit Approach. Mitigations and Control Programs selection and Risk Reporting Unit prioritization can be influenced by other factors including, but not limited to, funding, labor resources, technology, planning and construction lead time, compliance requirements, Risk Tolerance thresholds, operational and execution considerations, and modeling limitations and/or uncertainties affecting the analysis. In the RAMP and GRC, the utility will explain whether and how any such factors affected the utility's Mitigation and Control Program selections and Risk Reporting Unit prioritization. GRC Post-Test Year Reporting: All Controls and Mitigation programs must include ~~CBRs~~Benefit-Cost Ratios in each of the GRC post-test years as well as an aggregate ~~CBRs~~Benefit-Cost Ratio for the entire post-test year period and the entire GRC period, by Tranche.