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Appendix D

RAMP Data Template and Guidelines

California Public
Utilities Commission

RAMP Data Template and Guidelines

SAFETY POLICY DIVISION

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Background and Purpose:

Risk Assessment and Mitigation Phase (RAMP) and General Rate Case (GRC) filings are complex and cover hundreds of program areas and related risk mitigations, risk scores, and other information. Within the Risk-Based Decision-Making Framework (RDF) Proceeding (R.20-07-013), Cal Advocates has recommended that the Commission prioritize consideration of data templates to support RAMP and GRC applications to ensure transparent utility reporting of:

- Appropriate units used for a specific mitigation, such as circuit miles, pipeline miles, asset units, staffing levels, inspection levels;
- The cost-efficiency for the specific levels of risk mitigation programs;
- Past and proposed effectiveness of risk mitigation programs, considering safety performance metrics, safety and operational metrics, or other specific mitigation effectiveness measures; and
- Past, current, and projected progress on all risk mitigation programs.[1]

During Phase 3 Workshop #5 of the RDF Proceeding, Cal Advocates submitted a data template for party comment.[2] The Commission determined in D.24-05-064 that "the process, timing, and lexicon for the Risk Mitigation templates"[3] need further development. In that decision, the Commission also authorized continuation of the Technical Working Group (TWG), established in D.21-11-009, to prepare and propose recommendations for refining the RAMP and GRC templates.[4] In the Phase 4 Scoping Memo, the Commission established that TWGs would support Track 2 to answer the following questions:

- Should the Commission adopt required templates for data presentation for use in the RAMPs as proposed by Cal Advocates? If so, what should be the information requirements and format of the templates?
- What structured method, if any, for collecting and consolidating the more granular project-level data necessary to support the utilities' proposed risk mitigation projects and show how the utilities determine specific targets and forecasts should be integrated into the RDF and adopted for use by the utilities?[5]

Since the adoption of D.24-05-064, Safety Policy Division has leveraged its work in previous RAMP proceedings and in the development of Commission Guidelines for the SB-884 Program to develop a draft data template for consideration during the Phase 4 Track 2 TWG. The purpose of this RAMP Data Template Guidelines is to provide clarity on the field name, field description, and field value constraints for each variable in the RAMP Data Template that is attached to this document.

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[1] R.20-07-013, Cal Advocates Comments on Phase 3 Roadmap at 3.

[2] R.20-07-013, Phase 3 Workshop #5, Cal Advocates, Recommendation to Develop Risk Mitigation Project Templates, October 31 2023.

[3] D.24-05-064 at 110.

[4] Id.

[5] R.20-07-013, Phase 4 Scoping Memo, September 13, 2024, at 11

Template and Tables Structure

Table 1: Data Set (General)

This table collects the key elements and characteristics of a Risk Reporting Unit (RRU), including unique identifiers, mitigation plans, and associated risks.[6] Table 1 defines how risk-related data is structured and categorized for consistent reporting across various operational divisions.

Tables 1 through 5 are anchored around the RRU ID field, which references uniquely identifiable RRUs with unique IDs. A utility's RRU ID naming schema must be simple and transparently understandable. A utility's RRU ID naming schema must include the GRC Activity Code of the relevant Proposed Mitigation Program, which must also be listed in Table 1. A utility's RRU ID naming schema must not result in the reuse of an RRU ID.

In Table 1, for each RRU there will be one row for the utility's proposed mitigation and one separate row for each alternative.[7]

Table 2: Cost Breakdown (General)

This table breaks down the costs associated with mitigation efforts, including labor, materials, and permits, for projects under the Risk Reporting Unit. It provides detailed cost allocation to track expenditure efficiently.

Table 3: Risk Model Change Tracker (Electric Grid Infrastructure Specific)

This table tracks changes and updates to the risk modeling and how that affects the risk associated with the assets and systems mitigated by the RRUs. This allows for comparing current and previous risk models, risk scores and costs across RAMP and GRC filings or other proceedings. It ensures transparency and accountability in how risks related to the electric grid are managed and reported.

Utilities regularly update their risk models. At times, the outputs (calculated risks) of new risk model versions are substantially different from the previous version(s). In some cases, utilities have changed the length and names of each circuit segment from one risk model to another. To address the lack of clarity of the impact caused by changing risk models between RAMP, GRC, and other filings, SPD created Table 3 to track changes in each circuit segment and how those changes would impact the calculation of risk from one risk model to the next. Table 3 collects data regarding changes in calculated risk, length, and name of each circuit segment, which utilities plan to include in its proposed mitigation programs. This enables the analysis and comparison of data created across different risk models and supports comparison of such data across various proceedings where such data may be presented.

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[6] For more information on the RRU, see R.20-07-013, Phase 4 Workshop 1, SPD Staff Proposal on Definition of Scoped Work and the Risk Reporting Unit, November 8 2024

[7] Please see the Proposed and Alternative Mitigations field described below and in the Excel data template attached to this Guideline.

Table 4: HFTD and Associated Asset (Electric Grid Infrastructure Specific)

This table documents low-risk associated assets mitigated alongside primary electric grid infrastructure due to operational constraints or interconnected systems.[8] It includes associated costs, miles, and risk reduction for comprehensive project management of risk on electric grid infrastructure.

Table 4 attempts to collect and clarify information regarding how the additional electric grid infrastructure associated assets can affect the risk reduction, costs, and Benefit-Cost Ratio (BCR) of the proposed RRU.

Table 5: HCA/MCA and Associated Assets (Gas Infrastructure Specific)

Specific to gas operations, this table documents low-risk gas infrastructure associated assets mitigated alongside primary gas infrastructure due to operational constraints or interconnected systems.[9] It includes associated costs, miles, and risk reductions to capture the nuances of gas system risk management.

Table 5 attempts to collect and clarify information regarding how the additional gas infrastructure associated assets can affect the risk reduction, costs, and BCR of the proposed RRU.

Table 6: Financial Inputs (General)

This table provides financial parameters and metrics required to calculate and evaluate risk mitigations, including discount rates, customer-minute interruptions (CMI), the value of statistical life (VSL), and present value revenue requirements (PVRR). These inputs ensure that economic factors are systematically integrated into risk evaluations.

Table 7: Interruption Cost Estimate (ICE) Calculator Inputs

This table provides inputs that can be integrated into the ICE Calculator to estimate the cost per customer-minute interruption, by categorizing outages by time of day, season, and customer type. The ICE Calculator integrates key reliability metrics such as SAIDI and SAIFI to estimate the impact of service interruptions.

Based on data requests and responses issued in Pacific Gas and Electric's (PG&E) 2024 RAMP Proceeding and in preparation of San Diego Gas and Electric's (SDG&E) pre-filing workshop for its 2025 RAMP, SPD recommends that the utilities present ICE Calculator inputs that can be used to estimate the monetized value of electric reliability in a manner similar to the approach found in the SPD data requests.[10]

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[8] In Table 4, "low-risk" is defined as electric grid infrastructure assets whose risk level is below the threshold of two standard deviations (where the standard deviation is a measure of the amount of variation of the values of a variable about its mean) compared to the median and average risk of electric grid infrastructure assets mitigated by the RRU.

[9] In Table 5, "low-risk" is defined as gas infrastructure assets whose risk level is below the threshold of two standard deviations (where the standard deviation is a measure of the amount of variation of the values of a variable about its mean) compared to the median and average risk of gas infrastructure assets mitigated by the RRU.

[10] For additional details, see R.24-05-008, PG&E response to SPD data request SPD-PGE-2024RAMP-002 and SDG&E response to SPD data request SPD-SEMRA-2025RAMP-002.

Tables and Data Requirements

Table 1: Data Set (General)

Field Name	Field Description	Field Value Constraints
RRU_ID	A unique value identifying the RRU. 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 common 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, risk event, tranche and mitigation type.[11]	VARCHAR(255)
GRC_Activity_Code	This is the Activity Code for the Proposed Mitigation relevant to this RRU. Field values are expected to utilize the following notational systems: PG&E: Maintenance Activity Type (MAT) SCE: Work Breakdown Structure (WBS) Sempra: Capital Programs are defined at the budget code; Expense programs are defined at the workpaper.[12]	VARCHAR(255)
Filings	List of all filing(s), including advice letters and Petitions for Modification (PFMs), where the RRU is reported and a budget is requested including but not limited to a GRC application and Wildfire Mitigation Plan filing.	TEXT
State_Legislative_District	State Legislative District of the service territory in which the RRU is located.	VARCHAR(255)

[11] R.20-07-013, Phase 4 Workshop 1, SPD Staff Proposal on Definition of Scoped Work and the Risk Reporting Unit, November 8 2024 at 20. See also the discussion in R.20-07-013, Phase 4 Workshop 3, SPD Staff Proposal on Risk Mitigation Accountability Reports at 22, December 30 2024.

[12] D.24-05-064, Appendix A, Row 28.

Field Name	Field Description	Field Value Constraints
Operational_Division_Headquarter_By_HFTD_Tiers	Operational Division or Headquarter and one of the following codes to identify the HFTD tier designation within the service territory: 1 = Non-HFTD 2 = HFTD Tier 2 3 = HFTD Tier 3 Examples: "Yosemite3", or "Kern2", or "San Francisco1." This field is applicable to RRUs that mitigate risks on Electric Grid Infrastructure.	VARCHAR(255)
Tranche_Level	The Tranche that includes the Assets or Systems that the RRU mitigates. Each RRU can only mitigate the risk exhibited by Assets or Systems found in one Tranche. Tranches are the quintiles of Likelihood of Risk Event (LoRE) and Consequence of Risk Event (CoRE). The structure of the Tranche level to record in this field is represented as LoRE quintile and CoRE quintile that make up each tranche. Thus, the Tranche Level should be presented in the following shorthand: CoRE 1×LoRE 2 or CoRE 2×LoRE 1 If the utility opts to write a whitepaper presenting an alternative approach to tranches, they must create a clear and concise shorthand for the structure of the tranches.[13]	VARCHAR(255)
Asset_System_List	List of the unique Assets and/or the unique Systems that exhibit risk, which is mitigated by the RRU.[14]	TEXT

[13] For more detail on the Tranche Level field, see D.24-05-064 at 26-33 and D.24-05-064, Appendix A, Row 14. Even if the utility records a Tranche Level in this field that accords with the tranche structure in its alternative approach to tranches, SPD reserves its right to challenge any alternative approach to tranches if it is applied to any risk when the utility files its RAMP application (See D.24-05-064 at 31).

[14] Asset is a retirement unit that exhibits risk, as defined by Federal Energy Regulatory Commission (FERC) Uniform System of Accounts (USOA). A System is defined as a regularly interacting or interdependent group of items forming a unified whole that

Field Name	Field Description	Field Value Constraints
	This should include, but not limited to, the following examples: For the electrical system: Isolatable Circuit Segments or Circuit Segments. For the gas system: Pipeline Segments or other gas assets between valves, compressor stations, M&C facilities. This field should also include the List of Associated Assets, if any, found in Table 4 or Table 5.	
Total_Work_Units	Total number of work units included in the RRU.	REAL
Risk_Ranking	Ranking of the total pre-mitigated risk that is exhibited by the assets or systems that the RRU mitigates (E.g., where the risk level of the assets or systems mitigated by the RRU lies in comparison with risk level of the assets or systems mitigated by other RRUs across the entire Proposed Mitigation Program).	VARCHAR(255)
Primary_Risk_Event_Mitigated	Primary risks targeted for mitigation by the RRU.	VARCHAR(255)
Secondary_Risk_Event_Mitigated	List of Secondary risks targeted for mitigation by the RRU.	VARCHAR(255)
Scoping_Date	The year, month and day the utility intends to begin or did begin the scoping process of this mitigation for the RRU.	Date (YYYY-MM-DD)[15]
Start_Date	The year, month and day the utility intends to begin or did begin the construction or implementation of the RRU.	Date (YYYY-MM-DD)[16]
Proposed_and_Alternative_Mitigations	This field must include the Proposed Mitigation and the Alternative Mitigations	VARCHAR(255)

exhibits risk and cannot be classified as a retirement unit. See R.20-07-013, Phase 4 Workshop 1, SPD Staff Proposal on Definition of Scoped Work and the Risk Reporting Unit, November 8 2024 at 20.

[15] If the year, month and day is available, the utility must record this information in this field using the YYYY-MM-DD format.

[16] If the day is not yet confirmed, the utility must use 01 for the day (i.e. 2025-02-01).

Field Name	Field Description	Field Value Constraints
	that the utility has considered for this RRU. All following risk and cost analyses are carried on based on the value inputted within this field.[17] This field enables comparing risk analyses of several alternative mitigations options for the same RRU.	
Proposed_Mitigation_Justification1	Primary reason for choosing the proposed mitigation measures that the utility proposed for the RRU. This field can include, but is not limited to, responses such as operational limitations, cost efficiency, continuity, and benefits for other risk events.	VARCHAR(255)
Proposed_Mitigation_Justification2	Other reasons for choosing the proposed mitigation measures that the utility proposed for the RRU. This field can include, but is not limited to, responses such as operational limitations, cost efficiency, continuity, and benefits for other risk events.	VARCHAR(255)
Status	Preset domain to identify the current status of RRU mitigation. The preset options include: • Scoping: Identifying the size and timeline of the RRU. Scoping is the first step to providing visibility to the construction feasibility and possible execution timing. Designing: Delineation of a plan for implementing the RRU including determining the RRU's integration within existing infrastructure or operations and need for materials, training, or permitting. The costs for completing the RRU, including for permitting, labor and materials, are forecasted at this stage.	VARCHAR(255)

[17] For more information on alternative mitigation analysis, see D.18-12-014 at 34.

Field Name	Field Description	Field Value Constraints
	• Permitting: The process of obtaining the rights and permits from relevant stakeholders to implement the RRU. This stage of the lifecycle also includes negotiating of contracts to implement the RRU as well as final estimation of the costs associated with implementing the RRU. • 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.[18]	
Used_and_Useful_Date	The year, month and day the utility intends to make or did make this RRU used and useful. Used and useful means to be fully complete and providing service to customers.	Date (YYYY-MM-DD)[19]
Useful_Life	The value of the useful life of the Proposed and Alternative Mitigation, typically represented as years.	REAL
Pre_Mitigated_Likelihood_of_Risk_Event	The likelihood of the Primary Risk Event occurring before Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU.	REAL
Pre_Mitigated_Safety_Consequences	The unscaled expected value of Safety Consequences (e.g., injuries or fatalities)	REAL

[18] Information about the Status field can also be found in R.20-07-013, Phase 4 Workshop 1, SPD Staff Proposal on Definition of Scoped Work and the Risk Reporting Unit, November 8 2024 at 10-11.

[19] If the day is not yet confirmed, the utility must use 01 for the day (i.e. 2025-02-01).

Field Name	Field Description	Field Value Constraints
	before the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU. (Natural Units)	
Pre_Mitigated_Reliability_Consequences	The unscaled expected value of Reliability Consequences (e.g., Customer minutes interrupted) before the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU. (Natural Units)	REAL
Pre_Mitigated_Financial_Consequences	The unscaled expected value of Financial Consequences before the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU. (Natural Units)	REAL
Post_Mitigated_Likelihood_of_Risk_Event	The likelihood of the Primary Risk Event occurring after the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU.	REAL
Post_Mitigated_Safety_Consequences	The unscaled expected value of Safety Consequences (e.g., injuries or fatalities) after the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU. (Natural Units)	REAL
Post_Mitigated_Reliability_Consequences	The unscaled expected value of Reliability Consequences (e.g., Customer minutes interrupted) after the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU. (Natural Units)	REAL
Post_Mitigated_Financial_Consequences	The unscaled expected value of Financial Consequences after the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU. (Natural Units)	REAL
Pre_Mitigated_Risk	Unscaled value of Risk before the Proposed and Alternative Mitigations measures are applied to the assets or system associated with this RRU. (Dollar Value)	REAL
Post_Mitigated_Risk	Unscaled value of Risk after the Proposed and Alternative Mitigations measures are	REAL

Field Name	Field Description	Field Value Constraints
	applied to the assets or system associated with this RRU. (Dollar Value)	
Discount_Rate_Scenario	The discount rate (See Table 6) used to calculate the Mitigation Benefit, Present Value Costs, and Benefit-Cost Ratio, among others. Input in this field should be one of the following: • WACC Discount Rate Scenario • Societal Discount Rate Scenario • Hybrid Discount Rate Scenario	VARCHAR(255)
Mitigation_Benefit	Present value of the Risk Reduction of the Proposed and Alternative Mitigations measure for the RRU. (Dollar Value)	REAL
Total_Costs	Total nominal value of the expenditures of the Proposed and Alternative Mitigations for the RRU. This value must be identical with the Total Costs field in Table 3.	REAL
Present_Value_Costs	Present value of the costs of the Proposed and Alternative Mitigations for the RRU.	REAL
Benefit_Cost_Ratio	Benefit-Cost Ratio of the Proposed and Alternative Mitigations for the RRU.	REAL
Average_Unit_Cost	The average unit cost of the Proposed and Alternative Mitigations for the RRU.	REAL
Risk_Model	Name and Version of Risk Model used to calculate Benefit-Cost Ratio of the Proposed and Alternative Mitigations for the RRU.	VARCHAR(255)
Reporting_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are reported.	Date (YYYY-MM-DD)
Calculated_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are calculated.	Date (YYYY-MM-DD)

Table 2: Cost Breakdown (General)

Field Name	Field Description	Field Value Constraints
RRU_ID	A unique value identifying the RRU.	VARCHAR(255)
Proposed_and_Alternative_Mitigations	This field must include the Proposed Mitigation and the Alternative Mitigations that the utility has considered for this RRU. All following cost analyses are carried on based on the value inputted within this field. This field enables comparing risk analyses of several alternative mitigations options for the same RRU. This value must be identical with the Proposed and Alternative Mitigations field in Table 1.	VARCHAR(255)
CapEx_Labor	Capital expenditures for labor including all the required Engineering, Design, and Construction.	REAL
OpEx_Labor	Operational expenditures for labor including all the required Engineering, Design, and Construction.	REAL
CapEx_Materials	Capital expenditures for all required materials.	REAL
OpEx_Materials	Operational expenditures for all required materials.	REAL
CapEx_Permits_Environmental	Capital expenditures for permitting from local and state agencies that cover, for instance, but not limited to, environmental impact assessments.	REAL
OpEx_Permits_Environmental	Operational expenditures for permitting from local and state agencies that cover, for instance, but not limited to, environmental impact assessments.	REAL
CapEx_Foundational	Capital expenditures for foundational programs and activities as specified in D.21-11-009.	REAL
OpEx_Foundational	Operational expenditures for foundational programs and activities as specified in D.21-11-009.	REAL
CapEx_Other_Costs	Capital expenditures not categorized in the rows above.	REAL
OpEx_Other_Costs	Operational expenditures not categorized in the rows above.	REAL
Total_CapEx	Total nominal value of the Capital expenditures of the Proposed and Alternative Mitigations for the RRU.	REAL
Total_OpEx	Total nominal value of the Operational expenditures of the Proposed and Alternative Mitigations for the RRU.	REAL

Field Name	Field Description	Field Value Constraints
Total_Costs	Total nominal value of the expenditures of the Proposed and Alternative Mitigations for the RRU. This value must be identical with the Total Costs field in Table 1.	REAL
Reporting_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are reported.	Date (YYYY-MM-DD)
Calculated_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are calculated.	Date (YYYY-MM-DD)

Table 3: Risk Model Change Tracker (Electric Grid Infrastructure Specific)

Field Name	Field Description	Field Value Constraints
RRU_ID	A unique value identifying the RRU.	VARCHAR(255)
Current_Asset_System_List	List of current unique Assets and/or the unique Systems that exhibit risk, which is mitigated by the RRU. The list in this field should be the same as the list in the List of Asset(s) or System(s) field in Table 1. This should include, but not limited to, the following examples: For the electrical system: Isolatable Circuit Segments or Circuit Segments. For the gas system: Pipeline Segments or other gas assets between valves, compressor stations, M&C facilities.	TEXT
Current_Risk_Model	Name and Version of the updated Risk Model used to calculate the risk score for the assets mitigated by the RRU. (E.g., V2)	VARCHAR(255)
Current_Total_Miles	Total circuit miles under **Current Risk Model** for the RRU.	VARCHAR(255)
Current_HFTD_Miles	Total miles in High Fire-Threat District (HFTD) under **Current Risk Model** for the RRU.	VARCHAR(255)
Current_Non_HFTD_Miles	Total miles (if any) that extend beyond the High Fire-Threat District (HFTD) under **Current Risk Model** for the RRU.	VARCHAR(255)
Current_Pre_Mitigated_Risk_Score	The pre-mitigated risk score for the assets mitigated by the RRU calculated under the **Current Risk Model**. (Dollar Value)	VARCHAR(255)
Current_Risk_Percentage	The pre-mitigated risk score for the assets mitigated by the RRU divided by the total risk score calculated using the **Current Risk Model**.	VARCHAR(255)
Change_Type	Identification of how the assets or systems mitigated by the RRU have been defined and redefined since the last update: • New Data Inputs to Risk Model	VARCHAR(255)

Field Name	Field Description	Field Value Constraints
	• New Construction of Asset(s) or System(s) • Renaming of Asset(s) or System(s) • Splitting of Asset(s) or System(s) • Merging of Asset(s) or System(s) • Other	
Change_Date	Date the assets or systems mitigated by the RRU were changed.	Date (YYYY-MM-DD)
Previous_Asset_System_List	For each RRU, if the value in the Change Type field in this Table is one of the following: • New Construction of Asset(s) or System(s) • Renaming of Asset(s) or System(s) • Splitting of Asset(s) or System(s) • Merging of Asset(s) or System(s) Then list the unique Assets and/or the unique Systems mitigated by the RRU, prior to the Change Date. This should include, but not limited to, the following examples: For the electrical system: Isolatable Circuit Segments or Circuit Segments. For the gas system: Pipeline Segments or other gas assets between valves, compressor stations, M&C facilities.	TEXT
Previous_Risk_Model	Name and Version of the previous Risk Model used to calculate the risk score for the assets mitigated by the RRU.	VARCHAR(255)
Previous_Total_Miles	Total circuit miles under the **Previous Risk Model** for the RRU.	VARCHAR(255)
Previous_HFTD_Miles	Total miles in High Fire-Threat District (HFTD) under Previous Risk Model for the RRU.	VARCHAR(255)
Previous_Non_HFTD_Miles	Total miles (if any) that extend beyond the High Fire-Threat District (HFTD) under **Previous Risk Model** for the RRU.	VARCHAR(255)
Previous_Pre_Mitigated_Risk_Score	The pre-mitigated risk score for the assets mitigated by the RRU calculated under the **Previous Risk Model**. (Dollar Value)	VARCHAR(255)
Previous_Risk_Percentage	The pre-mitigated risk score for the assets	VARCHAR(255)

Field Name	Field Description	Field Value Constraints
	mitigated by the RRU divided by the total risk score calculated using the **Previous Risk Model**.	
Reporting_Date	The date the risk and costs associated with the **Current Risk Model** are reported.	Date (YYYY-MM-DD)
Calculated_Date	The date the risk and costs associated with the **Current Risk Model** are calculated.	Date (YYYY-MM-DD)

Table 4: HFTD and Associated Asset (Electric Grid Infrastructure Specific)

Field Name	Field Description	Field Value Constraints
RRU_ID	A unique value identifying the RRU.	VARCHAR(255)
HFTD_Tier3_Miles	If applicable, total number of miles included in the RRU located in HFTD Tier 3.	REAL
HFTD_Tier2_Miles	If applicable, total number of miles included in the RRU located in HFTD Tier 2.	REAL
Wildfire_Rebuild_Miles	If applicable, total number of miles included in the RRU located in Wildfire Rebuild Area.	REAL
Proposed_and_Alternative_Mitigations	This field must include the Proposed Mitigation and the Alternative Mitigations that the utility has considered for this RRU. All following cost and risk analyses are carried on based on the value inputted within this field. This field enables comparing risk analyses of several alternative mitigations options for the same RRU. This value must be identical with the Proposed and Alternative Mitigations field in Table 1.	VARCHAR(255)
Associated_Assets	List of all connected low-risk Associated Assets that the utility plans to mitigate because of operational constraints or reasons other than the reducing risk (e.g., Service lines and Secondary lines).	TEXT
Associated_Asset_Miles	Total associated asset miles included in the RRU that the utility plans to mitigate.	REAL

Field Name	Field Description	Field Value Constraints
Discount_Rate_Scenario	The discount rate (See Table 6) used to calculate the Mitigation Benefit, Present Value Costs, and Benefit-Cost Ratio, among others. Input in this field should be one of the following: • WACC Discount Rate Scenario • Societal Discount Rate Scenario • Hybrid Discount Rate Scenario	VARCHAR(255)
Associated_Assets_Present_Value_Costs	The Present Value of costs of the Proposed and Alternative Mitigations for all of the Associated Assets that the utility plans to mitigate.	REAL
Associated_Assets_Mitigation_Benefit	Present value of the Risk Reduction of the Proposed and Alternative Mitigations for all of the Associated Assets that the utility plans to mitigate.	REAL
Reporting_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are reported.	Date (YYYY-MM-DD)
Calculated_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are calculated.	Date (YYYY-MM-DD)

Table 5: HCA/MCA and Associated Assets (Gas Infrastructure Specific)

Field Name	Field Description	Field Value Constraints
RRU_ID	A unique value identifying the RRU.	VARCHAR(255)
HCA_Miles	If applicable, total number of miles included in the RRU located in the High Consequence Area (HCA).	REAL
MCA_Miles	If applicable, total number of miles included in the RRU located in the Moderate Consequence Area (MCA).	REAL
Proposed_and_Alternative_Mitigations	This field must include the Proposed Mitigation and the Alternative Mitigations that the utility has considered for this RRU. All following cost and risk analyses are carried on based on the value inputted within this field. This field enables comparing risk analyses of several alternative mitigations options for the same RRU. This value must be identical with the Proposed and Alternative Mitigations field in Table 1.	VARCHAR(255)
Associated_Assets	List of all connected low risk Associated Assets that utilities plan to mitigate because of operational constraints or other reasons (e.g., Environmental Factors, Broader Infrastructure Coordination such as Other Gas Asset Replacement Projects, Electrical Infrastructure Projects, Transition to Renewable Natural Gas).	TEXT
Associated_Asset_Miles	Total associated asset miles included in the RRU that the utility plans to mitigate.	REAL
Discount_Rate_Scenario	The discount rate (See Table 6) used to calculate the Mitigation Benefit, Present Value Costs, and Benefit-Cost Ratio, among others. Input in this field should be one of the following: • WACC Discount Rate Scenario • Societal Discount Rate Scenario • Hybrid Discount Rate Scenario	VARCHAR(255)
Associated_Assets_Present_Value_Costs	The Present Value of costs of the Proposed and Alternative Mitigations for all of the Associated Assets that the utility plans to mitigate.	REAL
Associated_Assets_Mitigation_Benefit	Present value of the Risk Reduction of the Proposed and Alternative Mitigations for all of the Associated Assets that the utility plans to mitigate.	REAL

Field Name	Field Description	Field Value Constraints
Reporting_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are reported.	Date (YYYY-MM-DD)
Calculated_Date	The date the risk and costs for the Proposed and Alternative Mitigations for the RRU are calculated.	Date (YYYY-MM-DD)

Table 6: Financial Inputs

Field Name	Field Description	Field Value Constraints
WACC_Discount_Rate	The Weighted Average Cost of Capital (WACC) Discount Rate Scenario the utility must use to calculate Present Value Benefits and Costs as well as the BCR for an RRU.[20]	REAL
Societal_Discount_Rate	The Societal Discount Rate Scenario the utility must use to calculate Present Value Benefits and Costs as well as the BCR for an RRU.[21]	REAL
VSL	Dollar value of statistical life used to monetize the Safety Consequence.[22]	REAL
Financial	Dollar value used to monetize the Financial Consequence, which equals $1.	REAL
Gas_Reliability_Valuation	Standard dollar value per customer minute interrupted based on the implied value from a utility's most recent RAMP.[23]	REAL
Escalation_Factor	The escalation factor to account for the anticipated increase in costs over time due to factors like inflation, labor cost increases, material cost changes, or other economic conditions.	REAL
PVRR	PVRR or Present Value Revenue Requirement is the financial metric the utility used in its rate case and long-term planning to evaluate the cost implications of investments or programs over the life of the asset. Providing the PVRR is optional.	REAL
ICE_Calculator_Version	The ICE Calculator version that utility uses to estimate dollar value per customer minute interrupted.	REAL
Reporting_Date	The date the Financial Inputs are reported.	Date (YYYY-MM-DD)
Calculated_Date	The date the Financial Inputs are calculated.	Date (YYYY-MM-DD)

[20] D.24-05-064 at 103

[21] D.24-05-064 at 102-103

[22] D.22-12-027, OP 2a

[23] D.22-12-027, OP 2c

Table 7: Interruption Cost Estimate Calculator Inputs

Field Name	Field Description	Field Value Constraints
Operational_Division_Headquarter_By_HFTD_Tiers	Operational Division or Headquarter and one of the following codes to identify the HFTD tier designation within the service territory: 1 = Non-HFTD 2 = HFTD Tier 2 3 = HFTD Tier 3 Examples: "Yosemite3", or "Kern2", or "San Francisco1."	VARCHAR(255)
Affected_Customers_Residential	Total number of residential customers affected by risk events.	REAL
Affected_Customers_Small_CI	Total number of small commercial and industrial customers affected by risk events.	REAL
Affected_Customers_Medium_Large_CI	Total number of medium and large commercial and industrial customers affected by risk events.	REAL
Average_Annual_Usage_Residential	Average annual electricity usage in megawatt-hours for residential customers.	REAL
Average_Annual_Usage_Small_CI	Average annual electricity usage in megawatt-hours for small commercial and industrial customers.	REAL
Average_Annual_Usage_Medium_Large_CI	Average annual electricity usage in megawatt-hours for medium and large commercial and industrial customers.	REAL
Medium_Large_CI_Manufacturing_Percentage	Percentage of medium and large commercial and industrial customers engaged in manufacturing.	REAL
Medium_Large_CI_Construction_Percentage	Percentage of medium and large commercial and industrial customers engaged in construction.	REAL
Medium_Large_CI_BG_or_PC_Percentage	Percentage of medium and large commercial and industrial customers with backup generation or power conditioning.	REAL
Medium_Large_CI_BG_and_PC_Percentage	Percentage of medium and large commercial and industrial customers with backup generation and power conditioning.	REAL
Small_CI_Manufacturing_Percentage	Percentage of small commercial and industrial customers engaged in manufacturing.	REAL

Field Name	Field Description	Field Value Constraints
Small_CI_Construction_Percentage	Percentage of small commercial and industrial customers engaged in construction.	REAL
Small_CI_BG_or_PC_Percentage	Percentage of small commercial and industrial customers with backup generation or power conditioning.	REAL
Small_CI_BG_and_PC_Percentage	Percentage of small commercial and industrial customers with backup generation and power conditioning.	REAL
Outage_Morning_Percentage	Percentage of outages occurring in the morning, from 6am-12pm.	REAL
Outage_Afternoon_Percentage	Percentage of outages occurring in the afternoon, from 12pm-5pm.	REAL
Outage_Evening_Percentage	Percentage of outages occurring in the evening, from 5pm-10pm.	REAL
Outage_Night_Percentage	Percentage of outages occurring in the night, from 10pm-6am.	REAL
Outage_Summer_Percentage	Percentage of outages occurring in the Summer months, from June through September.	REAL
Outage_Non_Summer_Percentage	Percentage of outages occurring in the non-Summer months, from October through May.	REAL
SAIDI	System Average Interruption Duration Index. It is calculated by dividing the total minutes of customer interruptions by the total number of customers served.	REAL
SAIFI	System Average Interruption Frequency Index. It is calculated by dividing the total number of customer interruptions by the total number of customers served.	REAL
Electric_Reliability_Valuation	Standard dollar value per customer minute interrupted as estimated by the Interruption Cost Estimate Calculator[24] for each Operational_Division_Headquarter_By_HFTD_Tiers.	REAL
Reporting_Date	The date the ICE Calculator Inputs are reported.	Date (YYYY-MM-DD)

[24] D.22-12-027, OP 2b

Field Name	Field Description	Field Value Constraints
Calculated_Date	The date the ICE Calculator Inputs are calculated.	Date (YYYY-MM-DD)