APPENDICES

This Page Intentionally Left Blank

Appendix A. Definitions

Unless otherwise expressly stated, the following words and terms, for the purposes of these Guidelines, have the meanings shown in this section.

"10-Year Electrical Undergrounding Program" means "an expedited utility distribution infrastructure undergrounding program" established by the CPUC pursuant to section 8388.5(a).

"Ablation Analysis" means the effects of a Portfolio if a single project is taken out of the Portfolio. It reports these effects at both the Project-Level and Portfolio-Level.

"Alternative Mitigation" means a mitigation strategy, other than undergroundingUndergrounding, used to reduce the consequence or likelihood of wildfires and Outage Program Events on a particular Circuit Segment.

"Baseline" means the expected risk and reliability profile of the Large Electrical Corporation's existing distribution system assuming that no Undergrounding Projects from the EUP program are constructed during the asset life cycle. The Baseline includes all previously approved Undergrounding Projects, system-hardening projects, and similar mitigation activities.

"Circuit" means a combination of all Circuit Segments that are fed from the same substation circuit breaker.

"Circuit Segment" means an isolatable circuit segment.

"Collective Analysis" means the effects of a single Undergrounding Project, in combination with the rest of the projects that are in the Portfolio. The Collective Analysis reports these effects on the Project-Level as well as the Portfolio-Level.

"Confirmed Project" means an Undergrounding Project that has completed Screen 3 (Project Risk Analysis).

"Confirmed Project Polygon" means a special boundary generated at the beginning of Screen 3 that encompasses the entire Eligible Circuit Segment on which the Undergrounding Project is defined, except any sections already contained in another Confirmed Project Polygon.

"Core Capabilities" means the required use-cases that the Large Electrical Corporation's Risk Modeling Methodology must be able to achieve in order to make quantitative arguments about the risk reduction of Undergrounding and Alternative Mitigations.

"CPUC CBR" means the cost-benefit ratio produced by the cost-benefit approach adopted in the CPUC's Decision 22-12-027 (as modified by any subsequent decision).

"CPUC Data Appendix 1" means the final adopted version of "Appendix 1: SB 884 Project List Data Requirements-Preliminary" to the SB 884 Program CPUC Guidelines dated March 7, 2024, and adopted by the CPUC in Resolution SPD-15.

"Data Request Response Period" means the period of time during which Energy Safety data requests automatically have a three-day response time unless otherwise specified by Energy Safety.

"Data Request Stakeholder" means a stakeholder who has requested and obtained Data Request Stakeholder in accordance with Section 3.7.2.

"Deenergization Event" has the meaning given in section 8385(a)(2) ("the proactive interruption of electrical service for the purpose of mitigating or avoiding the risk of causing a wildfire"). See also **"Outage Program."**

"Electrical Corporation" has the same meaning as set forth in section 218 of the California Public Utilities Code.

"Electrical Undergrounding Plan" or **"EUP"** means a plan submitted pursuant to section 8388.5.

"Eligible Circuit Segment" means a Circuit Segment that falls within the risk score values that will be used to identify high risk Circuit Segments that are eligible for the 10-Year Electrical Undergrounding Program.

"GO 95" means CPUC General Order 95 (Rules for Overhead Line Construction).

"GO 128" means CPUC General Order 128 (Rules for Construction of Underground Electric Supply and Communication Systems).

"HFTD" or **"High Fire-Threat District"** means areas of the state designated by the CPUC as having elevated wildfire risk, where each Electrical Corporation must take additional action to mitigate wildfire risk pursuant to Decision 17-01-009 or its successor.

"High Frequency Outage Program Project-Level Standard" is the minimum decrease in Outage Program Likelihood as measured through formal calculations of the Key Decision-Making Metrics that any Undergrounding Project considered under the High Frequency Outage Program must achieve to meet the required substantial increase in electrical reliability achieved by reducing the use of Public Safety Power Shutoffs, Enhanced Powerline Safety Settings, deenergization events, and any other outage programs.

"High Frequency Outage Program Threshold" is the measure of likelihood above which is considered to have a significantly high likelihood of frequent or prolonged disruption of service to customers. This threshold must measure both likelihood of an Outage Program Event and its anticipated length. This threshold must represent less than 1% of Circuit Segments in the entire system by mile and no more than 10% of Outage Program Likelihood by score.

"High-Risk Threshold" means the Overall Utility Risk level above which a Circuit Segment is considered eligible for examination for expedited ~~undergrounding~~Undergrounding.

"High-Risk Project-Level Standard" is the minimum decrease in Ignition Risk and Outage Program Risk, that an Undergrounding Project must achieve to support the Plan Mitigation Objective. This reduction in wildfire risk and increase in reliability must, at minimum, reduce the risk of the Circuit Segment to below the ~~Mitigated~~ High-Risk Threshold.

"Ignition Consequence" means the total anticipated adverse effects from a wildfire on each community it reaches. This metric considers the wildfire hazard intensity, the wildfire exposure potential, and the inherent wildfire vulnerabilities of communities at risk.

"Ignition Likelihood" means the likelihood of an ignition at a given location given a probabilistic set of environmental conditions. This is an unweighted and unscaled calculation.

"Ignition Risk" means the measure of impacts from wildfire at a given location. This metric is the product of two factors: (1) the likelihood a wildfire will occur, and (2) the potential consequences of a wildfire originating from this location.

"Ignition Risk Decrease Standard" is the minimum decrease in Ignition related metrics, as measured through formal calculations of the Key Decision-Making Metrics across the entire system at both the System-Level and Portfolio-Level that the EUP must achieve to meet the required decrease in wildfire risk.

"Ignition Tail Risk Threshold" is the measure of consequence above which a Circuit Segment is considered to have significant potential for catastrophic wildfire, that it merits special consideration. This threshold must represent less than 1% of Circuit Segments in the entire system by mile and no more than 10% of the wildfire consequence by score.

"In-Area Circuit Segment" means a Circuit Segment located within the Large Electrical Corporation's service territory that is located in a Tier 2 or 3 High Fire-Threat District or a Wildfire Rebuild Area.

"Independent Monitor" means the independent monitor selected by Energy Safety and hired by the Large Electrical Corporation per section 8388.5(f)(3).

"JSON" or **"JavaScript Object Notation"** is a data file type designed to track unstructured data that would not be appropriate for a spreadsheet format.

"Key Decision-Making Metric" or **"KDMM"** means the key decision-making metrics developed pursuant to Section 2.7.3 of these Guidelines.

"Large Electrical Corporation" has the meaning given in section 3280 of the California Public Utilities Code ("an electrical corporation with 250,000 or more customer accounts within the state.")

~~**"Mitigated Risk Threshold"** is the combined measure of Ignition Risk and Outage Program Risk below which a Circuit Segment is considered to be of acceptable risk.~~

"Mitigated Circuit Segment Standards" are the Project-Level risk scores that an Eligible Circuit Segment must reach to be considered sufficiently mitigated under the terms of the EUP. These standards consist of the High-Risk Project Level Standard, the Ignition Tail Risk Project-Level Standard, and the High Frequency Outage Program Project-Level Standard.

"Model Risk Landscape" or **"MRL"** means the model risk landscape defined for the EUP pursuant to Section 2.7.4 of these Guidelines.

"Modification Notice" means the notice issued by Energy Safety if Energy Safety requires changes to an EUP before approving an EUP.

"Modification Notice Response" means the written response of the Large Electrical Corporation to a Modification Notice.

"Non-EUP Project" means a distribution undergrounding or other system hardening project in a Tier 2 or 3 High Fire Threat District that is funded or in the Project Planning and Construction Phases, that is not included in the 10-Year EUP.

"Out of Area Circuit Segment" means a Circuit Segment located within the Large Electrical Corporation's service territory that is not located in a Tier 2 or 3 High Fire-Threat District or a Wildfire Rebuild Area.

"Outage Program" means (i) any program that interrupts electrical service for the purpose of mitigating or avoiding the risk of causing a wildfire including Public Safety Power Shutoff (PSPS) programs, fast trip settings (including enhanced powerline safety settings, Fast Curve Settings, and Sensitive Relay Profile) and similar programs, and (ii) any program that could result in a deenergization event. Outage Programs exclude maintenance outages and other outages not related to reducing wildfire risk.

"Outage Program Consequence" is the total anticipated adverse effects from an Outage Program for a community. This considers the Outage Program exposure potential and inherent Outage Program vulnerabilities of communities at risk.

"Outage Program Event" means an outage that results from an Outage Program.

"Outage Program Likelihood" is the likelihood of a Large Electrical Corporation utilizing an Outage Program given a probabilistic set of environmental conditions.

"Outage Program Risk" is the measure of reliability impacts from Outage Programs at a given location. This metric is the product of two factors: (1) the likelihood an Outage Program Event will be required due to environmental conditions exceeding design conditions, and (2) the potential consequences of the Outage Program for affected customers, considering exposure potential and vulnerability. This is an unweighted and unscaled calculation.

"Overall Utility Risk" is defined as the combined measure of Ignition Risk and Outage Program Risk that measures the total risk of wildfires and Outage Program Events related to wildfire risks. This is computed as the inner product of the likelihoods of adverse events and their consequences. This is an unweighted and unscaled calculation.

"Plan Mitigation Objective" means the amount of change in risk (wildfire and reliability) that is necessary to meet the requirements contained in section 8388.5(d)(2).

"Plan Tracking Objectives" are forward-looking, quantifiable measurements and objectives, measured at the Portfolio-Level and System-Level, used to assess progress toward the Plan Mitigation Objective.

"Portfolio" means the set of all Confirmed Projects at Screen 3 or later. A Portfolio is a unique list of Confirmed Projects, and adding or removing Confirmed Projects from the list constitutes an update to the Portfolio and must be indicated with a new portfolio ID.

"Portfolio-Level" refers to a measurement that accumulates information from every Circuit Segment on a Circuit which has one or more Confirmed Projects as well as the effects of Confirmed Projects on the overall Circuit into a single number.

"Portfolio-Level Standards" means the Ignition Risk Decrease Standard and the Reliability Increase Standard.

"Pre-Wildfire" refers to the most recently modelled undamaged distribution infrastructure and the associated risk modeling of distribution infrastructure damaged by wildfire within a Wildfire Rebuild Area.

"**Prioritized Project**" means an Undergrounding Project that has passed Screen 4 (Prioritization and Finalization).

"Project Acceptance Framework" means the multi-step process, described in Section 2.4 of these Guidelines, that the Large Electrical Corporation will use to create the list of Undergrounding Projects pursuant to section 8388.5(c)(2), to select Undergrounding Projects for construction, and to maintain and update the Circuit Segment Information Lists throughout the EUP 10-year period.

"Project Construction Completed Phase" is the Project Planning and Construction Phase when the Undergrounding Project is completed, but before the overhead line is deenergized.

"Project Overhead De-Energization Phase" is the Project Planning and Construction Phase when the Undergrounding Project is completed and the overhead line it replaced or upgraded has been deenergized.

"Project-Level" refers to a measurement that accumulates risk from all of the equipment on a single Circuit Segment into a single number.

"Project-Level Standards" means the High-Risk Project-Level Standard, the High Frequency Outage Program Project-Level Standard, and the Tail Risk Project-Level Standard.

"Project-Level Thresholds" means the High-Risk Threshold, Ignition Tail Risk Threshold, and High Frequency Outage Program Threshold, and Mitigated Risk Threshold.

"Project Planning and Construction Phases" means the status categories for projects as listed in CPUC Data Appendix 1, as well as two additional phases defined by Energy Safety. The five phases designated and defined by the CPUC are: (1) Project Scoping, (2) Project Designing/Estimating, (3) Project Permitting/Dependency, (4) Project Ready for Construction, and (5) Project Construction In Progress, and the two additional phases that Energy Safety has designated and defined are: (6) Project Construction Completed and (7) Project Overhead De-energization.

"PSPS" means Public Safety Power Shutoff. See also "**Outage Program**."

"PVM" or **"Project Variable Modifier"** means a set of changes that are made to variables in the Risk Modeling Methodology to evaluate the effectiveness of a given project or set of projects and represents how the Large Electrical Corporation values the efficacy of the Alternative Mitigations.

"Reliability Increase Standard" is the minimum decrease in Outage Program-related metrics, as measured through formal calculations of the Key Decision-Making Metrics across the entire system at both the System-Level and Portfolio-Level, that the EUP must achieve to meet the required increase in reliability.

"Risk Landscape" means the set of metrics the Large Electrical Corporation uses to estimate the risks.

"Risk Modeling Methodology" means the collection of numerical models and algorithms that the Large Electrical Corporation employs to approximate the likelihood and consequences of utility related wildfires and wildfire related Outage Programs.

"Separate Analysis" means the risk reduction of the Undergrounding Project if it was the only project in the Portfolio. Effects must be reported at the Project-Level and Portfolio-Level.

"Subproject" means a delimited portion of work on a Confirmed Project. A Subproject must have a uniform set of mitigations applied to the entire Subproject. If a project does not have a uniform set of mitigations, it must be divided into more Subprojects.

"System-Level" refers to a measurement that accumulates information from the entire electrical distribution system into a single number.

"Tail Risk Project-Level Standard" is the minimum decrease in wildfire likelihood that any Undergrounding Project considered under the Ignition Tail Risk Threshold must achieve to meet the required substantial reduction of the risk of wildfire.

"Target/Timeline Table" means the table, described in Subsection 2.3.1 setting forth project timelines and targets that are required to fulfill section 8388.5(c)(3).

"Undergrounding" means actions taken to convert overhead distribution lines and/or equipment to underground distribution lines and/or equipment in accordance with GO 128 and includes all Undergrounding Support Work.

"Undergrounding Project" means an Eligible Circuit Segment that has completed Screen 2 including the CPUC Data Appendix 1 information completed.

"Undergrounding Subproject" means a Subproject that is comprised of only Undergrounding activities including the Undergrounding Support Work necessary to complete the Undergrounding Subproject.

"Undergrounding Support Work" means the work done in direct support of Undergrounding distribution lines. This includes work and equipment that (i) directly facilitates Undergrounding lines, (ii) transitions between overhead and underground lines, or (iii) is required by construction or design standards or GO 95. This may include the construction of no more than three new distribution poles on either end of an undergrounded portion of distribution line if they are necessary to facilitate the safe transition from overhead to underground.

"Wildfire Rebuild Area" means a location where distribution infrastructure has been damaged by wildfire that is specifically identified by the Large Electrical Corporation in the EUP or in a Progress Report.

"WMP" means the wildfire mitigation plan program and requirements mandated by sections 8385 through 8389.

Appendix B. Organization of EUP

The purpose of this appendix is to assist in the organization of an EUP. This appendix is not a comprehensive enumeration or a modification of existing requirements outlined in the EUP Guidelines.

B.1   Narrative Content

The EUP must include a main document, including narrative and tables, organized into chapters as follows and submitted to the docket following the instructions in Section 3 of the Guidelines. The narrative includes tables appropriate in size and content for a narrative document. The tabular data required for the data submission is detailed in Section B.3 below.

Chapter 1 Basic Information

Required Content	Description of Required Narrative Content
Basic Information	See Section 2.2 of these Guidelines.

Chapter 2 Narrative Requirements for Demonstration of Substantial Risk Reduction

Required Content	Description of Required Narrative Content
Plan Mitigation Objective: Narrative and Implementation Approach	See Section 2.3.1 of these Guidelines.
Target/Timeline Table	See Table 1 in Section 2.3.1 for example.
Plan Tracking Objectives	See Section 2.3.2 of these Guidelines.
Risk Calculations	See Sections 2.3.3, 2.3.4, and 2.3.5 of these Guidelines

Chapter 3 Narrative Requirements for Project Acceptance Framework

Required Content	Description of Required Narrative Content
Incorporating Changes to Circuit Segment Information including Subprojects	See Section 2.4.2 of these Guidelines
Screen 1: Circuit Segment Eligibility	See Section 2.4.3 of these Guidelines
List of Top 20 highest Circuit Segment scores for Overall Utility Risk, Ignition Consequence, and Outage Program Likelihood	See Section 2.4.3.1 of these Guidelines
Screen 2: Project Information and Alternative Mitigation Comparison	See Section 2.4.4 of these Guidelines
Screen 2 Common Set of Values and Assumptions	See Section 2.4.4.1 of these Guidelines.
Screen 3: Project Risk Analysis	See Section 2.4.5 of these Guidelines
Screen 3 Requirement for 25 individual Undergrounding Projects	See Section 2.4.5.2 of these Guidelines.
Screen 4: Project Prioritization	See Section 2.4.6 of these Guidelines

Chapter 4 Narrative Requirements for Circuit Segment Information Lists

Most of the Circuit Segment Information Lists will be submitted as part of the tabular data submission. A narrative describing how the tabular data can be combined and sorted to create the required Circuit Segment Information Lists. Shorter versions of key Circuit

Segment Information Lists (for example, a list of the top 25 highest risk Circuit Segments) can be included in this chapter to provide an overview.

Required Content	Description of Required Narrative Content
Narrative describing Circuit Segment Information Lists	See Section 2.4.7.1 of these Guidelines for narrative content.
Narrative describing Non-EUP projects and programs	See Section 2.4.7.2 of these Guidelines

Chapter 5 Project Timelines, Workforce Development Plan, Costs and Benefits, and Non-Ratepayer Funding Sources

Required Content	Description of Required Narrative Content
Project Timeline and Targets	See Table 1, Section 2.3.1 and Section 2.5.1 of these Guidelines; section 8388.5(c)(3)
Workforce Development Plan	See Section 2.5.2 of these Guidelines; section 8388.5(c)(5)
Costs and Benefits	See Section 2.5.3 of these Guidelines; section 8388.5(c)(6)
Nonratepayer Funding Sources	See Section 2.5.4 of these Guidelines

Chapter 6 Narrative Requirements for Progress Report 0

Required Content	Description of Required Narrative Content
Narrative about Progress Report 0 and in support of Progress Report 0	See Section 2.6 of these Guidelines Note: the actual Progress Report 0 narrative is submitted as a separate document attached to the Narrative Content document.

Chapter 7 Narrative Support for Risk Modeling Methodology

Section Name	Narrative Requirements	Maximum Length of Narrative Section	Required Tables and Figures	Table Requirements
Overview	See 2.7.1	5 Pages	Enterprise Diagram(s)	See 2.7.3.1
Model Report	See 2.7.2	4 Pages per Model	None	None
Core Capabilities	See 2.7.5	2 Pages per Capability	None	None
Model Inputs	See 2.7.5.1	1 Page per Input Category	Model Risk Landscape Variables Table	See 2.8.5.1
Project Variable Modifiers	See 2.7.7	1 Page per Project Variable Modifier	Project Variable Modifiers Inputs Table Project Variable Modifiers Outputs Table	See 2.8.5.2
Calibration and Versioning	See 2.7.5.2 and 2.7.6	2 Pages	None	None
Key Decision-Making Metrics	See 2.7.3	3 Pages for required KDMMs and up to 1 Page each for up to 5 additional KDMMs	None	None
Portfolio-Level Standards	See 2.7.8	2 Pages	None	None
Project-Level Thresholds	See 2.7.9.1	2 Pages	None	None
Project-Level Standards	See 2.7.9.2	2 Pages	None	None

Chapter 8 ~~Narrative for Baseline, Backtesting,~~ Model Retention and ~~Subsequent Model Reports~~<u>Update Schedule</u>

Required Content	Description of Required Narrative Content
Models and Calibration Retention Policies	See Section 2.7.6
Plan to Update Risk Modeling	See Section 2.7.6

Chapter 9 ~~Comparative Metrics for Alternative Mitigations~~

~~Required Content~~	~~Description of Required Narrative Content~~
~~Comparative Metrics~~	~~See 2.7.10~~

~~Chapter 10~~ Narrative Requirements for Reporting Metrics

Provide any narrative to support Section 2.8 of these Guidelines regarding submission of Tabular Data, JSON Data, Spatial Data Reporting, and Data Validation

B.2   Progress Report 0

Progress Report 0 must be submitted as a separate attachment to the EUP.

Required Content	Description
Portfolio Coversheet	See 2.8.6 of these Guidelines
Plan Mitigation Objective	See 2.3.1 of these Guidelines
Plan Tracking Objectives	See 2.3.2 of these Guidelines
Target/Timeline Table	See 2.3.1(j) of these Guidelines

Identified Wildfire Rebuild Areas	See 2.4.3.1 of these Guidelines
Current Model Report	See 2.7.2 of these Guidelines
Data Submission	All data required pursuant to Section 2.8 and Appendix C of these Guidelines
Alternative Mitigation Selection Process	See 2.4.4.1 of these Guidelines
Additional Content (mandatory)	Energy Safety may direct the Large Electrical Corporation to include specific additional content in Progress Report 0.
Additional Content (optional)	Additional content that the Large Electrical Corporation proposes to track in its Progress Reports

B.3   Data Submissions

Instructions on the format for data submissions are found in Appendix C of these Guidelines.

Appendix C. Data Organization & Structure

The purpose of this appendix is to summarize all the information needed for the data submission accompanying the EUP and during all Progress Reports.

C.1   Tabular Data Submissions

This appendix establishes the requirements for the tabular data submission. The submission of the tabular data must map to the submission of the spatial data for both the initial EUP submission and every subsequent Progress Report. The data submission accompanying the initial EUP submission will have the same format as the Progress Reports, so it is referred to in this document as Progress Report 0.

The submission of tabular data must encompass the tables set forth in this appendix. Template files to aid in submission of the data requirements are available on Energy Safety's website. The format of these files is in the form of ".CSV" or comma-separated values files.

Tables C.6 through C.14 are anchored around uniquely identifiable Circuit Segments with unique IDs. The Circuit Segment IDs are required to be unique not only spatially (e.g. no repeated IDs in the system at a particular time) but also temporally (e.g. if a new Circuit Segment is created in Progress Report 1, it must not use an ID found in Progress Report 0). If the Large Electrical Corporation's Circuit Segment naming schema would reuse Circuit Segment IDs, it must append the "minting date," or the date of submission of the first Progress Report in which this Circuit Segment appears, to the end of the Circuit Segment name as an 8-digit date string (e.g. "July 1, 2025" as "20250701").

A Circuit Segment is considered "new", and requires a new Circuit Segment ID, if any of the individual pieces of equipment that define the boundaries of where the Circuit Segment connects to other Circuit Segments or substations (e.g. circuit breakers, reclosers, and other equipment), are removed, are added, or if any of that equipment moves to a new spatial location. However, a Circuit Segment is not considered "new" just because there is any other maintenance, changes to non-terminal equipment, swapping out or upgrading terminal equipment without moving it, changes to the length, or movement of non-connecting endpoints (e.g. the last customer meter on a line). Changes which create "new" Circuit Segments will be tracked in the Circuit Segment Changelog Table.

C.1.1 Plan Table

This section establishes the requirements for a Plan Table. This table is submitted once in Progress Report 0 but not in subsequent submissions. This table is not to be submitted with subsequent Progress Reports.

Table C. 1. describes the construction and data requirements for the Plan Table.

Table C.1. Example Plan Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Unique
utility_name	EC abbreviation. Acceptable values are the following: • PG&E • SDG&E • SCE	NVARCHAR(32)	Limited Options
name	The name of the plan.	NVARCHAR(255)	
start_date	Start date of the plan.	DATETIME	
end_date	End date of the plan.	DATETIME	
plan_submission_date	Date the plan was submitted to Energy Safety.	DATETIME	
narrative_submission	A short form text field to describe a plan.	TEXT	
high_risk_threshold	See "High-Risk Threshold" in Section 2.7.9, Project-Level Thresholds and Standards for definition.	REAL	
ignition_tail_risk_threshold	See "Ignition Tail Risk Threshold" in Section 2.7.9, Project-Level Thresholds and Standards for definition.	REAL	
high_frequency_outage_program_ threshold	See "High Frequency Outage Program Threshold" in Section 2.7.9, Project-Level Thresholds and Standards for definition.	REAL	

Additional requirements for a Plan Table are as follows:

a)a.   The Plan Table has only a single row of data which designates static information regarding the submitted EUP. Values in this table cannot be modified. If any value needs to be modified, this requires submission of a new EUP.

b)b.   The PLAN_ID is defined by the value in this table, and must remain consistent for all subsequent tables, including in future Progress Reports. However, the Large Electrical Corporation must assign a new PLAN_ID, if an EUP is rejected and needs to be resubmitted.

C.1.2 Key Decision-Making Metrics Table

This section establishes the requirements for a KDMM Table that the Large Electrical Corporation must submit. The Large Electrical Corporation must submit a KDMM Table in Progress Report 0, describing all KDMMs which they will use during application of the EUP.

Table C.2 describes the construction and data requirements for the KDMM Table.

Table C.2. Example KDMM Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
kdmm_name	The name of the KDMM (e.g., Overall Utility Risk, Ignition Consequence, etc.) Name must match those from the KDMM table in Section 2.7.3 of these Guidelines.	NVARCHAR(255)	Limited values
kdmm_number	For the seven required (and up to 5 optional) KDMMs, which number (1,2,3, etc.).	INT	
kdmm_is_cumulative	Indicate whether the KDMM is "Cumulative" or "Non-Cumulative".	BOOLEAN	
kdmm_definition	An explanation of what this KDMM represents.	TEXT	

Additional requirements for a KDMM Table are as follows:

~~a)~~a.　　The Large Electrical Corporation must use KDMM_NAME to map submissions of this table to the JSON data submissions.

~~b)~~b.　　This table is only to be submitted once, at the initial submission of the Plan. This table is not to be resubmitted or edited with future Progress Reports.

~~c)~~c.This table must include the same KDMMs as the EUP narrative and table submission.

~~d)~~d.　　The KDMM_NUMBER is defined by this table, and the project_variable_modifiers and risk_landscape JSON files must use the same KDMM_NUMBERS.

C.1.3 Risk Model Version History Table

This section establishes the requirements for a Risk Model Version History Table accompanying the submission of the PROJECT_VARIABLE_MODIFIERS JSON file with the initial submission of the EUP and all subsequent Progress Reports. Each row of this table is a unique calibration of the Large Electrical Corporation's Risk Modeling Methodology. This table must reflect the most current information as of each Progress Report submission.

Table C.3. describes the construction and data requirements for the Risk Model Version History Table.

Table C.3. Example Risk Model Version History Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
risk_model_version_id	A unique value identifying the risk model versioning.	NVARCHAR(255)	Must match JSON submission
version_date	Date this version was established.	DATETIME	
risk_model_calibration_id	A unique value identifying the calibration number for this risk model version.	NVARCHAR(255)	Must match JSON submission
calibration_date	Date this calibration was established.	DATETIME	

Column Name	Field Description	Data Type	Data Type Requirements
change_description	Text explaining what changes took place compared to the previous version/calibration. If only a calibration update, describe which modules were recalibrated and the topline effects. If a full version update, describe any new models or interactions, and topline outcome effects.	TEXT	

Additional requirements for a Risk Model Version History Table are as follows:

a)a. This table is a historical record table, with rows to be added as new versions are created and calibrated. At least one row must be submitted alongside Progress Report 0, and this table is to be resubmitted with each Progress Report only if new rows are added. The final row of this table is presumed to record the Large Electrical Corporation's most up to date Risk Modeling Methodology.

b)b. A model's CALIBRATION_DATE is the date the model's calibration was finalized internally at the Large Electrical Corporation, not the date of submission of this model in a subsequent Progress Report.

c)c. If multiple updates to the Risk Modeling Methodology are made at different times between Progress Reports, then the Large Electrical Corporation will add multiple new rows to the table.

d)d. Each new row of this table in each Progress Report will be accompanied by a submission of a PROJECT_VARIABLE_MODIFIERS JSON data file, even if this would require multiple new JSON file submissions. The RISK_MODEL_VERSION_ID and RISK_MODEL_CALIBRATION_ID must match those submitted in those files.

C.1.4 Portfolio Table

This section establishes the requirements for a Portfolio Table in Progress Report 0 and in every subsequent Progress Report. This table includes information on the current and previous portfolios and Risk Modeling Methodologies being used by the Large Electrical Corporation.

Table .C.4. describes the construction and data requirements for the Portfolio Table.

Table C.4. Example Portfolio Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
portfolio_id	A unique value identifying the portfolio.	NVARCHAR(255)	Unique
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
project_list	A comma delimited list of all Confirmed Projects in the portfolio, by their project_id.	TEXT	Must match the Project Table
description	A narrative overview of the current Portfolio, including a description of the changes since the last Progress Report.	TEXT	
total_circuit_segments_in_ portfolio	Total number of Circuit Segments in portfolio.	INT	
start_date	Start date of the Plan.	DATETIME	
estimated_completion_dat e	Estimated completion date of final project in portfolio.	DATETIME	
risk_model_version_id	A unique value identifying the risk landscape.	NVARCHAR(255)	Must match version in project_variable_mo difiers.json file
risk_model_calibration_id	A unique model identifying the calibration number of the risk landscape.	NVARCHAR(255)	Must match calibration in project_variable_mo difiers.json file

Additional requirements for a Portfolio Table are as follows:

a)a.   The Portfolio Table is a historical records table, with rows to be added as the Portfolios evolve. This will be submitted with an additional new row of data at each Progress Report.

b)b.   The Large Electrical Corporation must assign the Portfolio a unique integer ID, which is the unique identifier for the list of Confirmed Projects being considered for undergrounding.Undergrounding. When this list of Confirmed Projects changes, so too does the PORTFOLIO_ID. However, changes to the individual details of a project (e.g., changing the cost estimate, undergrounded length, etc.) do not change the list of Confirmed Projects and therefore do not change the PORTFOLIO_ID.

c)c. In Progress Reports, the Large Electrical Corporation must update the Portfolio Table, including RISK_MODEL_VERSION_ID, RISK_MODEL_CALIBRATION_ID, and DESCRIPTION, if there are any modifications to the Risk Modeling Methodology. The version and calibration of the risk model are the current one as of the Progress Report submission, and the distinction between versioning and calibration is as described in Section 2.7.5.2 of the Guidelines.

d)d.   START_DATE refers to the inception date of the Plan, not the start date of individual projects.

e)e.   The Large Electrical Corporation must submit a JSON file for the Portfolio with the risk model and again in any Progress Report with a risk model update. See JSON instructions (Section C.2) for requirements on the risk model JSON file.

C.1.5 Risk Model Backtesting Table

This section establishes the requirements for a Risk Model Backtesting Table. This table is submitted once with the initial submission of the EUP and in all subsequent Progress Reports. Each row of this table is a particular calibration of the Large Electrical Corporation's Risk Modeling Methodology, applied to a particular baselineBaseline and portfolioPortfolio to generate all KDMMs at that baselineBaseline and portfolioPortfolio.

Table C.5 describes the construction and data requirements for the for the Risk Model Backtesting Table.

Table C.5. Example Risk Model Backtesting Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	must Must match Plan Table

Column Name	Field Description	Data Type	Data Type Requirements
risk_model_version_id	A unique value identifying the risk model versioning.	NVARCHAR(255)	Must match Risk Model Version History Table
risk_model_calibration_id	A unique value identifying the calibration number for this risk model version.	NVARCHAR(255)	Must match Risk Model Version History Table
calibration_date	Date this calibration was established.	DATETIME	Must match Risk Model Version History Table
baseline_date	The date representing the ~~baseline~~Baseline used for modeling in this row.	DATETIME	Must match date of initial submission or subsequent Progress Report
portfolio_id	The ~~portfolio~~Portfolio used for modeling in this row.	NVARCHAR(255)	Must match the portfolio_id of the Portfolio which was current as of the baseline_date~~.~~
Then, for each KDMM, the following columns:			
kdmm_#_name	The name of the KDMM.	NVARCHAR(255)	Must match KDMM Table
kdmm_#_value_baseline	The value of this KDMM output from applying the specified risk model to the specified ~~baseline~~Baseline.	REAL	
kdmm_#_uncertainty_baseline	Uncertainty of this KDMM under these modeling conditions.	NVARCHAR(255)	Write numerical effects as string, e.g. • "± 0.4" • "+0.2, -0.1",

Column Name	Field Description	Data Type	Data Type Requirements
			• "± 10%"
kdmm_#_value_portfolio	The value of this KDMM output from applying the specified risk model to the specified ~~portfolio~~Portfolio.	REAL	
kdmm_#_uncertainty_portfolio	Uncertainty of this KDMM under these modeling conditions.	NVARCHAR(255)	Write numerical effects as string, e.g. • "± 0.4" • "+0.2, -0.1", • "± 10%"

Additional requirements for a Risk Model Backtesting Table are as follows:

a. This table is a historical record table, with rows to be added as new versions are created and calibrated. At least one row must be submitted alongside Progress Report 0, applying the initial risk model to the initial ~~baseline~~Baseline and Portfolio.

b. With each Progress Report, a new row is added which applies the *current* risk model to the *current* ~~baseline~~Baseline and Portfolio.

c. Additionally, with each update to the Risk Modeling Methodology (e.g. addition of a new row to the Risk Model Version History Table via either a new model or a new calibration), a row will be added applying the *current* risk model to *all prior* ~~baselines~~Baselines and Portfolios, one row per ~~baseline/portfolio~~Baseline/Portfolio and model.

d. Additionally, with each Progress Report, a new row will be added applying each *prior* risk model to the *current* ~~baseline/portfolio~~Baseline/Portfolio, one row per model.

e. For each KDMM, three additional columns are added. The "#" character in the column names is to be replaced by an integer, e.g. ("kdmm_1_name", "kdmm_2_name", etc.).

f. The KDMMs must be listed in the same order as they appear as rows of the KDMM Table.

C.1.6 Circuit Segment Identification Table

This section establishes the requirements for a Circuit Segment Identification Table, first submitted in Progress Report 0 and submitted again in every subsequent Progress Report. This table must reflect the most current modeling information (see Section 2.4.2.1) as of each

Progress Report submission. As required in Section 2.4.2.1, must be the same list and scores used at that time by the Large Electrical Corporation for risk modeling and decision-making.

Table C.6 describes the construction and data requirements for the Circuit Segment Identification Table.

Table C.6. 6. Example Circuit Segment Identification Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
circuit_segment_id	A unique value identifying the Circuit Segment ID.	NVARCHAR(255)	See introduction to Appendix C
circuit_id	A unique value identifying the circuit.	NVARCHAR(255)	Must match circuit_ids as provided in WMP data submission
qdr_circuit_segment_id	If this Circuit Segment was included in the most recent Quarterly Data Report submission as part of the WMP process, list the name used in that report	NVARCHAR(255)	Must match an entry in the WMP data submission
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match project_id from Project Table if this circuit has passed through Screen 2 and has been assigned a project_id, otherwise leave blank
is_non_eup_project	Whether this Circuit Segment is not part of the EUP, but is already planned for mitigations through mechanisms besides the EUP.	BOOLEAN	Leave blank if is_in_area is False
external_funding	If mitigation of this Circuit Segment is already funded through the General Rate Case or other funding, describe that program here.	TEXT	See below for instructions depending on whether this is an Undergrounding Project, a Non-EUP Project, or neither

Column Name	Field Description	Data Type	Data Type Requirements
planned_mitigation_explanations	If mitigation of this Circuit Segment is currently planned through mechanisms besides the EUP, describe the mitigation type here.	TEXT	Leave blank if is_non_eup_project is False or blank
wmp_utility_initiative_tracking_id	If mitigation of this Circuit Segment is going to take place as part of the Wildfire Mitigation Plan (WMP), list the utility_initiative_tracking_id as defined in the WMP.	NVARCHAR(255)	Leave blank if not applicable
circuit_segment_length	The length of the Circuit Segment, in miles.	REAL	
hftd_tier	Which High Fire-Threat District tier the Circuit Segment falls into. Options: • Tier 3 • Tier 2 • Non-HFTD	NVARCHAR(255)	Limited options
rebuild_area	Whether this Circuit Segment falls within a Wildfire Rebuild Area.	BOOLEAN	
is_in_area	Whether this Circuit Segment falls into the In-Area Circuit Segments List (i.e. either hftd_tier = Tier 3 or Tier 2, or rebuild_area = True).	BOOLEAN	
is_eligible_circuit_segment	Whether this Circuit Segment has passed Screen 1 and is on the Eligible Circuit Segments List.	BOOLEAN	
county	Name of the county that the Circuit Segment falls primarily into.	NVARCHAR(255)	Must be a county name in California

Additional requirements for a Circuit Segment Identification Table are as follows:

a)a._____In the initial submission, the Large Electrical Corporation must provide each
Circuit Segment within its territory as a separate row. This must be a comprehensive

list including all Circuit Segments in the utility territory, even ones which do not qualify for ~~undergrounding~~Undergrounding under the proposed EUP.

b)b.   When this table is submitted in subsequent Progress Reports, the Circuit Segments must remain the same, unless they have been newly created, merged, or split, as described above.

c)   Each Undergrounding Project is associated with only a single Circuit Segment. For example, any proposed ~~undergrounding~~Undergrounding which takes place on e.g., two adjacent Circuit Segments must be considered as two individual Undergrounding Projects. Conversely, all proposed ~~undergrounding~~Undergrounding work on a single Circuit Segment will be considered one Undergrounding Project and share the same PROJECT_ID.

c.   If a Circuit Segment is substantially modified, e.g. by splitting into two Circuit Segments, the change must appear in the Circuit Segment Changelog Table (Appendix C.1.7). The new Circuit Segments must use unique names that have never been submitted before through the Circuit Segment Identification Table.

d)d.   The "EXTERNAL_FUNDING" variable is tracked as follows, depending on whether the Circuit Segment is an Undergrounding Project within the EUP, a Non-EUP Project, or neither. If this Circuit Segment is an Undergrounding Project within the EUP, list the external sources of all funding for Non-Undergrounding Subprojects on this Circuit Segment. If this Circuit Segment is a Non-EUP Project, list the external sources of all funding for mitigation of this Circuit Segment, including for ~~undergrounding~~Undergrounding or other system hardening. If this Circuit Segment is not being considered for mitigations or IS_NON_EUP_PROJECT is blank, leave this field blank.

The Large Electrical Corporation must submit associated spatial data with each Progress Report (Section C.4 below). The CIRCUIT_ID and CIRCUIT_SEGMENT_ID in the Circuit Segment Identification Table must map to the associated IDs in that submission. Additionally, the QDR_CIRCUIT_SEGMENT_ID must map to a Circuit Segment in the spatial data provided in the most recent Wildfire Mitigation Plan Quarterly Data Report.

C.1.7 Circuit Segment Changelog Table

This section establishes the requirements for a Circuit Segment Changelog Table. This table is not submitted with the initial submission of the EUP (Progress Report 0), however it must be submitted with all subsequent Progress Reports. Each row of this table is a change which results in a new Circuit Segment with a new CIRCUIT_SEGMENT_ID.

Table C.7 describes the construction and data requirements for the ~~for the~~ Circuit Segment Changelog Table.

Table C.7. Example Circuit Segment Changelog Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan table
circuit_segment_id	A unique value identifying the new Circuit Segment ID.	NVARCHAR(255)	Unique Circuit Segment ID
circuit_id	A unique value identifying the Circuit.	NVARCHAR(255)	Unique, must match circuit_id provided in most recent QDR spatial submission files
change_type	Identification of how this Circuit Segment has been defined or redefined since the last Progress Report. Possible options: • New Construction • Rename • Split • Merge • Other, see comment	NVARCHAR(255)	Limited Values
change_date	Date this Circuit Segment change was reported (i.e. date of submission of this Progress Report).	DATETIME	
source_circuit_segment_ids	Comma delimited list of all Circuit Segments submitted in the prior Progress Report, which contributed to this new segment. May be a single value if only one prior Circuit Segment connects.	TEXT	Each comma-separated value must be identifiable with a Circuit Segment ID from the prior Progress Report
comment	Explanation of the change if change_type is "other, see comment."	TEXT	Leave blank if change_type is not "other, see comment"

Additional requirements for a Circuit Segment Changelog Table are as follows:

a)a.   This table is a historical record table, with rows to be added as equipment is added or removed that redefines the boundaries of Circuit Segments. With each

Progress Report, a new row is added for each new CIRCUIT_SEGMENT_ID, identifying if this new Circuit Segment is a split, rename, new construction, or has some other relationship with the Circuit Segments submitted in the previous Progress Report. When this table is submitted in subsequent Progress Reports, previous rows must continue to be included as well as any new rows to be added.

b)b.   In all Progress Reports subsequent to Progress Report 0, the CIRCUIT_SEGMENT_ID in each row in the Circuit Segment Identification Table must correspond to either a CIRCUIT_SEGMENT_ID in the prior Progress Report's Circuit Segment Identification Table, or to a CIRCUIT_SEGMENT_ID in this Circuit Segment Changelog Table.

c)c. CIRCUIT_SEGMENT_IDs cannot be reused. If a new Circuit Segment is created and it requires a new ID, this ID must not have been previously submitted at any point in the lifetime of the EUP (e.g. including the date of the Progress Report in which this ID was first submitted within the string name).

d)d.   If a Circuit Segment's CHANGE_TYPE is "New Construction", then the Circuit Segment is created entirely from new assets, and does not overlap with any Circuit Segment present in the previous Progress Report.

e)e.   If a Circuit Segment's CHANGE_TYPE is "Rename", then the Circuit Segment's CIRCUIT_SEGMENT_ID is new, but the assets themselves are identical to a Circuit Segment submitted in the previous Progress Report.

f)f. If a Circuit Segment's CHANGE_TYPE is "Split", then the Circuit Segment's CIRCUIT_SEGMENT_ID is new, but the assets themselves are a subset of a Circuit Segment submitted in the previous Progress Report, e.g. a new segmentation device was added.

g)g.   If a Circuit Segment's CHANGE_TYPE is "Merge", then the Circuit Segment's CIRCUIT_SEGMENT_ID is new, but the assets themselves are a composed from multiple Circuit Segments submitted in the previous Progress Report, e.g. a segmentation device was removed.

h)h.   If a Circuit Segment's CHANGE_TYPE is "Other, see comment", then the Circuit Segment's CIRCUIT_SEGMENT_ID is new, and the relationships to assets submitted in a previous Progress Report is not captured in the other options. In this case, list relevant Circuit Segments from the previous Progress Report as well as explain how this segment was created. The comment should be sufficient as to allow Energy Safety to identify what the relationship is thatbetween this Circuit Segment has to previousand the prior Circuit Segments in the same geographic arealisted under SOURCE_CIRCUIT_SEGMENT_IDS.

i)i. In each of the above sections, small overlaps, small changes to the Circuit Segment such as addition of equipment, upgrades, or small changes in location do not need

to be considered here, only major changes that would make a Circuit Segment impossible to directly track over time.

C.1.8 Circuit Segment Risk Score Table

This section establishes the requirements for a Circuit Segment Risk Score Table. The Large Electrical Corporation must submit a Circuit Segment Risk Score Table for each Circuit Segment in the Circuit Segment Identification Table. This table must reflect the most current information as of each Progress Report submission.

Table C.8 describes the construction and data requirements for the Circuit Segment Risk Score Table.

Table C.8. Example Circuit Segment Risk Score Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
circuit_segment_id	A unique value identifying the Circuit Segment ID.	NVARCHAR(255)	Unique Circuit Segment_id
circuit_id	A unique value identifying the Circuit.	NVARCHAR(255)	Unique, must match Project Table circuit_id and QDR spatial submission circuit_id
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match project_id from Project Table if this circuit passes Screen 2, otherwise leave blank
risk_model_version_id	A unique value identifying the current version of the Risk Model.	NVARCHAR(255)	Must match last row of Risk Model Version History Table
risk_model_calibration_id	A unique value identifying the current calibration of the Risk Model.	NVARCHAR(255)	Must match last row of Risk Model Version History Table

Column Name	Field Description	Data Type	Data Type Requirements
risk_category	Identifying if this Circuit Segment, based on its risk score, would fall into one of the mitigation eligibility categories and if so, how. Possible values are the following: • High Risk • Ignition Tail Risk • High Frequency Outage Program • None	NVARCHAR(255)	String of one of the available options. If a Circuit Segment qualifies under multiple categories, list all categories separated by commas
overall_utility_risk	Utility risk score.	REAL	
ignition_risk	Ignition risk score	REAL	
ignition_consequence	Ignition consequence score.	REAL	
ignition_likelihood	Ignition likelihood	REAL	
outage_program_risk	Outage Program risk score	REAL	
outage_program_consequence	Outage Program consequence score.	REAL	
outage_program_likelihood	Outage Program likelihood.	REAL	
overall_utility_risk_rank_system	Rank of the risk within the system.	INT	
overall_utility_risk_rank_portfolio	Rank of the risk within the portfolio.	INT	Leave blank if not included in the portfolio
ignition_consequence_rank_system	Rank of Ignition Consequence within the system.	INT	
ignition_consequence_rank_portfolio	Rank of Ignition Consequence within the portfolio.	INT	Leave blank if not included in the portfolio

Column Name	Field Description	Data Type	Data Type Requirements
outage_program_likelihood _rank_system	Rank of Outage Program Likelihood within the system.	INT	
outage_program_likelihood _rank_portfolio	Rank of Outage Program Likelihood within the portfolio.	INT	Leave blank if not included in the portfolio

Additional requirements for a Circuit Segment Risk Score Table are as follows:

a)a.   In the initial submission, the Large Electrical Corporation must provide each Circuit Segment within its territory as a separate row. This must be a comprehensive list including all Circuit Segments in the utility territory, even ones which do not qualify for ~~undergrounding~~Undergrounding under the proposed EUP.

b)b.   The Circuit Segments here must match those submitted in the Circuit Segment Identification Table.

c)c.The RISK_CATEGORY variable tracks whether the Circuit Segment's risk scores exceed the Project ~~level thresholds~~Level Thresholds for each of the three categories, regardless of its inclusion in High Fire Threat District or Wildfire Rebuild areas. Therefore, there may be Circuit Segments with a RISK_CATEGORY not equal to "None", but which are still not eligible for consideration in the EUP.

d)d.   With each Progress Report, the values in this table will update if the risk model changes. Use the current risk model outputs at the Circuit Segment level. This does not require Confirmed Projects to pass through screens again, even if the new risk model scores would not pass through the existing screens.

C.1.9 Screen History Table

This section establishes the requirements for a Screen History Table. The Large Electrical Corporation must submit a Screen History Table in Progress Report 0 and in every subsequent Progress Report. This table must reflect the most current information as of each Progress Report submission. Multiple screens may be applied between Progress Reports. The Large Electrical Corporation must submit each applied screen as a new row.

Table C.9 describes the construction and data requirements for the Screen History Table.

Table C.9. Example Screen History Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
circuit_segment_id	A unique value identifying the Circuit Segment ID.	NVARCHAR(255)	Unique Circuit Segment ID
circuit_id	A unique value identifying the Circuit.	NVARCHAR(255)	Unique, must match circuit_id provided QDR spatial submission files
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match Project Table, may be blank if not being used
portfolio_id	A unique value identifying the portfolio.	NVARCHAR(255)	Must match Portfolio Table, may be blank if not being used
is_active	This Undergrounding Project is currently being considered for the next screen, or if confirmed and prioritized, is being developed for construction.	BOOLEAN	
screen_number	A unique value identifying the screen. Enter value between 1 and 4. Every time a screen is applied to the Circuit Segment, update this field and the remaining fields in this table.	INT	

Column Name	Field Description	Data Type	Data Type Requirements
screen_name	Provide the name of the screen. • Screen 1: Circuit Segment Eligibility • Screen 2: Project Information and Alternative Mitigation Comparison • Screen 3: Project Risk Analysis • Screen 4: Project Prioritization and Finalization	NVARCHAR(255)	
passed_date	Date at which this screen was applied.	DATETIME	

Additional requirements for a Screen History Table are as follows:

a)a. In the initial submission, the Large Electrical Corporation must provide a row for each screen applied to each Circuit Segment, e.g., if a particular Circuit Segment has already passed Screen 3, it must have a row for when that segment was passed through each of Screen 1, Screen 2, and Screen 3, with the dates those screens were applied (which may be before submission of the EUP). Consequently, Circuit Segments which have not passed Screen 1 will not be included in this table.

b)b. This table is recorded at the project levelProject-Level, meaning that the Circuit Segment ID used should match the original Circuit Segment the Undergrounding Project was created on, even if that Circuit Segment no longer appears in the Circuit Segment Identification Table.

c)c. In each subsequent Progress Report, additional rows will be added to the table to reflect additional screens that individual Circuit Segments have passed through. Prior rows should not be modified, however the order of rows (append all new updates to end, grouping all updates for a particular project together, etc.) will be left up to the Large Electrical Corporation.

d)d. If an Undergrounding Project is abandoned on a Circuit Segment, that progress must be reflected as new rows on this table with a new PROJECT_ID, without overwriting or removing the progress of the earlier Undergrounding Project.

C.1.10 Project Table

This section establishes the requirements for a Project Table. The Large Electrical Corporation must submit a Project Table which contains information on each

Undergrounding Project as an individual row. Undergrounding Projects must be included in this table once they have passed through Screen 2 (Project Information and Alternative Mitigation Comparison). This table must reflect the most current information as of each Progress Report submission, so any changes to the information in this table for a particular Undergrounding Project will be reflected in future submissions. The Large Electrical Corporation will update and submit the full Project Table with each Progress Report, even if no update was made to an individual Undergrounding Project.

Table C.10 describes the construction and data requirements for the Project Table.

Table C.10. 10. Example Project Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Unique
circuit_segment_id	A unique value identifying the Circuit Segment which was used to define this Undergrounding Project.	NVARCHAR(255)	Unique Circuit Segment ID
circuit_id	A unique value identifying the Circuit.	NVARCHAR(255)	Unique, must match circuit_id provided in QDR spatial submission files
circuit_segment_vintage	The Progress Report in which this Undergrounding Project was defined.	INT	Must be a previous Progress Report number 0, 1, 2, etc.
portfolio_ids	A list of all Portfolios this Undergrounding Project was included in.	STRING	Comma delimited list of strings
is_confirmed_project	True if this Undergrounding Project has passed Screen 3. Else False.	BOOLEAN	

Column Name	Field Description	Data Type	Data Type Requirements
cpuc_project_code	A code that identifies a grouping of Undergrounding Projects associated with a certain activity. Examples include the following: • O8W - System Hardening Wildfire Resiliency Projects • 3UG - Targeted Undergrounding • 95F - Electric Distribution Major Emergency	NVARCHAR(255)	Leave blank if does not apply.
risk_category	The category of the Undergrounding Project. Acceptable values are: • High-Risk Project • Ignition Tail Risk Project • High Frequency Outage Program Project • ~~Wildfire Rebuild~~	NVARCHAR(255)	Limited values
division	Division of the service territory in which the Undergrounding Project will take place.	NVARCHAR(255)	
county	County of location of this Undergrounding Project.	NVARCHAR(255)	Separate with commas if multiple

Column Name	Field Description	Data Type	Data Type Requirements
hftd_tier	A string representing the CPUC High Fire-Threat District (HFTD) area. Below are the integer values with the associated meaning. Acceptable values are the following: • HFTD Tier 2 • HFTD Tier 3 • Non-HFTD	NVARCHAR(32)	Limited values
rebuild_area	A categorical value signifying whether an Undergrounding Project is in a Wildfire Rebuild Area or not. Below are the possible values: • Not in Wildfire Rebuild Area • In a Wildfire Rebuild Area	BOOLEAN	
customer_count	Number of customers served by this Circuit Segment, as defined by CPUC Data Appendix 1.	INT	
feasibility_score	Cost multiplier indicating the difficulty of undergrounding based on presence of hard rock, water crossing, and gradient. The scale ranges from 1 to 3, with 3 being most challenging.	INT	Limited values
risk_model_version_id	A unique value identifying the risk model version under which this	NVARCHAR(255)	Must match an entry in the Risk Model Version History Table

Column Name	Field Description	Data Type	Data Type Requirements
	Undergrounding Project was selected.		
risk_model_calibration_id	A unique value identifying the risk model calibration under which this Undergrounding Project was selected.	NVARCHAR(255)	Must match an entry in the Risk Model Version History Table
selection_justification	For every Undergrounding Project, a justification using the KDMMs of why it was selected.	TEXT	
project_priority	Prioritization level of the Undergrounding Project, according to the prioritization scheme defined in the EUP.	TEXT	Blank if the Undergrounding Project has not passed Screen 4
wmp_overlap_current	Is this Circuit Segment included in a current WMP initiative?	BOOLEAN	
wmp_overlap_historical	Is this Circuit Segment included in a WMP historical initiative?	BOOLEAN	
wmp_utility_initiative_tracking_id	Provide any associated utility initiative tracking ID.	NVARCHAR(255)	Leave blank if wmp_overlap_current and wmp_overlap_historical are False
risk_tranche	CPUC defined "risk tranche". Tranches include a group of assets, a geographic region, or other grouping that is intended to have a similar risk profile, such	NVARCHAR(255)	

Column Name	Field Description	Data Type	Data Type Requirements
	as having the same likelihood or consequence of risk events.		
list_of_subprojects	The list of all Subprojects associated with this Undergrounding Project.	TEXT	Comma-delimited list. Leave blank if Subprojects have not yet been scoped.
project_complete	Is this Undergrounding Project finished?	BOOLEAN	
project_defunct	Is this Undergrounding Project not complete, but no longer intended for construction?	BOOLEAN	

Additional requirements for a Project Table are as follows:

a)a.   PROJECT_IDs are defined by this table and must remain consistent over time and not be altered during updates. An Undergrounding Project must be added to this table when it has passed through Screen 2. An Undergrounding Project is identified with a Circuit Segment when it is added to this table. If the Circuit Segment changes after this point, the Undergrounding Project remains identified with the original Circuit Segment, even if it no longer appears in the Circuit Segment Identification Table.

b)b.   Undergrounding Projects cannot be defined as overlapping. If an Undergrounding Project is defined on a Circuit Segment which already has some overlap with existing Undergrounding Projects, the overlapping sections must be removed in all analysis.

c)c.In each Progress Report, any newly proposed Undergrounding Projects must be included with new PROJECT_IDs. All previously included Undergrounding Projects must still be included, however the order of rows (append, move defunct projects to end, grouping by prioritization, etc.) will be left up to the Large Electrical Corporation.

d)d.   Each Undergrounding Project's PORTFOLIO_IDS table will include the PORTFOLIO_ID of all Portfolios whose Project List includes this project. For example, if an Undergrounding Project is included in Portfolio 0, then PORTFOLIO_IDS will be "0". If that same project is included again in Portfolio 1,

then PORTFOLIO_IDS will be "0,1". If an Undergrounding Project has passed Screen 2 but has not yet passed Screen 3, then it will not yet be included in any Portfolio. In this case, this field is to be left blank. If, on the other hand an Undergrounding Project is removed from the Portfolio because it is finished, it is abandoned, or it is dropped from the list for some other reason, it will still be submitted in this table with information on the ~~portfolios~~Portfolios it was included in.

c)e.   The RISK_MODEL_VERSION_ID and RISK_MODEL_CALIBRATION_ID refer to the version and calibration under current use when this Undergrounding Project was originally selected for ~~undergrounding~~Undergrounding and passed Screen 2. If the version or calibration changes in future Progress Reports, this field is not to be updated for existing Undergrounding Projects.

C.1.11 Screen 2 Table

This section establishes the requirements for a Screen 2 Table that the Large Electrical Corporation must submit for each Undergrounding Project which has passed Screen 2. The Large Electrical Corporation must submit a Screen 2 Table at the initial EUP submission and with each Progress Report. This table must reflect the most current information as of each Progress Report submission.

Table C.11 describes the construction and data requirements for the Screen 2 Table.

Table C.11. Example Screen 2 Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match Project Table
comparison_name	The name of the comparison considered. Options include: • 100% Underground • Alternative Mitigation 1 • Alternative Mitigation 2 • Additional Comparison	NVARCHAR(255)	Limited values, though additional alternatives may also be included if described in the EUP

Column Name	Field Description	Data Type	Data Type Requirements
portfolio_id	A unique value identifying the ~~portfolio~~Portfolio.	NVARCHAR(255)	Must match Portfolio Table, or blank if this Undergrounding Project has not yet passed Screen 3~~.~~
circuit_segment_id	A unique value identifying the Circuit Segment ID on which this Undergrounding Project was defined.	NVARCHAR(255)	Must match Project Table
circuit_id	A unique value identifying the Circuit on which this Undergrounding Project was defined.	NVARCHAR(255)	Must match Project Table
work_type	Work to be performed on Circuit Segment or "multiple".	NVARCHAR(255)	Limited values
work_type_description	Description of the type of mitigation. If work type is "multiple", list all of the mitigations or combination of mitigations that will be applied throughout the Circuit Segment.	TEXT	
fraction_undergrounded	Fraction of Circuit Segment's original unmitigated overhead that will be removed and replaced with undergrounded line.	REAL	Value between 0 and 1
reliability_benefits	Reliability Benefits of the mitigation per D.22-12-027.	REAL	Dollarized Value
financial_benefits	Financial Benefits of the mitigation per D.22-12-027.	REAL	Dollarized Value
safety_benefits	Safety Benefits of the mitigation D.22-12-027.	REAL	Dollarized Value
total_risk_reduction	Risk Reduction of the mitigation per D.22-12-027.	REAL	Dollarized Value
unit_cost_per_overhead_mile_deenergized	Project Unit Cost per Mile of Overhead Exposure. Leave blank for alternative mitigations, fill in for "100% Undergrounding".	REAL	Dollarized Value

Column Name	Field Description	Data Type	Data Type Requirements
unit_cost_per_circuit_mile_energized	Project Unit Cost per Mile of Undergrounding for Undergrounding Project or Project Unit Cost per Circuit Mile for Alternative Mitigation.	REAL	Dollarized Value
total_costs	Total mitigation cost.	REAL	Dollarized Value
cost_benefit_ratio	Cost-Benefit Ratio of the Undergrounding Project per D.22-12-027. Benefits must relate to the mitigation of overhead line miles not miles of undergrounding.	REAL	

Additional requirements for a Screen 2 Table are as follows:

a. Each row of this table is a Circuit Segment considered for inclusion in the EUP as an Undergrounding Project, or an alternative project comparison. The required alternative comparisons are explained further in Section 2.7.10.

b. The WORK_TYPE field must correspond to one of the required comparisons in Section 2.7.10 and match one of the alternatives described in Chapter 3 of the EUP narrative for project acceptance framework of the approved EUP. List "multiple" if multiple mitigations are being considered on different parts of the Circuit Segment.

c. All Undergrounding Projects in the Project Table must appear here.

d. This table must be updated, and the values recalculated, if the CPUC definitions of any of the above terms are changed or updates to the Risk Model Version change their values.

C.1.12   Screen 3 Table

This section establishes the requirements for a Screen 3 Table that the Large Electrical Corporation must submit for each Undergrounding Project which has passed Screen 3. The Large Electrical Corporation must submit a Screen 3 Table at the initial submission and with each Progress Report. This table must reflect the most current information as of each Progress Report submission.

Table C.12 describes the construction and data requirements for the Screen 3 Table.

Table C.12..12. Example Screen 3 Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match Project Table
comparison_name	The name of the comparison considered. Options include: • Project as scoped • Screen 3 Alternative Mitigation • Undergrounding as scoped • Project Baseline • Additional Comparison	NVARCHAR(255)	Limited values, though additional alternatives may also be included if described in the EUP.
alternative_mitigation_justification	A narrative detailing how and why the alternative mitigationAlternative Mitigation was chosen.	TEXT	Leave blank if comparison_name is "Project as scoped", "Undergrounding as scoped", or "Project Baseline"
portfolio_id	A unique value identifying the portfolioPortfolio.	NVARCHAR(255)	Must match current Portfolio Table
circuit_segment_id	A unique value identifying the Circuit Segment ID on which the Undergrounding Project was defined.	NVARCHAR(255)	Must match Project Table
circuit_id	A unique value identifying the Circuit on which the Undergrounding Project was defined.	NVARCHAR(255)	Must match Project Table
work_type	Work to be performed on Circuit Segment or "multiple".	NVARCHAR(255)	Limited values
work_type_description	Description of the type of mitigation. If work type is "multiple", list all of the mitigations or combination of mitigations that will be applied throughout the Circuit Segment.	TEXT	

Column Name	Field Description	Data Type	Data Type Requirements
fraction_undergrounded	Fraction of Circuit Segment's original unmitigated overhead that will be removed and replaced with undergrounded line.	REAL	Value between 0 and 1
fulfills_project_level_standard	Does the proposed mitigation fulfill the Project-Level Standard?	BOOLEAN	
additional_justification	Additional narrative required to justify this Undergrounding Project's inclusion if it does not fulfill the Project-Level Standard.	TEXT	Left blank if "fulfills_project_level_standard" is True or comparison_name is not "Project as Scoped"
cumulative_overall_utility_risk_in_year_55	The cumulative Overall Utility Risk experienced at this location, accounting for the proposed construction timeline for ~~undergrounding~~Undergrounding and a realistic timeline for ~~alternative mitigations~~Alternative Mitigations.	REAL	
cumulative_wildfire_risk_in_year_55	The cumulative Ignition Risk experienced at this location, accounting for the proposed construction timeline for ~~undergrounding~~Undergrounding and a realistic timeline for ~~alternative mitigations~~Alternative Mitigations.	REAL	
cumulative_outage_program_risk_in_year_55	The cumulative Outage Program Risk experienced at this location, accounting for the proposed construction timeline for ~~undergrounding~~Undergrounding and a realistic timeline for ~~alternative mitigations~~Alternative Mitigations.	REAL	
mean_ignition_consequence_in_first_10_years_of_program	The mean Ignition Consequence score at this location, evaluated over the first 10 years of the program, accounting for the proposed construction timeline for ~~undergrounding~~Undergrounding and a realistic timeline for ~~alternative mitigations~~Alternative Mitigations.	REAL	

Column Name	Field Description	Data Type	Data Type Requirements
mean_outage_program_likelihood_in_first_10_years_of_program	The mean Outage Program Likelihood at this location, evaluated over the first 10 years of the program, accounting for the proposed construction timeline for ~~undergrounding~~Undergrounding and a realistic timeline for ~~alternative mitigations~~Alternative Mitigations.	REAL	

Additional requirements for a Screen 3 Table are as follows:

a. ~~a)~~ Each row of this table is a considered Undergrounding Project, or an alternative project comparison. The required alternative comparisons are explained further in Section 2.7.10.

b. ~~b)~~ The WORK_TYPE field must correspond to one of the required comparisons in Section 2.7.10 and match one of the alternatives described in the Chapter 3 narrative for project acceptance framework of the approved EUP. List "multiple" if multiple mitigations are being considered on different parts of the Circuit Segment.

c. ~~c)~~ The ALTERNATIVE_MITIGATION_JUSTIFICATION field must provide a narrative detailing how the ~~alternative mitigation~~Alternative Mitigation was chosen, and why it is the best alternative to the Project as Scoped. As supporting evidence, this narrative can use data from Screen 2, and other project specific scoping details determined in Screen 3.

d. ~~d)~~ Undergrounding Projects are considered to have passed Screen 3 when all the information in this table has been calculated. Therefore, there may be Undergrounding Projects which do not appear in this table but which appeared in the Project Table.

e. ~~e)~~ This table must be updated and the values recalculated if updates to the Risk Model Version change their values.

f. ~~f)~~ If Subprojects are modified after an Undergrounding Project passes Screen 3, the Screen 3 "Scoped Project" values must be modified to reflect the current status, until the project is completed and it is updated to reflect as-built status.

g. ~~g)~~ This table must agree with the PROJECT_RISK_LANDSCAPES JSON file submission, which includes this information among other KDMMs. Each row in this table must be accompanied by an entry in the JSON file and vice versa.

C.1.13 Screen 4 Table

This section establishes the requirements for a Screen 4 Table that the Large Electrical Corporation must submit for each Undergrounding Project which has passed Screen 4. The

Large Electrical Corporation must submit a Screen 4 Table at the initial EUP submission and with each Progress Report. This table must reflect the most current information as of each Progress Report submission.

Table C.13 describes the construction and data requirements for the Screen 4 Table.

Table C.13..13. Example Screen 4 Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match Project Table
comparison_name	The name of the comparison considered. Options include: • Project as scoped • Undergrounding as scoped • Screen 3 Alternative MitigationsMitigation	NVARCHAR(255)	Limited values
project_priority	Prioritization level of the Undergrounding Project, according to the prioritization scheme defined in the EUP.	TEXT	Must match Project Table. Leave blank if "comparison_name" is not equal to "Project as Scoped"
portfolio_id	A unique value identifying the portfolioPortfolio.	NVARCHAR(255)	Must match Portfolio Table
circuit_segment_id	A unique value identifying the Circuit Segment ID on which this Undergrounding Project was defined.	NVARCHAR(255)	Must match Project Table
circuit_id	A unique value identifying the Circuit on which this Undergrounding Project was defined.	NVARCHAR(255)	Must match Project Table
work_type	Work to be performed on Circuit Segment or "multiple".	NVARCHAR(255)	Limited values

Column Name	Field Description	Data Type	Data Type Requirements
work_type_description	Description of the type of mitigation. If work type is "multiple", list all of the mitigations or combination of mitigations that will be applied throughout the Circuit Segment.	TEXT	
fraction_undergrounded	Fraction of Circuit Segment's original unmitigated overhead that will be removed and replaced with undergrounded line.	REAL	Value between 0 and 1
reliability_benefits	Reliability Benefits of the mitigation per D.22-12-027.	REAL	Dollarized Value
financial_benefits	Financial Benefits of the mitigation per D.22-12-027.	REAL	Dollarized Value
safety_benefits	Safety Benefits of the mitigation D.22-12-027.	REAL	Dollarized Value
total_risk_reduction	Risk Reduction of the mitigation per D.22-12-027.	REAL	Dollarized Value
unit_cost_per_overhead_mile_deenergized	Project Unit Cost per Mile of Overhead Exposure. Leave blank for non-Undergrounding Projects.	REAL	Dollarized Value
unit_cost_per_circuit_mile_energized	Project Unit Cost per Mile of Undergrounding for Undergrounding Project or Project Unit Cost per Circuit Mile for Alternative Mitigation.	REAL	Dollarized Value
total_costs	Total mitigation cost.	REAL	Dollarized Value
cost_benefit_ratio	Cost-Benefit Ratio of the Undergrounding Project per D.22-12-027. Benefits must relate to the mitigation of overhead line miles not miles of undergrounding.	REAL	

Additional requirements for a Screen 4 Table are as follows:

a) Each row of this table is a Confirmed Project, repeated three times – once for the full project as scoped, once for just the scoped ~~undergrounding~~Undergrounding, and once to track the finalized alternative mitigation created for Screen 3.

b) The WORK_TYPE field must correspond to one of the required comparisons in Section 2.7.10 and match one of the alternatives described in Chapter 3 of the EUP narrative

for project acceptance framework of the approved EUP. List "multiple" if multiple mitigations are being considered on different parts of the Circuit Segment.

This table must be updated, and the values recalculated, if the CPUC definitions of any of the above terms are changed or updates to the Risk Model Version change their values, or if the scoped project changes such that it receives new alignment IDs.

C.1.14 Subproject Table

This section establishes the requirements for a Subproject Table.

This table is submitted at the initial EUP submission and with each Progress Report. Each row of this table is a Subproject, and this table includes all Subprojects, for each Undergrounding Project which has passed Screen 4.

Table C.14 describes the construction and data requirements for the Subproject Table.

Table C.~~14..~~14. Example Subproject Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
subproject_id	A unique value identifying the Subproject.	NVARCHAR(255)	New Subproject ID. Must retain the same Subproject ID over time. New Subprojects must receive new Subproject IDs which have not been used for any previously submitted Subproject.
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match Project Table
mitigation_type	The type of mitigation applied to this Subproject (e.g. ~~undergrounding~~Undergrounding, covered conductor, etc.).	NVARCHAR(255)	Must match one of the mitigation types described in the project_variable_modifiers JSON.
subproject_justification	A narrative describing why this Subproject was chosen.	TEXT	

Column Name	Field Description	Data Type	Data Type Requirements
circuit_segment_id	A unique value identifying the Circuit Segment ID on which the Undergrounding Project was defined.	NVARCHAR(255)	Unique Circuit Segment ID
circuit_id	A unique value identifying the Circuit on which the Undergrounding Project was defined.	NVARCHAR(255)	Unique, must match circuit_id provided QDR spatial submission files
wmp_subproject	Is there a ~~wildfire mitigation plan~~Wildfire Mitigation Plan (WMP) initiative associated with this Subproject?	BOOLEAN	
wmp_utility_initiative_tracking_id	Utility initiative tracking ID (if applicable).	NVARCHAR(255)	Unique, leave blank if wmp_subproject is False
wmp_cycle	If the Subproject is associated with a past, current, or future WMP submission, please provide the applicable WMP date ranges. Possible values include the following: • 2019 • 2020-2022 • 2023-2025 • 2026-2028 • 2029-2031 • 2031-2033	NVARCHAR(255)	Limited values, leave blank if wmp_subproject is False
order_number	CPUC order number.~~NVARCHAR(255)~~	NVARCHAR(255) ~~Must match CPUC Guidelines for SB 844 Program Appendix 1~~	Must match CPUC Guidelines for SB 844 Program Appendix 1~~CPUC order number.~~

Column Name	Field Description	Data Type	Data Type Requirements
project_risk_reduction_fraction	The fraction of this Undergrounding Project's Overall Utility Risk Score that will be removed by completion of this Subproject.	REAL	Real number between 0 and 1
circuit_risk_reduction_fraction	The fraction of the Circuit's Overall Utility Risk Score that will be removed by completion of this Subproject.	REAL	Real number between 0 and 1
expected_completion_date	The date this Subproject is estimated to be completed, with both the new alignment energized and the old alignment ~~de-energized~~deenergized.	DATETIME	
is_active	This Subproject is currently being considered or worked on for the next status phase.	BOOLEAN	
is_abandoned	Is the Subproject abandoned?	BOOLEAN	
pre_mitigation_alignment_id	Map to geo-spatial submission.	NVARCHAR(255)	
post_mitigation_alignment_id	Map to geo-spatial submission.	NVARCHAR(255)	
pre_mitigation_length	Length of pre-mitigation overhead line in miles.	REAL	
post_mitigation_length	Length of post-mitigation (overhead or underground) line in miles.	REAL	
new_right_of_way	Whether the Large Electrical Corporation requires a new right-of-way or easement to perform this Subproject.	BOOLEAN	

Column Name	Field Description	Data Type	Data Type Requirements
new_right_of_way_timeline	Expected date to acquire this right-of-way for this Subproject.	DATETIME	Leave blank if new_right_of_way is False
status_current	Current Subproject status. Possible options are given by the "Project Planning and Construction Phases" as defined in Appendix A. Acceptable values are the following: • Scoping • Designing • Permitting • Ready for Construction • Construction In Progress • Construction Completed • Overhead ~~De-energized~~Deenergized	NVARCHAR(255)	Limited values
status_change_date	The date the Subproject was moved to its current status.	DATETIME	

Additional requirements for a Subproject Table are as follows:

~~a)~~a._____With this data submission, there is an associated spatial data submission. The SUBPROJECT_IDs for the C.4.3 - C.4.6 GIS data submissions must match the values presented here. The alignment IDs also must match the current spatial data, though this alignment may be modified between Progress Reports.

~~b)~~b._____The Large Electrical Corporation must give the Subproject a unique ID under the SUBPROJECT_ID field. This ID must remain consistent with all future submissions.

~~c)~~c.This table lists all proposed Subprojects, including active, abandoned, and completed Subprojects.

~~d)~~d._____The "PROJECT_RISK_REDUCTION" field must show the reduction of risk from this Subproject within the Confirmed Project, meaning any segments outside of the Confirmed Project Polygon are not counted.

~~e)~~e._____The Large Electrical Corporation must provide a brief narrative that explains why each Subproject was chosen in the SUBPROJECT_JUSTIFICATION field. The

narrative must include, as applicable, Subproject specific details on why any ~~alternative mitigation~~Alternative Mitigation was chosen over ~~undergrounding~~Undergrounding, an explanation for any construction timeline variance from the rest of the Undergrounding Project, and a description of any other unique constraints that defined the Subproject. In particular, if any part of the Subproject does not fall within the Confirmed Project Polygon, an explanation is required to justify this Subproject's addition to this project.

C.1.15 Project Index Table

This section establishes the requirements for a Project Index Table that the Large Electrical Corporation must submit for each Undergrounding Project which has passed Screen 2 and update as the Undergrounding Projects pass through Screens 3 and 4. This table includes information found in the Screen 2, Screen 3, and Screen 4 Tables and reported data must be compatible with the information submitted elsewhere in the data submission. This table must reflect the most current information as of each Progress Report submission.

Table C.15 describes the construction and data requirements for the Project Index Table.

Table C.~~15.~~.15. Example Project Index Table Construction and Data Requirements

Column Name	Field Description	Data Type	Data Type Requirements
plan_id	A unique value identifying the plan.	NVARCHAR(255)	Must match Plan Table
project_id	A unique value identifying the Undergrounding Project.	NVARCHAR(255)	Must match Project Table
portfolio_id	A unique value identifying the ~~portfolio~~Portfolio.	NVARCHAR(255)	Must match current Portfolio Table
circuit_segment_id	A unique value identifying the Circuit Segment ID.	NVARCHAR(255)	~~must~~ Must match Project Table
circuit_id	A unique value identifying the Circuit.	NVARCHAR(255)	~~must~~ Must match Project Table

Column Name	Field Description	Data Type	Data Type Requirements
county	County of location of this Undergrounding Project.	TEXT	Separate with commas if multiple
project_category	The category of the Undergrounding Project. Acceptable values are: • High-Risk Project • Ignition Tail Risk Project • ~~High Frequency Outage Program Project~~ • ~~Wildfire Rebuild~~	NVARCHAR(255)	Limited values
is_confirmed_project	Whether this Undergrounding Project has passed Screen 3 as of this submission.	BOOLEAN	
is_prioritized_project	Whether this Undergrounding Project has passed Screen 4 as of this submission.	BOOLEAN	
project_priority	Prioritization level of the Undergrounding Project, according to the prioritization scheme defined in the EUP.	TEXT	Blank if the Undergrounding Project has not passed Screen 4
hftd_tier	A value representing the CPUC High Fire-Threat District (HFTD) area. Below are the integer values with the associated meaning.	NVARCHAR(32)	limited values

Column Name	Field Description	Data Type	Data Type Requirements
	Acceptable values are the following: • HFTD Tier 2 • HFTD Tier 3 • Non-HFTD		
circuit_segment_length	Length of the full Circuit Segment on which this project was defined, in miles.	REAL	
The following columns are compilations of PUC metrics for the performance of the planned project from Screen 2 (assuming 100% undergrounded), and from Screen 4 (final values for the project as scoped).			
100_percent_UG_total_costs	Total Undergrounding Project Cost for initial Screen 2 estimate.	REAL	Dollarized Value
100_percent_UG_total_risk_r eduction	Risk Reduction of the mitigation per D.22-12-027.	REAL	Dollarized Value
100_percent_UG_cost_benefi t_ratio	Cost-Benefit Ratio of the Undergrounding Project per D.22-12-027. Benefits must relate to the mitigation of overhead line miles not miles of ~~undergrounding~~Under grounding for initial Screen 2 estimate.	REAL	
project_as_scoped_percent_ UG	Percent of Circuit Segment's original unmitigated overhead line that will be removed and replaced with undergrounded line, according to scoped Screen 3 estimate.	REAL	Leave blank if project has not yet passed Screen 3

Column Name	Field Description	Data Type	Data Type Requirements
project_as_scoped_total_costs	Total Undergrounding Project Cost for initial Screen 2 estimate.	REAL	Dollarized Value, Leave blank if project has not yet passed Screen 4
project_as_scoped_total_risk_reduction	Risk Reduction of the mitigation per D.22-12-027.	REAL	Dollarized Value, Leave blank if project has not yet passed Screen 4
project_as_scoped_cost_benefit_ratio	Cost-Benefit Ratio of the Undergrounding Project per D.22-12-027. Benefits must relate to the mitigation of overhead line miles not miles of ~~undergrounding~~Undergrounding for initial Screen 2 estimate.	REAL	Leave blank if project has not yet passed Screen 4
The following columns are compilations of metrics for the performance of the alternatives considered in Screen 2 (assuming 100% ~~undergrounded~~Undergrounded), and in Screen 4 (for the alternative developed in Screen 3). The following columns are repeated three times, with <alt> replaced by 'screen_2_alt_1', 'screen_2_alt_2','screen_3_alt', The 'screen_3_alt' columns are to be left blank until the project has passed Screen 4.			
<alt>_work_type_description	Description of the type of mitigation considered for this alternative.	TEXT	
<alt>_total_costs	Total Alternative Project Cost for initial Screen 2 estimate.	REAL	Dollarized Value
<alt>_total_risk_reduction	Risk Reduction of the mitigation per D.22-12-027.	REAL	Dollarized Value
<alt> _cost_benefit_ratio	Cost-Benefit Ratio of the Undergrounding Project per D.22-12-027. Benefits must relate to the mitigation of overhead line miles not miles of	REAL	

Column Name	Field Description	Data Type	Data Type Requirements
	undergrounding Undergrounding for initial Screen 2 estimate.		
The following columns are compilations of information on the project as scoped and the primary alternative considered, as reported in Screen 3.			
baseline_cumulative_risk	Risk which would accumulate on this circuit over 55 years assuming no project done.	REAL	Leave blank if project has not yet passed Screen 3
project_as_scoped_cumulative_risk	Risk which would accumulate on this circuit over 55 years assuming project is done as scoped.	REAL	Leave blank if project has not yet passed Screen 3
screen_3_alt_cumulative_risk	Risk which would accumulate on this circuit over 55 years assuming the "Screen 3 alternative" is carried out as scoped.	REAL	Leave blank if project has not yet passed Screen 3

Additional requirements for the Project Index Table are as follows:

a) a.   The rows of this table are every Undergrounding Project which has passed Screen 2.

b) b.   This table must be updated and the values recalculated if the CPUC definitions of any of the above terms are changed or updates to the Risk Model Version would change their values.

C.2   Description of JSON Data Submissions

This section establishes the requirements for JSON Data Submissions. As part of Progress Report 0 and with each Progress Report, the Large Electrical Corporation must submit two required JSON files. The format is described in the section below and a sample is provided in Energy Safety's template files, which are available on Energy Safety's website.

C.2.1 Project Variable Modifiers JSON

The first JSON file is for the Portfolio Table and must include all estimates pertaining to ~~undergrounding~~Undergrounding and other mitigation efforts. The required format for this JSON file is as follows:

At the top level, the JSON structure comprises the PLAN_ID, RISK_MODEL_VERSION_ID, RISK_MODEL_CALIBRATION_ID, and the file submission date, alongside each type of mitigation considered, including ~~undergrounding~~Undergrounding and all alternatives outlined in Section 2.8.5.2. The main body of each JSON object in this file must be nested as follows, with top-level key "Mitigation Types".

- For each mitigation type:

    At the second level, the Large Electrical Corporation must separate the two variable classifications: "Model Input Variables" and "Model Output Variables."

- For each classification:

    At the third level, the Large Electrical Corporation must incorporate the sub-models earmarked for modification, such as the Ignition Likelihood Model or equipment model, as specified by the Large Electrical Corporation. Regarding outputs, the Large Electrical Corporation must use the single key "Model Output."

- For each ~~submodel~~sub-model:

    The fourth level consists of the unique SUBMODEL_ID of the model, and the key "Variables." For "Model Output," the SUBMODEL_ID remains "null." The value for the key "Variables" must be each variable affected by the mitigation procedure. On the input side, the Large Electrical Corporation must provide only the inputs influenced by this mitigation, not the entire list of all inputs to the ~~submodel~~sub-model. On the output side, the variables must be the full list of KDMMs, even if they are not affected by this mitigation.

- For each variable:

    The fifth level must include, for input variables, the keys "Type of Change" and "Explanation," containing strings representing a quantitative change and a qualitative explanation, respectively. These explanations must be detailed enough for reviewers without access to the full modeling procedure to understand. For output variables, the only required key is "Type of Change". If no change occurs, these values must be "null." Additionally, output variables may include uncertainties indicated by a "+/-" character or another measurement of uncertainty.

Figure C.1 shows an example JSON file for Project Variable Modifiers and includes comments on the individual elements to be submitted for illustrative purposes. The Large Electrical Corporation must omit the comments in its submission.

Figure C.1. Commented Example JSON file for Project Variable Modifiers

```json
1  {
2    "comment_1": "*** NOTE: this sample JSON file is being
3                  submitted with comments submitted as text
4                  for clarity. Comments are to be omitted
5                  in the final submission. ***",
6    "plan_id": "TestUtilityPlan1",
7    "comment_2": "*** The plan_id must match the value in the
8                  Plan table (Table 1). ***",
9    "KDMMs": "KDMM1,KDMM2,KDMM3",
10   "comment_3": "*** Comma-separated list of KDMMs by
11                 number. This list of KDMMs be the same length
12                 as the list of KDMMs submitted in the
13                 KDMM table (Table 2) and the EUP
14                 submission. ***",
15   "KDMM_names": "Overall Utility Risk,Ignition Consequence,Outage Program Likelihood",
16   "comment_4": "*** Comma-separated list of KDMMs by name.
17                 This list of KDMMs must exactly match
18                 the list of KDMMs submitted in the KDMM
19                 table (Table 2) and the EUP submission. ***",
20   "risk_model_version_ID": "v0.0",
21   "risk_model_calibration_ID": "c0",
22   "comment_5": "*** This version and calibration ID must
23                 match the current (last) row of the Risk
24                 Model Versions Table (Table 3). ***",
25   "Mitigation Types": {
26     "comment_6": "*** In this dictionary, all mitigation
27                   types are listed, using their names as keys. ***",
28     "Undergrounding": {
29       "comment_7": "*** In this dictionary, there are two
30                     classifications for variables, \"Model Input
31                     Variables\" and \"Model Output Variables\". ***",
32       "Model Input Variables": {
33         "comment_8": "*** In this dictionary, we list all the
34                       sub-models which are affected by doing this
35                       mitigation. ***",
36         "Equipment Model": {
37           "comment_9": "*** In this dictionary, the submodel_id is
38                         listed (if the submodel is not \"Model
39                         Output\"), and there is a single key
40                         \"Variables\". ***",
41           "Submodel_id": 29303952,
42           "Variables": {
43             "comment_10": "*** In this dictionary, all relevant
44                           variables are listed. For the input variables,
45                           this is only whatever variables are
46                           actually affected by this mitigation. On
47                           the output variables, all KDMMs must be
48                           listed. ***",
49             "Self-Combustion Likelihood": {
50               "Type of Change": "-94 +/- 3%",
51               "Explanation": "It affects the model at a hyperparameter level."
52             }
53           }
54         },
55         "Ignition Likelihood Model": {
56           "Submodel_id": 29939992,
57           "Variables": {
58             "Contact From Vegetation": {
59               "Type of Change": "-96%",
60               "Explanation": "It affects the model at a hyperparameter level."
61             },
62             "Contact From Object": {
63               "Type of Change": "-94%",
64               "Explanation": "It affects the model at a hyperparameter level."
```

```
 65 ············}
 66 ··········}
 67 ········}
 68 ······},
 69 ······"Model·Output·Variables":·{
 70 ········"comment_13":·"***·In·this·dictionary,·we·have·a·single·
 71 ··············key·\"Model·Output\"·which·should·be·
 72 ··············affected·by·doing·this·mitigation.·***",
 73 ········"Model·Output":·{
 74 ··········"Submodel_id":·null,
 75 ··········"Variables":·{
 76 ············"Overall·Utility·Risk":·{
 77 ··············"Type·of·Change":·"-90%·+/-·5%"
 78 ············},
 79 ············"Ignition·Consequence":·{
 80 ··············"Type·of·Change":·null
 81 ············},
 82 ············"Outage·Program·Likelihood":·{
 83 ··············"Type·of·Change":·"-40%·+/-·5%"
 84 ············}
 85 ··········}
 86 ········}
 87 ······}
 88 ····},
 89 ····"Covered·Conductor·+·Fast·Trip":·{
 90 ······"Model·Input·Variables":·{
 91 ········"Ignition·Likelihood·Model":·{
 92 ··········"Submodel_id":·19329332,
 93 ··········"Variables":·{
 94 ············"Contact·From·Vegetation":·{
 95 ··············"Type·of·Change":·"-70%",
 96 ··············"Explanation":·"It·affects·the·model·at·a·hyperparameter·level.
 97 ············}
 98 ··········}
 99 ········}
100 ······},
101 ······"Model·Output·Variables":·{
102 ········"Model·Output":·{
103 ··········"Submodel_id":·null,
104 ··········"Variables":·{
105 ············"Overall·Utility·Risk":·{
106 ··············"Type·of·Change":·"-60%·+/-·5%"
107 ············},
108 ············"Ignition·Consequence":·{
109 ··············"Type·of·Change":·null
110 ············},
111 ············"Outage·Program·Likelihood":·{
112 ··············"Type·of·Change":·"-20%·+/-·5%"
113 ············}
114 ··········}
115 ········}
116 ······}
117 ····},
118 ····"Vegetation·Anihillation":·{
119 ······"Model·Input·Variables":·{
120 ········"Vegetation·Growth·Model":·{
121 ··········"Submodel_id":·19329335,
122 ··········"Variables":·{
123 ············"Vegetation·Zone":·{
124 ··············"Type·of·Change":·"-1",
125 ··············"Explanation":·"This·PVM·changes·the·classification·of·the·
126 ················growth·zone.·It·affects·the·model·at·a·hyperparameter·level."
127 ············}
128 ··········}
```

```
129 ········}
130 ······},
131 ······"Model·Output·Variables":·{
132 ········"Model·Output":·{
133 ··········"Submodel_id":·null,
134 ··········"Variables":·{
135 ············"Overall·Utility·Risk":·{
136 ··············"Type·of·Change":·"-50%·+/-·5%"
137 ············},
138 ············"Ignition·Consequence":·{
139 ··············"Type·of·Change":·"-30%·+/-·5%"
140 ············},
141 ············"Outage·Program·Likelihood":·{
142 ··············"Type·of·Change":·"-10%·+/-·1%"
143 ············}
144 ··········}
145 ········}
146 ······}
147 ····}
148 ··}
149 }
```

```
 1  {
 2    "comment_1": "*** NOTE: this sample JSON file is being
 3                 submitted with comments submitted as text
 4                 for clarity. Comments are to be omitted
 5                 in the final submission. ***",
 6    "plan_id": "TestUtilityPlan1",
 7    "comment_2": "*** The plan_id must match the value in the
 8                 Plan table (Table 1). ***",
 9    "KDMMs": "KDMM1,KDMM2,KDMM3",
10    "comment_3": "*** Comma-separated list of KDMMs by
11                 number. This list of KDMMs be the same length
12                 as the list of KDMMs submitted in the
13                 KDMM table (Table 2) and the EUP
14                 submission. ***",
15    "KDMM_names": "Overall Utility Risk,Ignition Consequence,Outage Program Likelihood",
16    "comment_4": "*** Comma-separated list of KDMMs by name.
17                 This list of KDMMs must exactly match
18                 the list of KDMMs submitted in the KDMM
19                 table (Table 2) and the EUP submission. ***",
20    "risk_model_version_ID": "v0.0",
21    "risk_model_calibration_ID": "c0",
22    "comment_5": "*** This version and calibration ID must
23                 match the current (last) row of the Risk
24                 Model Versions Table (Table 3). ***",
25    "Mitigation Types": {
26      "comment_6": "*** In this dictionary, all mitigation
27                   types are listed, using their names as keys. ***",
28      "Undergrounding": {
29        "comment_7": "*** In this dictionary, there are two
30                     classifications for variables, \"Model Input
31                     Variables\" and \"Model Output Variables\". ***",
32        "Model Input Variables": {
33          "comment_8": "*** In this dictionary, we list all the
34                       sub-models which are affected by doing this
35                       mitigation. ***",
36          "Equipment Model": {
37            "comment_9": "*** In this dictionary, the submodel_id is
38                         listed (if the submodel is not \"Model
39                         Output\"), and there is a single key
40                         \"Variables\". ***",
41            "Submodel_id": 29303952,
42            "Variables": {
43              "comment_10": "*** In this dictionary, all relevant
44                            variables are listed. For the input variables,
45                            this is only whatever variables are
46                            actually affected by this mitigation. On
47                            the output variables, all KDMMs must be
48                            listed. ***",
49              "Self-Combustion Likelihood": {
50                "Type of Change": "-94 +/- 3%",
51                "Explanation": "It affects the model at a hyperparameter level."
52              }
53            }
54          },
55          "Ignition Likelihood Model": {
56            "Submodel_id": 29939992,
57            "Variables": {
58              "Contact From Vegetation": {
59                "Type of Change": "-96%",
60                "Explanation": "It affects the model at a hyperparameter level."
61              },
62              "Contact From Object": {
63                "Type of Change": "-94%",
64                "Explanation": "It affects the model at a hyperparameter level."
```

```
65            }
66           }
67          }
68         },
69         "Model Output Variables": {
70           "comment_13": "*** In this dictionary, we have a single
71                  key \"Model Output\" which should be
72                  affected by doing this mitigation. ***",
73           "Model Output": {
74             "Submodel_id": null,
75             "Variables": {
76               "Overall Utility Risk": {
77                 "Type of Change": "-90% +/- 5%"
78               },
79               "Ignition Consequence": {
80                 "Type of Change": null
81               },
82               "Outage Program Likelihood": {
83                 "Type of Change": "-40% +/- 5%"
84               }
85             }
86           }
87         }
88       },
89       "Covered Conductor + Fast Trip": {
90         "Model Input Variables": {
91           "Ignition Likelihood Model": {
92             "Submodel_id": 19329332,
93             "Variables": {
94               "Contact From Vegetation": {
95                 "Type of Change": "-70%",
96                 "Explanation": "It affects the model at a hyperparameter level.
97               }
98             }
99           }
100        },
101        "Model Output Variables": {
102          "Model Output": {
103            "Submodel_id": null,
104            "Variables": {
105              "Overall Utility Risk": {
106                "Type of Change": "-60% +/- 5%"
107              },
108              "Ignition Consequence": {
109                "Type of Change": null
110              },
111              "Outage Program Likelihood": {
112                "Type of Change": "-20% +/- 5%"
113              }
114            }
115          }
116        }
117      },
118      "Vegetation Anihillation": {
119        "Model Input Variables": {
120          "Vegetation Growth Model": {
121            "Submodel_id": 19329335,
122            "Variables": {
123              "Vegetation Zone": {
124                "Type of Change": "-1",
125                "Explanation": "This PVM changes the classification of the
126                  growth zone. It affects the model at a hyperparameter level."
127              }
128            }
```

```
129 ········}
130 ······},
131 ······"Model·Output·Variables":·{
132 ········"Model·Output":·{
133 ··········"Submodel_id":·null,
134 ··········"Variables":·{
135 ············"Overall·Utility·Risk":·{
136 ··············"Type·of·Change":·"-50%·+/-·5%"
137 ············},
138 ············"Ignition·Consequence":·{
139 ··············"Type·of·Change":·"-30%·+/-·5%"
140 ············},
141 ············"Outage·Program·Likelihood":·{
142 ··············"Type·of·Change":·"-10%·+/-·1%"
143 ············}
144 ··········}
145 ········}
146 ······}
147 ····}
148 ··}
149 }
```

C.2.2 Model Risk Landscape JSON

The Model Risk Landscape JSON contains the array of Key Decision-Making Metrics (KDMMs) utilized by the Large Electrical Corporation to assess the impact of the Undergrounding Project.

The Model Risk Landscape JSON file is for modeling all KDMMs affected by individual Confirmed Projects, projected over the years specified in Section 2.7.5 (Core Capability 4) of these Guidelines. The required format for this JSON file is as follows:

At the top level, the JSON structure comprises the PLAN_ID, PORTFOLIO_ID, RISK_MODEL_VERSION_ID, RISK_MODEL_CALIBRATION_ID, and the file submission date. It also includes information about the structure of the internal values, listing the set of years to be projected as a comma-separated list and shows the utilized KDMMs by number, by name, and finally by whether they are considered "cumulative" as described in Section 2.8.6.1 of these Guidelines.

 The main body of each JSON object in this file must be nested as follows, with key "Projects".

- For each PROJECT_ID:

    At the second level, there must be multiple potential mitigations of the Circuit Segment identified by the Project ID, including "Baseline," "Project as scoped," "Screen 3 Alternative," "Undergrounding as scoped," "Additional Comparison," where these terms are all defined as in the Screen 3 Table (Appendix C.1.12).

- For each mitigation type:

    The third level must incorporate multiple "settings" (i.e. Separate, Collective, Ablation, or None) used to track the effects of individual projects: For the "Baseline", all settings would be equivalent, so the only option is "No Setting". For the "Project as scoped" i.e. the work proposed by the Large Electrical Corporation, the required settings are "Separate" (impact of the project alone), "Collective" (impact of the full

proposed portfolio as scoped), and "Ablation" (impact of the remainder of the portfolio without this project). For all other mitigations considered, the required settings are "Separate" and "Collective".

- For each setting:

  The fourth level must contain the tracked KDMMs, matching those presented at the top level.

- For each KDMM:

  The KDMM is reported at two scales; the "~~project level~~Project-Level" scale and the "~~portfolio-level"~~Portfolio-Level" scale.

- For each scale:

  The fifth level lists the calculated output types for this KDMM at this scale. If the KDMM is cumulative, according to the KDMM table and the list of KDMMs at the top level of this file, there are two outputs, "instantaneous" and "cumulative". If the KDMM is non-cumulative, there is only one output, "value".

- For each output:

  The sixth and final level is the output data, which must be a comma-separated list of decimal-precision real numbers. The number of entries in this list will exactly match the number of years in the "years" variable at the top level of this file. Each floating-point number represents this particular output, of this KDMM, at this scale, with this setting, for this mitigation type or alternative, for this Confirmed Project, at each of the specified years since Plan inception.

The Large Electrical Corporation must submit a single JSON file for the full suite of Confirmed Projects in its ~~portfolio~~Portfolio. Figure C.2 shows an example JSON file and includes comments on the individual elements to be submitted for illustrative purposes. The Large Electrical Corporation must omit the comments in its submission.

Figure C.2. Example JSON File with Commented Explanation

```
 1  {
 2  ··"comment_1":·"***·NOTE:·this·sample·JSON·file·is·being·
 3  ····submitted·with·comments·submitted·as·text·
 4  ····for·clarity.·Comments·are·to·be·omitted·
 5  ····in·the·final·submission.·***",
 6  ··"plan_id":·"TestUtilityPlan1",
 7  ··"portfolio_id":·"P1",
 8  ··"comment_2":·"***·The·plan_id·and·portfolio_id·must·match·
 9  ····the·values·in·the·Plan·and·Portfolio·
10  ····tables·(Table·1·and·4),·respectively.·***",
11  ··"Years":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
12  ··"comment_3":·"***·Comma-separated·list·of·values.·This·
13  ····list·of·years·is·specified·by·Section·2.7.5.·
14  ····These·years·are·static·as·the·plan·
15  ····moves,·i.e.·year·0·always·refers·to·the·Plan·
16  ····start·date.·***",
17  ··"KDMMs":·"KDMM1,KDMM2,KDMM3,KDMM4,KDMM5,KDMM6,KDMM7,KDMM8,KDMM9,KDMM10",
18  ··"comment_4":·"***·Comma-separated·list·of·KDMMs·by·
19  ····number.·This·list·of·KDMMs·be·the·same·length·
20  ····as·the·list·of·KDMMs·submitted·in·the·
21  ····KDMM·table·(Table·2)·and·the·EUP·
22  ····submission.·***",
23  ··"KDMM_names":·"Overall·Utility·Risk,Ignition·Risk,
24  ···············Ignition·Likelihood,Ignition·Consequence,
25  ···············Outage·Program·Risk,
26  ···············Outage·Program·Likelihood,
27  ···············Outage·Program·Consequence,
28  ···············Equipment·Risk,
29  ···············Total·Benefits,
30  ···············Reliability·Benefits",
31  ··"comment_5":·"***·Comma-separated·list·of·KDMMs·by·name.·
32  ····This·list·of·KDMMs·must·exactly·match·
33  ····the·list·of·KDMMs·submitted·in·the·KDMM·
34  ····table·(Table·2)·and·the·EUP·submission.·***",
35  ··"risk_model_version_ID":·"v0.0",
36  ··"risk_model_calibration_ID":·"c0",
37  ··"comment_6":·"***·This·version·and·calibration·ID·must·
38  ····match·the·current·(last)·row·of·the·Risk·
39  ····Model·Versions·Table·(Table·3).·***",
40  ··"KDMM_is_cumulative":·{
41  ····"comment_7":·"***·Short·dictionary·describing·whether·a·
42  ····KDMM·accumulates·over·time,·with·KDMM·
43  ····names·as·keys,·\"true\"·or·\"false\"·as·values.·
44  ····Whether·or·not·it·is·True·must·match·
45  ····the·requirements·described·in·Section·XXX.·***",
46  ····"Overall·Utility·Risk":·true,
47  ····"Ignition·Risk":·false,
48  ····"Ignition·Likelihood":·true,
49  ····"Ignition·Consequence":·false,
50  ····"Outage·Program·Risk":·false,
51  ····"Outage·Program·Likelihood":·true,
52  ····"Outage·Program·Consequence":·false,
53  ····"Equipment·Risk":·true,
54  ····"Total·Benefits":·true,
55  ····"Reliability·Benefits":·true
56  ··},
57  ··"Projects":·{
58  ····"comment_8":·"***·In·this·dictionary,·all·projects·are·
```

```
59    ....listed,·using·their·project_ids·as·keys.·***",
60    ...."proj001":·{
61    ......"comment_9":·"***·In·this·dictionary,·all·mitigation·
62    ....types·(proposed·project,·baseline,·and·
63    ....alternative·mitigations)·are·listed,·using·
64    ....the·list·of·names·specified·in·Section·
65    ....XXX.·Additional·alternatives·may·be·added,·
66    ....but·they·must·be·defined·in·the·EUP.·
67    ....Definitions:·1.·Baseline:·The·evolution·of·
68    ....risk·on·this·Circuit·Segment·if·no·
69    ....mitigations·are·planned·or·applied·to·any·of·
70    ....the·portfolio.·2.·Scoped·Project:·The·
71    ....project·as·proposed·and·scoped.·This·may·
72    ....include·multiple·subprojects·which·may·
73    ....use·multiple·mitigation·strategies,·of·
74    ....which·at·least·some·must·include·
75    ....undergrounding·for·the·EUP.·
76    ....conductor·additions.·3.·Screen·3·Alternative:·
77    ....The·potential·project·of·doing·the·most·
78    ....efficient·non-undergrounding·work·
79    ....available,·which·may·include·remote·grids,·
80    ....fast-trip·settings,·and·other·mitigation·
81    ....strategies.·4.·Scoped·Undergrounding:·The·
82    ....project·as·proposed·and·scoped,·but·if·
83    ....only·the·undergrounding·subprojects·are·
84    ....finished.·The·full·project·may·include·
85    ....multiple·subprojects·which·may·use·
86    ....different·mitigation·strategies,·but·here·we·
87    ....track·the·evolution·of·KDMMs·if·only·the·
88    ....undergrounding·subprojects·are·carried·
89    ....out.··***",
90    ......"Scoped·Project":·{
91    ........"comment_10":·"***·In·this·dictionary,·all·settings·(No·
92    ....Setting,·Seperate,·Collective,·and·
93    ....Ablation·studies)·are·listed,·as·well·as·the·
94    ....total·fraction·of·the·project·(as·defined·
95    ....in·Table·C.12)·which·would·be·
96    ....undergrounded·with·this·mitigation·type.·
97    ....Definitions:·1.·No·Setting:·Because·the·baseline·
98    ....has·no·projects,·there·is·no·
99    ....distinction·between·seperate,·collective,·etc.·2.·
100   ....Separate:·Effects·on·the·system·for·just·
101   ....implementing·this·single·mitigation,·
102   ....with·all·other·projects·not·taking·place.·
103   ....3.·Collective:·Effects·on·the·system·for·
104   ....implementing·this·single·mitigation,·
105   ....with·all·other·projects·taking·place·\"as·
106   ....scoped\",·i.e.·using·the·\"Scoped·Project\"·
107   ....as·described.·4.·Ablation:·Effects·on·
108   ....the·system·for·implementing·all·other·
109   ....projects·taking·place·\"as·scoped\",·i.e.·
110   ....using·the·\"Scoped·Project\"·as·described,·but·
111   ....with·this·project·in·particular·not·
112   ....taking·place.··***",
113   ........"Undergrounding·Fraction":·0.6,
114   ........"Separate":·{
115   .........."comment_11":·"***·In·this·dictionary,·all·KDMMs·are·
116   ....listed.·These·must·match·the·KDMMs·listed·at·
```

```json
1  {
2   ·"comment_1":·"***·NOTE:·this·sample·JSON·file·is·being·
3   ····submitted·with·comments·submitted·as·text·
4   ····for·clarity.··Comments·are·to·be·omitted·
5   ····in·the·final·submission.··***",
6   ·"plan_id":·"TestUtilityPlan1",
7   ·"portfolio_id":·"P1",
8   ·"comment_2":·"***·The·plan_id·and·portfolio_id·must·match·
9   ····the·values·in·the·Plan·and·Portfolio·
10  ····tables·(Table·1·and·4),·respectively.··***",
11  ·"Years":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
12  ·"comment_3":·"***·Comma-separated·list·of·values.··This·
13  ····list·of·years·is·specified·by·Section·2.7.5.·
14  ····These·years·are·static·as·the·plan·
15  ····moves,·i.e.·year·0·always·refers·to·the·Plan·
16  ····start·date.··***",
17  ·"KDMMs":·"KDMM1,KDMM2,KDMM3,KDMM4,KDMM5,KDMM6,KDMM7,KDMM8,KDMM9,KDMM10",
18  ·"comment_4":·"***·Comma-separated·list·of·KDMMs·by·
19  ····number.··This·list·of·KDMMs·be·the·same·length·
20  ····as·the·list·of·KDMMs·submitted·in·the·
21  ····KDMM·table·(Table·2)·and·the·EUP·
22  ····submission.··***",
23  ·"KDMM_names":·"Overall·Utility·Risk,Ignition·Risk,
24  ················Ignition·Likelihood,Ignition·Consequence,
25  ················Outage·Program·Risk,
26  ················Outage·Program·Likelihood,
27  ················Outage·Program·Consequence,
28  ················Equipment·Risk,
29  ················Total·Benefits,
30  ················Reliability·Benefits",
31  ·"comment_5":·"***·Comma-separated·list·of·KDMMs·by·name.·
32  ····This·list·of·KDMMs·must·exactly·match·
33  ····the·list·of·KDMMs·submitted·in·the·KDMM·
34  ····table·(Table·2)·and·the·EUP·submission.··***",
35  ·"risk_model_version_ID":·"v0.0",
36  ·"risk_model_calibration_ID":·"c0",
37  ·"comment_6":·"***·This·version·and·calibration·ID·must·
38  ····match·the·current·(last)·row·of·the·Risk·
39  ····Model·Versions·Table·(Table·3).··***",
40  ·"KDMM_is_cumulative":·{
41  ····"comment_7":·"***·Short·dictionary·describing·whether·a·
42  ····KDMM·accumulates·over·time,·with·KDMM·
43  ····names·as·keys,·\"true\"·or·\"false\"·as·values.·
44  ····Whether·or·not·it·is·True·must·match·
45  ····the·requirements·described·in·Section·XXX.··***",
46  ····"Overall·Utility·Risk":·true,
47  ····"Ignition·Risk":·false,
48  ····"Ignition·Likelihood":·true,
49  ····"Ignition·Consequence":·false,
50  ····"Outage·Program·Risk":·false,
51  ····"Outage·Program·Likelihood":·true,
52  ····"Outage·Program·Consequence":·false,
53  ····"Equipment·Risk":·true,
54  ····"Total·Benefits":·true,
55  ····"Reliability·Benefits":·true
56  ·},
57  ·"Projects":·{
58  ····"comment_8":·"***·In·this·dictionary,·all·projects·are·
```

```
59  ····listed,·using·their·project_ids·as·keys.·***",
60  ····"proj001":·{
61  ······"comment_9":·"***·In·this·dictionary,·all·mitigation·
62  ····types·(proposed·project,·baseline,·and·
63  ····alternative·mitigations)·are·listed,·using·
64  ····the·list·of·names·specified·in·Section·
65  ····XXX.·Additional·alternatives·may·be·added,·
66  ····but·they·must·be·defined·in·the·EUP.·
67  ····Definitions:·1.·Baseline:·The·evolution·of·
68  ····risk·on·this·Circuit·Segment·if·no·
69  ····mitigations·are·planned·or·applied·to·any·of·
70  ····the·portfolio.·2.·Scoped·Project:·The·
71  ····project·as·proposed·and·scoped.·This·may·
72  ····include·multiple·subprojects·which·may·
73  ····use·multiple·mitigation·strategies,·of·
74  ····which·at·least·some·must·include·
75  ····undergrounding·for·the·EUP.·
76  ····conductor·additions.·3.·Screen·3·Alternative:·
77  ····The·potential·project·of·doing·the·most·
78  ····efficient·non-undergrounding·work·
79  ····available,·which·may·include·remote·grids,·
80  ····fast-trip·settings,·and·other·mitigation·
81  ····strategies.·4.·Scoped·Undergrounding:·The·
82  ····project·as·proposed·and·scoped,·but·if·
83  ····only·the·undergrounding·subprojects·are·
84  ····finished.·The·full·project·may·include·
85  ····multiple·subprojects·which·may·use·
86  ····different·mitigation·strategies,·but·here·we·
87  ····track·the·evolution·of·KDMMs·if·only·the·
88  ····undergrounding·subprojects·are·carried·
89  ····out.··***",
90  ······"Scoped·Project":·{
91  ········"comment_10":·"***·In·this·dictionary,·all·settings·(No·
92  ····Setting,·Seperate,·Collective,·and·
93  ····Ablation·studies)·are·listed,·as·well·as·the·
94  ····total·fraction·of·the·project·(as·defined·
95  ····in·Table·C.12)·which·would·be·
96  ····undergrounded·with·this·mitigation·type.·
97  ····Definitions:·1.·No·Setting:·Because·the·baseline·
98  ····has·no·projects,·there·is·no·
99  ····distinction·between·seperate,·collective,·etc.·2.·
100 ····Separate:·Effects·on·the·system·for·just·
101 ····implementing·this·single·mitigation,·
102 ····with·all·other·projects·not·taking·place.·
103 ····3.·Collective:·Effects·on·the·system·for·
104 ····implementing·this·single·mitigation,·
105 ····with·all·other·projects·taking·place·\"as·
106 ····scoped\",·i.e.·using·the·\"Scoped·Project\"·
107 ····as·described.·4.·Ablation:·Effects·on·
108 ····the·system·for·implementing·all·other·
109 ····projects·taking·place·\"as·scoped\",·i.e.·
110 ····using·the·\"Scoped·Project\"·as·described,·but·
111 ····with·this·project·in·particular·not·
112 ····taking·place.··***",
113 ········"Undergrounding·Fraction":·0.6,
114 ········"Separate":·{
115 ··········"comment_11":·"***·In·this·dictionary,·all·KDMMs·are·
116 ····listed.··These·must·match·the·KDMMs·listed·at·
```

```
117  ····the·top·level.·***",
118  ··········"Overall·Utility·Risk":·{
119  ············"comment_12":·"***·In·this·dictionary,·the·two·scales·for·
120  ····publication·(Project-level·and·
121  ····Portfolio-level)·are·listed.·Definitions:·1.·
122  ····Project-level:·the·value·of·all·KDMMs·for·
123  ····this·specific·Circuit·Segment,·under·the·
124  ····selected·setting.·2.·Portfolio-level:·the·
125  ····sum·of·values·for·all·KDMMs·for·the·
126  ····entire·set·of·Circuit·Segments·included·in·
127  ····the·Portfolio·***",
128  ············"Project-level":·{
129  ··············"comment_13":·"***·In·this·dictionary,·the·required·
130  ····outputs·for·data·collection·(Instantaneous·&·
131  ····Cumulative,·or·Value)·are·listed.·Which·
132  ····outputs·are·required·for·each·KDMM·are·
133  ····defined·in·Section·2.8.6.1.·Definitions:·1.·
134  ····Instantaneous:·The·value·at·each·
135  ····particular·year·for·this·KDMM.·2.·Cumulative:·The·
136  ····integrated·or·summedvalue·at·each·
137  ····particular·year·for·this·KDMM.·3.·Value:·If·
138  ····instantaneous·and·cumulative·values·are·
139  ····not·both·required,·this·output·is·used·
140  ····instead·to·distinguish·the·cases.·It·is·
141  ····calculated·as·the·value·at·each·particular·
142  ····year·for·this·KDMM,·identically·to·how·
143  ····\"instantaneous\"·was·defined.·***",
144  ················"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
145  ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
146  ············},
147  ············"Portfolio-level":·{
148  ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
149  ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
150  ············}
151  ··········},
152  ··········"Ignition·Risk":·{
153  ············"Project-level":·{
154  ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
155  ············},
156  ············"Portfolio-level":·{
157  ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
158  ············}
159  ··········}
160  ········},
161  ········"Collective":·{
162  ··········"Overall·Utility·Risk":·{
163  ············"Project-level":·{
164  ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
165  ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
166  ············},
167  ············"Portfolio-level":·{
168  ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
169  ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
170  ············}
171  ··········},
172  ··········"Ignition·Risk":·{
173  ············"Project-level":·{
174  ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
```

```
175 ··········},
176 ··········"Portfolio-level":·{
177 ············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
178 ··········}
179 ········}
180 ······},
181 ······"Ablation":·{
182 ········"Overall·Utility·Risk":·{
183 ··········"Project-level":·{
184 ············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
185 ············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
186 ··········},
187 ··········"Portfolio-level":·{
188 ············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
189 ············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
190 ··········}
191 ········},
192 ······"Ignition·Risk":·{
193 ··········"Project-level":·{
194 ············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
195 ··········},
196 ··········"Portfolio-level":·{
197 ············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
198 ··········}
199 ········}
200 ······}
201 ····},
202 ····"Baseline":·{
203 ······"Undergrounding·Fraction":·null,
204 ······"No·Setting":·{
205 ········"Overall·Utility·Risk":·{
206 ··········"Project-level":·{
207 ············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
208 ············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
209 ··········},
210 ··········"Portfolio-level":·{
211 ············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
212 ············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
213 ··········}
214 ········},
215 ······"Ignition·Risk":·{
216 ··········"Project-level":·{
217 ············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
218 ··········},
219 ··········"Portfolio-level":·{
220 ············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
221 ··········}
222 ········}
223 ······}
224 ····},
225 ····"Screen·3·Alternative":·{
226 ······"Undergrounding·Fraction":·0,
227 ······"Separate":·{
228 ········"Overall·Utility·Risk":·{
229 ··········"Project-level":·{
230 ············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
231 ············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
232 ··········},
```

```
233 ···········"Portfolio-level":·{
234 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
235 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
236 ···········}
237 ·········},
238 ·········"Ignition·Risk":·{
239 ···········"Project-level":·{
240 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
241 ···········},
242 ···········"Portfolio-level":·{
243 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
244 ···········}
245 ·········}
246 ·······},
247 ·······"Collective":·{
248 ·········"Overall·Utility·Risk":·{
249 ···········"Project-level":·{
250 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
251 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
252 ···········},
253 ···········"Portfolio-level":·{
254 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
255 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
256 ···········}
257 ·········},
258 ·········"Ignition·Risk":·{
259 ···········"Project-level":·{
260 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
261 ···········},
262 ···········"Portfolio-level":·{
263 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
264 ···········}
265 ·········}
266 ·······}
267 ·····},
268 ·····"Scoped·Undergrounding":·{
269 ·······"Undergrounding·Fraction":·0.6,
270 ·······"Separate":·{
271 ·········"Overall·Utility·Risk":·{
272 ···········"Project-level":·{
273 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
274 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
275 ···········},
276 ···········"Portfolio-level":·{
277 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
278 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
279 ···········}
280 ·········},
281 ·········"Ignition·Risk":·{
282 ···········"Project-level":·{
283 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
284 ···········},
285 ···········"Portfolio-level":·{
286 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
287 ···········}
288 ·········}
289 ·······},
290 ·······"Collective":·{
```

```
291          "Overall Utility Risk": {
292            "Project-level": {
293              "Instantaneous": "0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
294              "Cumulative": "0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
295            },
296            "Portfolio-level": {
297              "Instantaneous": "0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
298              "Cumulative": "0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
299            }
300          },
301          "Ignition Risk": {
302            "Project-level": {
303              "Value": "0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
304            },
305            "Portfolio-level": {
306              "Value": "0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
307            }
308          }
309        }
310      }
311    }
312  }
313 }
```

```
117  ····the·top·level.·***",
118  ··········"Overall·Utility·Risk":·{
119  ···········"comment_12":·"***·In·this·dictionary,·the·two·scales·for·
120  ····publication·(Project-level·and·
121  ····Portfolio-level)·are·listed.·Definitions:·1.·
122  ····Project-level:·the·value·of·all·KDMMs·for·
123  ····this·specific·Circuit·Segment,·under·the·
124  ····selected·setting.·2.·Portfolio-level:·the·
125  ····sum·of·values·for·all·KDMMs·for·the·
126  ····entire·set·of·Circuit·Segments·included·in·
127  ····the·Portfolio·***",
128  ············"Project-level":·{
129  ·············"comment_13":·"***·In·this·dictionary,·the·required·
130  ····outputs·for·data·collection·(Instantaneous·&·
131  ····Cumulative,·or·Value)·are·listed.·Which·
132  ····outputs·are·required·for·each·KDMM·are·
133  ····defined·in·Section·2.8.6.1.·Definitions:·1.·
134  ····Instantaneous:·The·value·at·each·
135  ····particular·year·for·this·KDMM.·2.·Cumulative:·The·
136  ····integrated·or·summedvalue·at·each·
137  ····particular·year·for·this·KDMM.·3.·Value:·If·
138  ····instantaneous·and·cumulative·values·are·
139  ····not·both·required,·this·output·is·used·
140  ····instead·to·distinguish·the·cases.·It·is·
141  ····calculated·as·the·value·at·each·particular·
142  ····year·for·this·KDMM,·identically·to·how·
143  ····\"instantaneous\"·was·defined.·***",
144  ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
145  ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
146  ············},
147  ···········"Portfolio-level":·{
148  ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
149  ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
150  ············}
151  ··········},
152  ··········"Ignition·Risk":·{
153  ···········"Project-level":·{
154  ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
155  ············},
156  ···········"Portfolio-level":·{
157  ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
158  ············}
159  ··········}
160  ········},
161  ········"Collective":·{
162  ··········"Overall·Utility·Risk":·{
163  ···········"Project-level":·{
164  ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
165  ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
166  ············},
167  ···········"Portfolio-level":·{
168  ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
169  ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
170  ············}
171  ··········},
172  ··········"Ignition·Risk":·{
173  ···········"Project-level":·{
174  ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
```

```
175 ············},
176 ···········"Portfolio-level":·{
177 ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
178 ···········}
179 ··········}
180 ········},
181 ········"Ablation":·{
182 ··········"Overall·Utility·Risk":·{
183 ···········"Project-level":·{
184 ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
185 ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
186 ···········},
187 ···········"Portfolio-level":·{
188 ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
189 ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
190 ···········}
191 ··········},
192 ·········"Ignition·Risk":·{
193 ···········"Project-level":·{
194 ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
195 ···········},
196 ···········"Portfolio-level":·{
197 ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
198 ···········}
199 ··········}
200 ········}
201 ······},
202 ······"Baseline":·{
203 ········"Undergrounding·Fraction":·null,
204 ········"No·Setting":·{
205 ··········"Overall·Utility·Risk":·{
206 ···········"Project-level":·{
207 ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
208 ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
209 ···········},
210 ···········"Portfolio-level":·{
211 ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
212 ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
213 ···········}
214 ··········},
215 ·········"Ignition·Risk":·{
216 ···········"Project-level":·{
217 ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
218 ···········},
219 ···········"Portfolio-level":·{
220 ·············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
221 ···········}
222 ··········}
223 ········}
224 ······},
225 ······"Screen·3·Alternative":·{
226 ········"Undergrounding·Fraction":·0,
227 ········"Separate":·{
228 ··········"Overall·Utility·Risk":·{
229 ···········"Project-level":·{
230 ·············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
231 ·············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
232 ···········},
```

```
233 ············"Portfolio-level":·{
234 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
235 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
236 ············}
237 ··········},
238 ··········"Ignition·Risk":·{
239 ············"Project-level":·{
240 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
241 ············},
242 ············"Portfolio-level":·{
243 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
244 ············}
245 ··········}
246 ········},
247 ········"Collective":·{
248 ··········"Overall·Utility·Risk":·{
249 ············"Project-level":·{
250 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
251 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
252 ············},
253 ············"Portfolio-level":·{
254 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
255 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
256 ············}
257 ··········},
258 ··········"Ignition·Risk":·{
259 ············"Project-level":·{
260 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
261 ············},
262 ············"Portfolio-level":·{
263 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
264 ············}
265 ··········}
266 ········}
267 ······},
268 ······"Scoped·Undergrounding":·{
269 ········"Undergrounding·Fraction":·0.6,
270 ········"Separate":·{
271 ··········"Overall·Utility·Risk":·{
272 ············"Project-level":·{
273 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
274 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
275 ············},
276 ············"Portfolio-level":·{
277 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
278 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
279 ············}
280 ··········},
281 ··········"Ignition·Risk":·{
282 ············"Project-level":·{
283 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
284 ············},
285 ············"Portfolio-level":·{
286 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
287 ············}
288 ··········}
289 ········},
290 ········"Collective":·{
```

```
291 ··········"Overall·Utility·Risk":·{
292 ···········"Project-level":·{
293 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
294 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
295 ···········},
296 ···········"Portfolio-level":·{
297 ··············"Instantaneous":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55",
298 ··············"Cumulative":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
299 ···········}
300 ·········},
301 ·········"Ignition·Risk":·{
302 ···········"Project-level":·{
303 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
304 ···········},
305 ···········"Portfolio-level":·{
306 ··············"Value":·"0,1,2,3,4,5,6,7,8,9,10,15,20,25,30,35,40,45,50,55"
307 ···········}
308 ·········}
309 ········}
310 ······}
311 ····}
312 ··}
313 }
```

C.3   Spatial Data Submissions

The Large Electrical Corporation must include spatial data with every Progress Report as described below. Template files to aid in submission of the data requirements are available on Energy Safety's website. The format of these files is in the form of a geodatabase (GDB), within which individual tables, such as those defined in Sections C.4.1 through C.4.6 below, are referred to as "feature classes". If the Large Electrical Corporation is unable to provide all feature classes required below in the format of the template files, file formats such as ".KMZ" or others may be submitted for the remaining feature classes. However, other file formats will be considered only if Energy Safety, at its sole discretion, determines that the submitted files adequately reflect all the information necessary for Plan evaluation, and if the Large Electrical Corporation outlines a timeline for transition to a GDB format during the duration of the EUP. Technical requirements for spatial data submissions are as follows:

a.   Submit data in a single geodatabase (GDB).

b.   Submit GDB files that are interoperable and compatible with standard industry practices.

c.   Ensure all data attributes follow the schema required in Section 2.8.3.

d.   Customize metadata as needed to follow the requirements in this document.

e.   Use the WGS 1984 California (Teale) Albers (US Feet) projected coordinate system (WKID Esri 102599) for all data submitted.

f.   With each Progress Report, the Large Electrical Corporation is not required to resubmit a feature class if no changes are made to that feature class.

g. Delete any feature classes and/or tables which are not used in this way (do not submit empty feature classes or tables).

h. Compress the GDB into a zipped folder and submit that folder to Energy Safety's SharePoint file transfer portal. Each Large Electrical Corporation will have a designated folder on Energy Safety's SharePoint site for this purpose.

i. Name the GDB according to the following convention:

    i. "[Large Electrical Corporation Abbreviation]PR#_Date_R#",

        1. *for example:* "PGE_PR1_2025-01-01_R0.gdb.zip"

The Large Electrical Corporation must ensure location accuracy in its GIS data submissions, including, but not limited to:

a. All records in feature classes must include geometry.

b. Horizontal locations reported in feature classes must be within 20 meters of actual locations as established using a commercially available GNSS receiver in the current epoch of the WGS84 datum under conditions where the receiver's estimated horizontal positional error is 5 meters or less.

C.4   GIS Data Schema

The Large Electrical Corporation must report its geospatial data in accordance with the data schema provided below.

C.4.1 Circuit Segment (Line Feature Class)

The Large Electrical Corporation must report all Circuit Segments representing its entire distribution system as a spatial data submission. Each record in this feature must match with one and only one row of the Circuit Segment Identification Table and be identified by the same CIRCUIT_SEGMENT_ID. This feature class must consolidate each Circuit Segment to a single row which includes both primary and secondary distribution lines. This table must reflect the most current modeling information (see Section 2.4.2.1) as of each Progress Report submission.

Table C.16..16. Circuit Segment GIS Data

Field Name	Field Description
utility_name	Large electrical corporation abbreviation. Acceptable values are the following: • PG&E • SDG&E • SCE

	This field is required.
plan_id	Unique value identifying the plan. Must match ID in Plan Table. This field is required.
circuit_id	Unique ID for a specific Circuit on which the Circuit Segment is located. Must be a traceable stable ID within the ~~electrical corporation's~~Large Electrical Corporation's operations/processes. Primary Key for the feature class if the ~~electrical corporation~~Large Electrical Corporation does not uniquely identify segments with persistent IDs. This field is required.
circuit_segment_id	Unique ID for the Circuit Segment. This Circuit Segment must be available in the Circuit Segments list at the time of the vintaging.
internal_circuit_segment_id	If the ~~large electrical corporation~~Large Electrical Corporation reuses internal names for Circuit Segments in a non-unique way, or otherwise uses another set of names besides the circuit_segment_id as defined in C.1, report that name here. However, the circuit_segment_id must append the 8-digit minting date to this field as described in the introduction of Appendix C.

C.4.2 Confirmed Project Polygon (Polygon Feature Class)

The Large Electrical Corporation must report each Confirmed Project as a polygon, which is designed to encompass the entire Circuit Segment the Undergrounding Project was defined on, minus any overlap with existing Confirmed Project Polygons. Each row of this table must match with one and only one row of the Project Table and be identified by the same PROJECT_ID.

Table C.17..17. Project GIS Data

Field Name	Field Description
utility_name	Large Electrical Corporation abbreviation. Acceptable values are the following: • PG&E • SDG&E • SCE This field is required.
project_id	A unique value identifying the Confirmed Project. Must match ID used in Project Table. This field is required.
plan_id	Unique value identifying the plan. Must match ID in Plan Table. This field is required.
portfolio_id	Unique value identifying the current portfolio. Must match Portfolio Table. This field is required.
circuit_id	Unique ID for the specific Circuit on which the Undergrounding Project was defined. This Circuit must have been submitted in the Circuit Segments list in the Progress reportReport listed in circuit_segment_vintage.
circuit_segment_id	Unique ID for the specific Circuit Segment on which the Undergrounding Project was defined. This Circuit Segment must have been submitted in the Circuit Segments list in the Progress reportReport listed in circuit_segment_vintage.
circuit_segment_vintage	Number of the Progress Report when this Undergrounding Project was defined.

Additional requirements for the construction of the Confirmed Project Polygon feature class are as follows:

a)a. Circuit Segments must be reasonably, and completely, bounded by the Confirmed Project Polygon, which may be created algorithmically, manually, or using any other process the Large Electrical Corporation utilizes. However, the vertices in some cases may be required to be manually adjusted to minimize overlapping. The exception to the completeness requirement is if a new Circuit Segment is already partially included in an existing Confirmed Project (see below).

b) b.   Confirmed Project Polygons must be defined to include only assets associated with the Circuit Segment their Confirmed Project is defined on. The Large Electrical Corporation must manually remove any overlap from other Circuit Segments, unless avoiding overlap with other Circuit Segments is not possible (e.g. crossing Circuit Segments, shared equipment, etc).

c) c. Confirmed Project Polygons cannot overlap with one another except at shared vertices, unless creating non-overlapping polygons is completely unfeasible (e.g. crossing Circuit Segments, shared equipment, etc).

d) d.   The Confirmed Project Polygon does not need to be redrawn due to changes in Circuit Segment topology, even if these changes cause one or more Circuit Segments to partially or completely overlap with a Confirmed Project Polygon. The Confirmed Project Polygon defines the boundary of pre-mitigation lines that can be mitigated as part of this Confirmed Project.

e) e.   If a Circuit Segment already overlaps with an existing Confirmed Project Polygon when it is considered for ~~undergrounding~~Undergrounding within the EUP, the risk modeling on this Circuit Segment must only consider the portion not overlapping with any existing Confirmed Project, and if confirmed, the Confirmed Project Polygon based on this Circuit Segment will be drawn only around the portion not overlapping with any existing Confirmed Project Polygon.

f) f. Confirmed Project Polygons are not to be edited in subsequent submissions. Any change to a Confirmed Project Polygon is considered a new Undergrounding Project and must be passed through the screens again.

C.4.3 Pre-mitigation Overhead Conductor (Line Feature Class)

The Large Electrical Corporation must report the existing overhead line associated with each Subproject appearing in the Subproject Table. This feature class reports the Subproject before mitigations took place.

Table C.~~18.~~18. Pre-mitigation Overhead Conductor GIS Data

Field Name	Field Description
utility_name	Large Electrical Corporation abbreviation. Acceptable values are the following: • PG&E • SDG&E • SCE This field is required.

Field Name	Field Description
subproject_id	Unique ID of the portion of overhead line to be mitigated in working on this Subproject. Must be a unique value that identifies this portion of the circuit and a traceable stable ID within the electrical corporation'sLarge Electrical Corporation's operations/processes. This field must also match the ID used in the Subproject Table. This field is required.
pre_mitigation_alignment_id	IntegerString representing the versioning of this Subproject. If the length or endpoints of this Subproject change in future Progress Reports, a new pre_mitigation_alignment_id will be used. After construction, this no longer updates, and represents the final pre-mitigation line mitigated by this Subproject. This must match the pre_mitigation_alignment_id in the Subproject Table. This field is required.
project_id	A unique value identifying the Undergrounding Project. Must match ID used in Project Table. This field is required.
plan_id	Unique value identifying the plan. Must match ID in plan. This field is required.
portfolio_id	Unique value identifying the current portfolioPortfolio. Must match Portfolio Table. This field is required.
line_class	Class of line contained in Subproject planned for undergrounding.Undergrounding. Possible values: • OH-P • OH-S • UG-P • UG-S This field is required.
circuit_id	Unique ID for the specific Circuit on which this Undergrounding Project was defined. Primary Key for the feature class if the electrical corporationLarge Electrical Corporation does not uniquely identify segments with persistent IDs. This field is required.
circuit_segment_id	Unique ID for the specific Circuit Segment on which the Undergrounding Project was defined. This field is required.

Additional requirements for the Pre-mitigation Overhead Conductor feature class are as follows:

a)a.   Subprojects described in this feature class must fall within the bounds of the associated Confirmed Project Polygon, as described in C.4.2, unless an explanation for exceeding the boundaries is given, as described in C.1.14.

b)b.   A new PRE_MITIGATION_ALIGNMENT_ID is issued for any change in the location of any endpoints of the Line GIS object.

c)c. The abbreviations in the "LINE_CLASS" variable represent the following: OH-P: Overhead Primary Distribution, OH-S: Overhead Secondary Distribution, UG-P: Underground Primary Distribution, UG-S: Underground Secondary Distribution.

C.4.4 Pre-mitigation Assets (Point Feature Class)

The Large Electrical Corporation must report some overhead assets other than conductor identified for removal/undergroundingUndergrounding: capacitor banks, fuses, switches/reclosers, transformers, and support structures. In this feature class, each row is an individual piece of equipment which is currently operationally attached to a specific Subproject and is intended to be moved, removed, or deenergized.

Table C.19..19. Pre-mitigation Assets GIS Data

Field Name	Field Description
utility_name	Large Electrical Corporation abbreviation. Acceptable values are the following: • PG&E • SDG&E • SCE This field is required.
subproject_id	Unique ID of the portion of overhead line to be mitigated in working on this Subproject. Must be a unique value that identifies this portion of the Circuit and a traceable stable ID within the electrical corporation'sLarge Electrical Corporation's operations/processes. This field must also match the ID used in the Subproject Table. This field is required.
pre_mitigation_alignment_id	IntegerString representing the versioning of this Subproject. If the length or endpoints of this Subproject change in future Progress Reports, a new pre_mitigation_alignment_id will be used. After construction, this reflects the pre-construction assets that have since been moved or removed. This must match the pre_mitigation_alignment_id in the Subproject Table. This field is required.

Field Name	Field Description
project_id	A unique value identifying the Undergrounding Project. Must match ID used in Project Table. This field is required.
plan_id	Unique value identifying the plan. Must match ID in plan. This field is required.
portfolio_id	Unique value identifying the ~~portfolio~~Portfolio. Must match Portfolio Table. This field is required.
circuit_id	Unique ID for the specific Circuit on which this Undergrounding Project was defined. Primary Key for the feature class if the ~~electrical corporation~~Large Electrical Corporation does not uniquely identify segments with persistent IDs. This field is required.
circuit_segment_id	Unique ID for the specific Circuit Segment on which the Undergrounding Project was defined. This field is required.
asset_type	Type of asset represented. Acceptable values: • Capacitor bank • Fuse • Switchgear • Transformer • Support structure This field is required.

Additional requirements for the Pre-mitigation Assets feature class are as follows.

~~a)~~a.   All equipment in each Subproject described in this feature class must fall within the bounds or along the edge of the associated Confirmed Project Polygon, as described in C.4.2, unless an explanation for exceeding the boundaries is given, as described in C.1.14.

~~b)~~b.   Changes to the PRE_MITIGATION_ALIGNMENT_ID are determined by C.4.3, the current submission must match the PRE_MITIGATION_ALIGNMENT_ID for each Subproject to the values in that table.

C.4.5 Post-mitigation Conductor (Line Feature Class)

The Large Electrical Corporation must identify the alignment of new mitigated conductor.

Table C.20..20. Post-mitigation Conductor GIS Data

Field Name	Field Description
utility_name	Large Electrical Corporation abbreviation. Acceptable values are the following: • PG&E • SDG&E • SCE This field is required.
subproject_id	Unique ID of the portion of overhead line to be mitigated in working on this Subproject. Must be a unique value that identifies this portion of the ~~circuit~~Circuit and a traceable stable ID within the ~~electrical corporation's~~Large Electrical Corporation's operations/processes. This field must also match the ID used in the Subproject Table. This field is required.
post_mitigation_alignment_id	~~Integer~~String representing the versioning of this Subproject. If the length or endpoints of this Subproject change in future Progress Reports, a new post_migitation_alignment_id will be used. After construction, this no longer updates, and represents the final post-mitigation line installed through this Subproject. This must match the post_mitigation_alignment_id from the Subproject Table. This field is required.
project_id	A unique value identifying the Undergrounding Project. Must match ID used in Project Table. This field is required.
plan_id	Unique value identifying the plan. Must match ID in plan. This field is required.
portfolio_id	Unique value identifying the current ~~portfolio~~Portfolio. Must match Portfolio Table. This field is required.
line_class	Class of line contained in Subproject planned for ~~undergrounding.~~Undergrounding. Possible values: • OH-P • OH-S • UG-P • UG-S This field is required.

Field Name	Field Description
circuit_id	Unique ID for the specific Circuit on which this Undergrounding Project was defined. Primary Key for the feature class if the electrical corporation does not uniquely identify segments with persistent IDs. This field is required.
circuit_segment_id	Unique ID for the specific Circuit Segment on which the Undergrounding Project was defined. This field is required.

Additional requirements for the Post-mitigation Conductor feature class are as follows:

a)a.   Subprojects described in this feature class must serve roughly the same region and customers as the overhead conductor Subproject they are replacing. However, some variation in this is permitted. Additionally, the newly installed line is not required to fall entirely within the Confirmed Project Polygon feature.

b)b.   A new POST_MITIGATION_ALIGNMENT_ID is issued for any change in the location of any endpoints of the Line GIS object.

c)c.   The abbreviations in the "LINE_CLASS" variable represent the following: OH-P: Overhead Primary Distribution, OH-S: Overhead Secondary Distribution, UG-P: Underground Primary Distribution, UG-S: Underground Secondary Distribution.

C.4.6 Post-mitigation Assets (Point Feature Class)

The Large Electrical Corporation must identify new installations of the following assets: capacitor banks, fuses, switches/reclosers, transformers, and support structures. In this feature class, each row is an individual piece of newly installed or moved equipment which will be or has been attached to a specific Subproject after the mitigation is carried out.

Table C.21..21. Post-mitigation Assets GIS Data

Field Name	Field Description
utility_name	Large Electrical Corporation abbreviation. Acceptable values are the following: • PG&E • SDG&E • SCE This field is required.
subproject_id	Unique ID of the portion of overhead line to be mitigated in working on this Subproject. Must be a unique value that identifies this portion of the

Field Name	Field Description
	~~circuit~~Circuit and a traceable stable ID within the ~~electrical corporation's~~Large Electrical Corporation's operations/processes. This field must also match the ID used in the Subproject Table. This field is required.
post_~~mitigationalignment~~mitigation_alignment_id	~~Integer~~String representing the versioning of this Subproject. If the length or endpoints of this Subproject change in future Progress Reports, a new post_mitigation_alignment_id will be used. After construction, this reflects the post-construction assets that have been moved or installed. This must match the post_mitigation_alignment_id from the Subproject Table. This field is required.
project_id	A unique value identifying the Undergrounding Project. Must match ID used in Project Table. This field is required.
plan_id	Unique value identifying the plan. Must match ID in plan. This field is required.
portfolio_id	Unique value identifying the ~~portfolio~~Portfolio. Must match Portfolio Table. This field is required.
circuit_id	Unique ID for the specific Circuit on which this Undergrounding Project was defined. Primary Key for the feature class if the ~~electrical corporation~~Large Electrical Corporation does not uniquely identify segments with persistent IDs. This field is required.
circuit_segment_id	Unique ID for the specific Circuit Segment on which the Undergrounding Project was defined. This field is required.
asset_type	Type of asset represented. Acceptable values: • Capacitor bank • Fuse • Switchgear • Transformer • Support Structure This field is required.

Additional requirements for the Post-mitigation Assets feature class are as follows:

a. Changes to the POST_MITIGATION_ALIGNMENT_ID are determined by C.4.5, the current submission must match the POST_MITIGATION_ALIGNMENT_ID for each Subproject to the values in that table.

DATA DRIVEN
FORWARD-THINKING
INNOVATIVE
SAFETY FOCUSED

हे