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PG&E's proposed changes to the Draft Guidelines are shown in the third column of the table below. Proposed additions to the Draft Guidelines are shown as underlined text (<u>proposed addition</u>) and proposed deletions are shown as a strike through (~~proposed deletion~~).

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2.4.2	Screen 2 (Project Information and Alternative Mitigation Comparison) confirms there is sufficient information available on a circuit segment and requires comparison of undergrounding to alternative mitigations in order to determine which Eligible Circuit Segments can be treated as Undergrounding Projects. For Screen 2 (Project Information and Alternative Mitigation Comparison), the large electrical corporation must conduct an analysis comparing undergrounding to alternative mitigations and provide the CPUC Cost Benefit Ratio (CBR) and all information in the CPUC Data Appendix 1[9] at the time the EUP is submitted to Energy Safety. The alternative mitigation comparison must include a comparison of at least two alternative mitigations. Section 2.8.7.1 and Appendix C.1.13 of these Guidelines set out the instructions for the Screen 2 Project Information Table and Appendix E of these Guidelines contains an example Screen 2 Project Information Table. No project can be considered for the 10-Year Electrical Undergrounding Program unless this information is available.	Screen 2 (Project Information and Alternative Mitigation Comparison) confirms there is sufficient information available on a circuit segment and requires comparison of undergrounding to alternative mitigations in order to determine which Eligible Circuit Segments can be treated as Undergrounding Projects. For Screen 2 (Project Information and Alternative Mitigation Comparison), the large electrical corporation must conduct an analysis comparing undergrounding to alternative mitigations and provide the CPUC Cost Benefit Ratio (CBR) and all information in the CPUC Data Appendix 1[9] at the time the EUP is submitted to Energy Safety. The alternative mitigation comparison must include a comparison of at least two alternative mitigations. Section 2.8.7.1 and Appendix C.1.13 of these Guidelines set out the instructions for the Screen 2 Project Information Table and Appendix E of these Guidelines contains an example Screen 2 Project Information Table. No project can be considered for the 10-Year Electrical Undergrounding Program unless this information is available. <u>If an alternative mitigation cannot be analyzed at the circuit segment level, the large electrical corporation can provide an</u>

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		analysis of that alternative mitigation at a different level of granularity.
2.4.3	Screen 3 (Project Risk Analysis) is the procedure for evaluating an individual Undergrounding Project in the context of the Portfolio of projects and includes information obtained through the project development process. The Screen 3 (Project Risk Analysis) considers the wildfire reduction and reliability increase elements of the Portfolio Mitigation Objective of an Undergrounding Project and includes comparing risk metrics for undergrounding and alternative mitigations. The large electrical corporation must prepare a Project Reference Sheet for each project for consideration under Screen 3 (Project Risk Analysis). Instructions for the Project Reference Sheet are in Section 2.8.7.2 of these Guidelines and an example is attached as Appendix E to these Guidelines. Screen 3 (Project Risk Analysis) must be completed for each Undergrounding Project when the large electrical corporation has sufficient information to fulfill the modeling requirements in Section 2.7 for that Undergrounding Project. Screen 3 (Project Risk Analysis) can be applied to projects at any time after submitting the EUP, as detailed information becomes available. The Project Reference Sheet must be updated when new data is available; these updates will be part of the Progress Reports. The EUP must contain a detailed Screen 3 (Project Risk Analysis) procedure and describe how the large electrical corporation will	Screen 3 (Project Risk Analysis) is the procedure for evaluating an individual Undergrounding Project in the context of the Portfolio of projects and includes information obtained through the project development process. The Screen 3 (Project Risk Analysis) considers the wildfire reduction and reliability increase elements of the Portfolio Mitigation Objective of an Undergrounding Project and includes comparing risk metrics for undergrounding and alternative mitigations. The large electrical corporation must prepare a Project Reference Sheet for ~~each~~ projects for consideration under Screen 3 (Project Risk Analysis), not only the first 25 projects submitted at the time the EUP is submitted for approval. The Project Reference Sheet may be a single document for all projects in a tabular form. Instructions for the Project Reference Sheet are in Section 2.8.7.2 of these Guidelines and an example is attached as Appendix E to these Guidelines. Screen 3 (Project Risk Analysis) must be completed for each Undergrounding Project when the large electrical corporation has sufficient information to fulfill the modeling requirements in Section 2.7 for that Undergrounding Project. Screen 3 (Project Risk Analysis) can be applied to projects at any time after submitting the EUP, as detailed information becomes available. The Project Reference Sheet must be updated when new data is available; these updates will be part of the Progress Reports.

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	use the screen on individual Undergrounding Projects before and after implementation of the EUP begins. The information used for alternative mitigations chosen for the Screen 3 (Project Risk Analysis) must reflect current project- specific information. The procedure must include how the large electrical corporation will choose alternative mitigations for Screen 3 (Project Risk Analysis). Instructions on creating and completing the Screen 3 Comparative Risk Metrics Table are in Section 2.8.7.4 of these Guidelines. At the time of filing the EUP, there must be a Portfolio of at least 25 projects considered under Screen 3 (Project Risk Analysis). An Undergrounding Project that has completed Screen 3 (Project Risk Analysis) can proceed to Screen 4 (Project Prioritization). Undergrounding Projects that have completed Screen 3 (Project Risk Analysis) are reported as Confirmed Projects on Project Reference Sheets and in Progress Reports.	The EUP must contain a detailed Screen 3 (Project Risk Analysis) procedure and describe how the large electrical corporation will use the screen on individual Undergrounding Projects before and after implementation of the EUP begins. The information used for alternative mitigations chosen for the Screen 3 (Project Risk Analysis) must reflect current project- specific information. The procedure must include how the large electrical corporation will choose alternative mitigations for Screen 3 (Project Risk Analysis). Instructions on creating and completing the Screen 3 Comparative Risk Metrics Table are in Section 2.8.7.4 of these Guidelines. At the time of filing the EUP, there must be a Portfolio of at least 25 projects considered under Screen 3 (Project Risk Analysis). An Undergrounding Project that has completed Screen 3 (Project Risk Analysis) can proceed to Screen 4 (Project Prioritization). Undergrounding Projects that have completed Screen 3 (Project Risk Analysis) are reported as Confirmed Projects on Project Reference Sheets and in Progress Reports.
2.4.5.1, Table 1 – Circuit Segment Information List[(A)]	(1) Table 1: Circuit Segment Information Lists (Reference Section 2.4.5.1); and (2) Circuit Segment Identification Table (Reference Section 2.8.1 and Appendix C.1.5).	A large electrical corporation must provide the following information for Non-EUP Distribution Undergrounding Projects: (1) Utility Name (Appendix C.1) (2) Project Identification Number (Appendix C.5) (3) External Funding Source (Appendix C.5)

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		(4) Risk Model Version (New Data) (5) Circuit Segment Length (Appendix C.5) (6) Overall Utility System Risk Rank (Appendix C.6) (7) Electrical Corporation Identification Code (e.g. Maintenance Activity Type) (Appendix C.8) (8) County Code (Appendix C.8) (9) CPUC High Fire Threat District (Appendix C.8) (10) Identify if Project is in a Wildfire Rebuild Area (Appendix C.8) (11) Current Project Status (Appendix C.11).
2.7.3	The Key Decision-Making Metrics (KDMMs) are defined to be the collection of top-level metrics that the large electrical corporation proposes to use to evaluate the efficacy of an Undergrounding Project. The KDMMs will be used for approximating risk at the System-Level, Portfolio-Level, and individual Circuit Segment-Level. A large electrical corporation must include the seven mandatory KDMMs described below and has the option to include five additional KDMMs of its choosing. a. The large electrical corporation must include the	The Key Decision-Making Metrics (KDMMs) are defined to be the collection of top-level metrics that the large electrical corporation proposes to use to evaluate the efficacy of an Undergrounding Project. The KDMMs will be used for approximating risk at the System-Level, Portfolio-Level, and individual Circuit Segment-Level. A large electrical corporation must include the seven mandatory KDMMs described below and has the option to include five additional KDMMs of its choosing. a. The large electrical corporation must include the

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	following KDMMs: i. **Overall Utility Risk:** A 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. ii. **Ignition Risk**: 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. This is an unweighted and unscaled calculation. iii. **Ignition Consequence:** 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. iv. **Ignition Likelihood:** The likelihood of an ignition at a given location given a probabilistic set of environmental conditions. v. **Outage Program Risk:** 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	following KDMMs: i. **Overall Utility Risk:** A 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. ii. **Ignition Risk**: 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. This is an unweighted and unscaled calculation. iii. **Ignition Consequence:** 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. iv. **Ignition Likelihood:** The likelihood of an ignition at a given location given a probabilistic set of environmental conditions. v. **Outage Program Risk:** 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

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	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.	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.
	vi. **Outage Program Consequence:** 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.	vi. **Outage Program Consequence:** 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.
	vii. **Outage Program Likelihood:** The likelihood of a large electrical corporation an Outage Program given a probabilistic set of environmental conditions. This measure should capture both the probability of an Outage Program Events(s) being initiated at given time and the length of time of those outage(s).	vii. **Outage Program Likelihood:** The likelihood of a large electrical corporation an Outage Program given a ~~probabilistic~~ historic set of environmental conditions. This measure should capture both the probability of an Outage Program Events(s) being initiated at given time and the length of time of those outage(s).
	b. Up to five additional KDMMs proposed by the large electrical corporation may also be included. For each additional KDMM:	b. Up to five additional KDMMs proposed by the large electrical corporation may also be included. For each additional KDMM:
	i. Provide a definition, numerical calculation, and units.	i. Provide a definition, numerical calculation, and units.
	ii. Explain each proposed KDMM, including how the KDMM contributes to measuring Ignition Risk and/or Outage Program Risk.	ii. Explain each proposed KDMM, including how the KDMM contributes to measuring Ignition Risk and/or Outage Program Risk.
	iii. Report the proposed KDMMs at the same resolution	iii. Report the proposed KDMMs at the same resolution

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	and frequency as the required KDMMs in all Coversheets and Project Reference Sheets.	and frequency as the required KDMMs in all Coversheets and Project Reference Sheets.
2.7.5: Core Capability 1	The large electrical corporation must demonstrate that its framework can analyze risk reduction of projects in its Portfolio both separately and collectively. For each project the large electrical corporation must conduct a Collective Analysis, a Separate Analysis, and an Ablation Analysis. Each study will report these results at the Portfolio-Level and Project-Level. a. The Collective Analysis describes the risk reduction of a single Undergrounding Project in combination with the rest of the projects that are in the same Portfolio and details the effects on the specific circuit(s) in the project as well as the entire system. It is reported at the Portfolio-Level and Project-Level. b. The Separate Analysis measures the risk reduction of this project if it was the only project in the Portfolio and is reported at the Portfolio-Level and Project-Level. c. The Ablation Study details the effects if this project is NOT included in the Portfolio at both the at the Portfolio-Level and Project-Level. The large electrical corporation must explicitly define any risk-scaling used in these calculations and provide examples of the computation.	The large electrical corporation must demonstrate that its framework can analyze risk reduction of projects in its Portfolio both separately and collectively. For each project the large electrical corporation must conduct a Collective Analysis, a Separate Analysis, and an Ablation Analysis. Each study will report these results at the Portfolio-Level and Project-Level. a. The Collective Analysis describes the risk reduction of a single Undergrounding Project in combination with the rest of the projects that are in the same Portfolio and details the effects on the specific circuit(s) in the project as well as the entire system. It is reported at the Portfolio-Level and Project-Level. b. The Separate Analysis measures the risk reduction of this project if it was the only project in the Portfolio and is reported at the Portfolio-Level and Project-Level. <u>A large electrical corporation may conduct separate, project-level ignition risk reduction and reliability analyses by normalizing and apportioning risk model output across the circuit segment for the purposes for sub-project reporting. The apportionment may be done outside of the risk model.</u> c. The Ablation Study details the effects if this project is NOT included in the Portfolio at both the at the Portfolio-Level and Project-Level. <u>A large electrical</u>

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		corporation must conduct an ablation study showing the ignition risk reduction effects of excluding a project at Portfolio-Level and Project-Level. An ablation study showing the reliability impacts of excluding a project at Portfolio-Level and Project-Level is not required at this time. The large electrical corporation must explicitly define any risk-scaling used in these calculations and provide examples of the computation.
2.7.5: Core Capability 4	The large electrical corporation must detail its method for evaluating Ignition Risk and electrical reliability at future dates and the accumulation of Ignition Risk and Outage Program Risk over time. The large electrical corporation must report instantaneous and cumulative risk and reliability scores at 0, 5, 10, 20, 30, 40, 50, 60 years into the future for all Confirmed Projects. Model Year 0 is defined to begin at the onset of the EUP, and subsequent times are measured from this date. The large electrical corporation must describe how it uses estimated project timelines to model the reduction of risk and increase in reliability. The large electrical corporation must detail how these projections reflect its modeling of climate change. If any discount rate sums are employed in the calculation of any KDMM, the large electrical corporation must list them and explain their origin. If the discount rate sums change over time, the large electrical corporation must explain how they change and why these changes are warranted and must be in line with the CPUC Risk-	The large electrical corporation must detail its method for evaluating Ignition Risk and electrical reliability at future dates and the accumulation of Ignition Risk and Outage Program Risk over time. The large electrical corporation must report instantaneous and cumulative risk and reliability scores at 0, 5, 10, 20, 30, 40, 50, ~~60~~ 55 years into the future for all Confirmed Projects. Model Year 0 is defined to begin at the onset of the EUP, and subsequent times are measured from this date. The large electrical corporation must describe how it uses estimated project timelines to model the reduction of risk and increase in reliability. The large electrical corporation must detail how these projections reflect its modeling of climate change. If any discount rate(s) ~~sums~~ are employed in the calculation of any KDMM, the large electrical corporation must list them and explain their origin. If the discount rate(s) ~~sums~~ change over time, the large electrical corporation must explain how they change and why these changes are warranted and must be in line with the CPUC Risk-

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	based Decision Making Framework Proceeding (Rulemaking R.20-07-013).	based Decision Making Framework Proceeding (Rulemaking R.20-07-013).
2.7.5: Core Capability 5	The large electrical corporation must demonstrate how it ensures that the Risk Modeling Methodology is evaluated with up-to-date information, and that comparisons between projects and alternatives are made on a statistically consistent scale. To do this, the large electrical corporation must develop a system to record Baselines, and historical model calibrations. To establish a Baseline, the large electrical corporation must model the risk landscape assuming that no projects from this program are constructed. This Baseline modeling must include any projects outside of this program that the large electrical corporation plans to undertake. This modeling will attempt to account for climate change. Baselines must be measured and reported at the same cadence as other risk model landscape at 0, 5, 10, 20, 30, 40, 50 and 60 years. Each Baseline must indicate the version of the modeling system, and the model calibration(s) that were used to evaluate it. The Baselines must also indicate the date the Baseline was created, and the naming scheme of the Baselines must be consistent across the lifetime of the EUP. Any comparison of an Undergrounding Project or Alternative Mitigation to a Baseline must indicate what Baseline the comparison is being made to.	The large electrical corporation must demonstrate how it ensures that the Risk Modeling Methodology is evaluated with up-to-date information, and that comparisons between projects and alternatives are made on a statistically consistent scale. To do this, the large electrical corporation must develop a system to record Baselines, and historical model calibrations. To establish a Baseline, the large electrical corporation must model the risk landscape assuming that no projects from this program are constructed. This Baseline modeling must include any projects outside of this program that the large electrical corporation plans to undertake. This modeling will attempt to account for climate change. Baselines must be measured and reported at the same cadence as other risk model landscape at 0, 5, 10, 20, 30, 40, 50 and ~~60~~ 55 years. Each Baseline must indicate the version of the modeling system, and the model calibration(s) that were used to evaluate it. The Baselines must also indicate the date the Baseline was created, and the naming scheme of the Baselines must be consistent across the lifetime of the EUP. Any comparison of an Undergrounding Project or Alternative Mitigation to a Baseline must indicate what Baseline the comparison is being made to.
2.7.5.1	The large electrical corporation must provide a comprehensive list of all model inputs used to compute every metric included in its Model Risk Landscape. This list includes all KDMMs, precursor	The large electrical corporation must provide a ~~comprehensive list of all~~ narrative summary describing model inputs used to compute every metric included in its Model Risk Landscape. This list

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	calculations and any other metric reported in the Project Reference Sheet or Portfolio Coversheet. For each input, the large electrical corporation must formally define the term, and describe the data sources and the purpose of including these factors in the overall Risk Modeling Methodology in a narrative format of at most one page per requirement. At minimum, the model inputs must include: a. Equipment/Assets (e.g. type, age, inspection, maintenance procedure, etc.). b. Topography (e.g. elevation, slope, aspect, etc.) c. Weather (at a minimum this must include statistically extreme conditions based on weather history and seasonal weather) d. Vegetation (e.g. type/class/species/fuel model, canopy height/base height/cover, growth rates, moisture content, inspection, clearance procedures, etc.) e. Climate change (e.g. long-term changes in seasonal weather; statistical extreme weather; impact of change on vegetation species, growth, moisture, etc.) at a minimum, this must include adaptations of historical weather data to current and forecasting future climate. f. Social vulnerability (e.g. socioeconomic factors, etc.) g. Physical vulnerability (e.g. people, structures, critical facilities/infrastructure, etc.)	includes all KDMMs, precursor calculations and any other metric reported in the Project Reference Sheet or Portfolio Coversheet. For each input, the large electrical corporation must formally define the term, and describe the data sources and the purpose of including these factors in the overall Risk Modeling Methodology in a narrative format of at most one page per requirement. At minimum, the model inputs must include: a. Equipment/Assets (e.g. type, age, inspection, maintenance procedure, etc.). b. Topography (e.g. elevation, slope, aspect, etc.) c. Weather (at a minimum this must include statistically extreme conditions based on weather history and seasonal weather) d. Vegetation (e.g. type/class/species/fuel model, canopy height/base height/cover, growth rates, moisture content, inspection, clearance procedures, etc.) e. Climate change (e.g. long-term changes in seasonal weather; statistical extreme weather; impact of change on vegetation species, growth, moisture, etc.) at a minimum, this must include adaptations of historical weather data to current and forecasting future climate. f. Social vulnerability (e.g. socioeconomic factors, etc.) g. Physical vulnerability (e.g. people, structures, critical facilities/infrastructure, etc.)

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	h. Coping capacities (e.g. limited access/egress, etc.)	h. Coping capacities (e.g. limited access/egress, etc.) The large electrical corporation should provide third-party proprietary modeling information, if possible, to Energy Safety on a confidential basis subject to the terms of any contractual limitations on sharing such information.
2.7.6	A project variable modifier is defined as the 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. The large electrical corporation must list its Project Variable Modifiers, explain how the PVMs were calculated, and if and how their use varies in different evaluations of the Model Risk Landscape. Specifically, this encapsulates what input variables to what calculations are changed, and what is the effect on the output variables and KDMMs. The large electrical corporation must describe the formal numerical processes used to arrive at these PVM. If the large electrical corporation employs third-party studies to get to these PVM, it must cite the studies here. If the PVM are the result of internal studies, then the large electrical corporation must describe the datasets, and detail the formal calculations. The large electrical corporation must also make available to Energy Safety the third-party studies and data upon request.	A project variable modifier is defined as the 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. The large electrical corporation must ~~list~~ describe its Project Variable Modifiers, explain in general how the PVMs were calculated, and generally if and how their use varies in different evaluations of the Model Risk Landscape. Specifically, ~~this encapsulates~~ the large electrical corporation should provide a general description summarizing what input variables ~~to what calculations are~~ changed, and what is the general effect on the output variables and KDMMs. The large electrical corporation must provide a high-level description of ~~describe~~ the ~~formal numerical~~ processes used to arrive at these PVM. If the large electrical corporation employs third-party studies to get to these PVM, it must cite the studies here. If the PVM are the result of internal studies, then the large electrical corporation must describe the datasets, and detail the formal calculations. The large

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		electrical corporation must also make available to Energy Safety the third-party studies and data upon request.
2.7.9	The large electrical corporation must set and explain a High-Risk Threshold, Ignition Tail Risk Threshold, High Frequency Outage Program Threshold, and Mitigated Risk Threshold (collectively, Project-Level Thresholds), using a combination of the KDMMs to establish the need for mitigation on a Circuit Segment. a. **High-Risk Threshold** is the Overall Utility Risk level above which a circuit segment is considered eligible for examination for expedited undergrounding. b. **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. c. **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.	The large electrical corporation must set and explain a High-Risk Threshold, Ignition Tail Risk Threshold, High Frequency Outage Program Threshold, and Mitigated Risk Threshold (collectively, Project-Level Thresholds), using a combination of the KDMMs to establish the need for mitigation on a Circuit Segment. a. **High-Risk Threshold** is the <u>Normalized</u> Overall Utility Risk level above which a circuit segment is considered eligible for examination for expedited undergrounding. <u>This threshold is based on a normalized unit of measure across each circuit segment, such as per mile.</u> b. **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. c. **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

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	d. **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.	segments in the entire system by mile and no more than 10% of Outage Program Likelihood by score. d. **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.
2.8	This section contains detailed instructions on how the large electrical corporation will report on its Risk Modeling Methodology, its Portfolio of Undergrounding Projects, individual Undergrounding Projects, development of new models and non-model-based projections. Template files for use by the large electrical corporation will be made available at the e-filing docket at Energy Safety's website.	This section contains detailed instructions on how the large electrical corporation will report on its Risk Modeling Methodology, its Portfolio of Undergrounding Projects, individual Undergrounding Projects, development of new models and non-model-based projections. Template files for use by the large electrical corporation will be made available at the e-filing docket at Energy Safety's website. Where possible, Energy Safety and the CPUC reporting requirements will be streamlined and consistent.
2.8.6.1	The Portfolio Coversheet is a text document which summarizes the macro-level impacts of the EUP. The large electrical corporation must submit the Portfolio Coversheet in Progress Report 0 and each subsequent Progress Report. The content of the Portfolio Coversheet must be updated with the most up-to-date information available in each Progress Report. An example Portfolio Coversheet is provided in Appendix D. The figures and tables in the Portfolio Coversheet will summarize the most important aspects of the risk modeling at the System Level and Portfolio Level, and must be accompanied by a data submission as detailed in Appendix C.	The Portfolio Coversheet is a text document which summarizes the macro-level impacts of the EUP. The large electrical corporation must submit the Portfolio Coversheet in Progress Report 0 and each subsequent Progress Report. The content of the Portfolio Coversheet must be updated with the most up-to-date information available in each Progress Report. An example Portfolio Coversheet is provided in Appendix D. The figures and tables in the Portfolio Coversheet will summarize the most important aspects of the risk modeling at the System Level and Portfolio Level, and must be accompanied by a data submission as detailed in Appendix C.

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	The Portfolio Coversheet must in include a narrative section which details the formal definition and calculations of the Portfolio-Level Thresholds as directed in Section 2.7.8 of these Guidelines. The Portfolio Coversheet must include a narrative of no more than one page explaining why any Circuit Segment in the top 5% of Overall Utility Risk by score was not included in the EUP. The Portfolio Coversheet must include a table showing the instantaneous and cumulative values or scores for each KDMM for 0, 5, 10, 20, 30, 40, 50, and 60 years. The instantaneous values describe the risk at a single moment in time, while the cumulative values indicate the accumulation over a time. Values that do not accumulate over time, such as consequence scores, must be reported as a value at a given time.	The Portfolio Coversheet must in include a narrative section which details the formal definition and calculations of the Portfolio-Level Thresholds as directed in Section 2.7.8 of these Guidelines. The Portfolio Coversheet must include a narrative of no more than one page explaining why any Circuit Segment in the top 5% of Overall Utility Risk by score was not included in the EUP. The Portfolio Coversheet must include a table showing the instantaneous and cumulative values or scores for each KDMM for 0, 5, 10, 20, 30, 40, 50, and ~~60~~ 55 years. The instantaneous values describe the risk at a single moment in time, while the cumulative values indicate the accumulation over a time. Values that do not accumulate over time, such as consequence scores, must be reported as a value at a given time.
2.8.7.2	The large electrical corporation must develop a Project Reference Sheet for each Undergrounding Project. The Project Reference Sheet is a text document which summarizes the Project-Level impacts of the EUP and is supported by the data submission as detailed in Appendix C. Each Project Reference Sheet must be submitted in Progress Report 0 and each subsequent Progress Report. Each Project Reference Sheet must: a. Establish a reduction of risk in a clear and concise manner. b. Display the most recent evaluation. c. Begin with an identification of the isolatable circuit segment,	The large electrical corporation must develop a Project Reference Sheet for each Undergrounding Project. The Project Reference Sheet is a tabular file (submitted in Excel or similar format) ~~text document~~ which summarizes the Project-Level impacts of the EUP and is supported by the data submission as detailed in Appendix C. ~~Each~~ Project Reference Sheet information must be submitted in Progress Report 0 and each subsequent Progress Report. Each Project Reference Sheet must: a. Establish a reduction of risk in a clear and concise manner. b. Display the most recent evaluation.

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	including a summary of its unmitigated risk scores. d. Indicate whether any communications companies or other third parties have equipment on the poles where the circuit is currently located. e. Contain a table reporting all KDMMs and other metrics that would be important to a stakeholder when evaluating a project from a risk-management perspective as detailed in Section 2.8.6 of these Guidelines. f. Contain risk modeling information about comparable alternative mitigations as detailed in Section 2.7.5 of these Guidelines. g. Contain a short narrative section explaining: (i) the selection of the alternative mitigations for comparison for the specific Undergrounding Project; (ii) the selection of undergrounding as the preferred mitigation; and (iv) a timeline of the estimated completion dates. Every figure and table on the Project Reference Sheet must include a caption explaining the figure. The Project Reference Sheet must summarize the most critical metrics that substantiate an Undergrounding Project. These metrics include, but are not limited to, all the KDMMs, cost-benefit calculations as well as additional supporting metrics that the large electrical corporation intends to use to justify the project. The Project Reference Sheet must also show the same metrics for at least two comparable alternative mitigations and the Baseline values using the same model version and calibration. The large electrical corporation must summarize its evaluation of	c. Begin with an identification of the isolatable circuit segment, including a summary of its unmitigated risk scores. d. Indicate whether any communications companies or other third parties have equipment on the poles where the circuit is currently located. <u>Required information is limited to third-party equipment on poles where the electrical corporation has a lease or agreement with the owner of that equipment, or the information is otherwise available to the electrical corporation.</u> e. Contain a table reporting all KDMMs and other metrics that would be important to a stakeholder when evaluating a project from a risk-management perspective as detailed in Section 2.8.6 of these Guidelines. f. Contain risk modeling information about comparable alternative mitigations as detailed in Section 2.7.5 of these Guidelines. g. Contain a short narrative section explaining: (i) the selection of the alternative mitigations for comparison for the specific Undergrounding Project; (ii) the selection of undergrounding as the preferred mitigation; and (iv) a timeline of the estimated completion dates. Every figure and table on the Project Reference Sheet must include a caption explaining the figure. The Project Reference Sheet must summarize the most critical metrics that substantiate an Undergrounding Project. These metrics include, but are not limited to, all the KDMMs, cost-benefit calculations as well as additional supporting metrics that the large electrical corporation intends to use to justify the

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	the project, referencing only metrics reported in data submission. This table must contain a description of the work type and alternative mitigations, an indication of whether the project meets the appropriate Project-Level standard, and all the KDMMs. Additional Model Risk Landscape metrics can be added to these tables to justify the work. If the project has passed Screen 2 (Project Information and Alternative Mitigation Comparison), the table must also include costs, benefits and the information for the CPUC CBR. The benefits calculation should be separated into safety, reliability, and financial contributors as defined in CPUC Decision 22-12-027. The narrative evaluation of the project is limited to one page. At the same time as the submission of the Project Reference Sheets, the large electrical corporation must submit a detailed data submission pursuant to Appendix C. An example Project Reference Sheet is presented in Appendix E. The numbers in the tables presented there are for illustrative purposes only.	project. The Project Reference Sheet must also show the same metrics for at least two comparable alternative mitigations and the Baseline values using the same model version and calibration. The large electrical corporation must summarize its evaluation of the project, referencing only metrics reported in data submission. This table must contain a description of the work type and alternative mitigations, an indication of whether the project meets the appropriate Project-Level standard, and all the KDMMs. Additional Model Risk Landscape metrics can be added to these tables to justify the work. If the project has passed Screen 2 (Project Information and Alternative Mitigation Comparison), the table must also include costs, benefits and the information for the CPUC CBR. The benefits calculation should be separated into safety, reliability, and financial contributors as defined in CPUC Decision 22-12-027. The narrative evaluation of the project is limited to <u>the equivalent of</u> one page. At the same time as the submission of the Project Reference Sheets, the large electrical corporation must submit a detailed data submission pursuant to Appendix C. An example Project Reference Sheet is presented in Appendix E. The numbers in the tables presented there are for illustrative purposes only.
3.1.2	Ten business days prior to transmitting an EUP to Energy Safety for pre-submission review, the large electrical corporations must notify Energy Safety of its intent to submit an EUP for a pre-	Ten business days prior to transmitting an EUP to Energy Safety for pre-submission review, the large electrical corporations must notify Energy Safety of its intent to submit an EUP for a pre-

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	submission review by sending a letter to the Deputy Director and an e-mail to ElectricalUndergroundingPlans@energysafety.ca.gov. After notifying Energy Safety that it will be submitting an EUP for a pre-submission review, the large electrical corporation is required to meet and confer with Energy Safety staff to discuss the contents of the forthcoming EUP pre-submission. Energy Safety uses the Pre-Submission Checklist below to confirm that all content required by section 8388.5 and these Guidelines is included and that each item appropriately cross-references the relevant section(s)/ or sub-section(s) of the EUP. If information for an item on the Pre-Submission Checklist is not included in the EUP pre-submission, Energy Safety marks this element as incomplete. The Pre-Submission Checklist includes the following. a. The EUP has provided a narrative for each section and sub-section in the EUP. If the EUP contains a blank section, an inapplicable cross reference, or insufficient detail, Energy Safety marks this element incomplete. b. The EUP has addressed all components of the EUP that have been identified in section 8388.5(c). c. The EUP has addressed the requirements outlined in section 8388.5(d)(2). d. The EUP has addressed the requirements related to the inclusion of a Project Acceptance Framework. e. The EUP includes the objectives and targets developed	submission review by sending a letter to the Deputy Director and an e-mail to ElectricalUndergroundingPlans@energysafety.ca.gov. The large electrical corporation will submit its EUP as a confidential document to Energy Safety for pre-submission review. After notifying Energy Safety that it will be submitting an EUP for a pre-submission review, the large electrical corporation is required to meet and confer with Energy Safety staff to discuss the contents of the forthcoming EUP pre-submission. Energy Safety uses the Pre-Submission Checklist below to confirm that all content required by section 8388.5 and these Guidelines is included and that each item appropriately cross-references the relevant section(s)/ or sub-section(s) of the EUP. If information for an item on the Pre-Submission Checklist is not included in the EUP pre-submission, Energy Safety marks this element as incomplete. Energy Safety will complete the pre-submission review not more than 10 days after receiving a large electrical corporation's EUP. The Pre-Submission Checklist includes the following. a. The EUP has provided a narrative for each section and sub-section in the EUP. If the EUP contains a blank section, an inapplicable cross reference, or insufficient detail, Energy Safety marks this element incomplete. b. The EUP has addressed all components of the EUP that

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	by the large electrical corporation for tracking and evaluation purposes. f. The EUP has included the list of Undergrounding Projects. g. The EUP has responded to requirements related to data and modeling submissions, including model versioning and calibration. h. The EUP has submitted all required Project Reference Sheets and Portfolio Coversheets. i. The large electrical corporation must include a pre-submission review cover sheet that documents the page number(s) of where each component of the pre- submission checklist can be found in the submitted EUP. The pre-submission review cover sheet may not reference internal cross-references and must reference the direct page number. Energy Safety makes a determination and informs the large electrical corporation of its findings. a. If a large electrical corporation's EUP satisfies the pre-submission review, Energy Safety will instruct the large electrical corporation to submit its EUP as-is, with no changes. b. If a large electrical corporation's EUP does not satisfy the pre-submission review, Energy Safety will notify the large electrical corporation as to the missing or incomplete information (i.e., incomplete, not fully referenced, or unsubstantiated statutory compliance checklist). After Energy Safety affirms that the pre-submission contains the required contents, Energy Safety will open a docket for the EUP,	have been identified in section 8388.5(c). c. The EUP has addressed the requirements outlined in section 8388.5(d)(2). d. The EUP has addressed the requirements related to the inclusion of a Project Acceptance Framework. e. The EUP includes the objectives and targets developed by the large electrical corporation for tracking and evaluation purposes. f. The EUP has included the list of Undergrounding Projects. g. The EUP has responded to requirements related to data and modeling submissions, including model versioning and calibration. h. The EUP has submitted all required Project Reference Sheets and Portfolio Coversheets. i. The large electrical corporation must include a pre-submission review cover sheet that documents the page number(s) of where each component of the pre- submission checklist can be found in the submitted EUP. The pre-submission review cover sheet may not reference internal cross-references and must reference the direct page number. Energy Safety makes a determination and informs the large electrical corporation of its findings.

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	and the large electrical corporation can submit the EUP for evaluation. Energy Safety will not accept public comments on the pre-submission review.	c. If a large electrical corporation's EUP satisfies the pre-submission review, Energy Safety will instruct the large electrical corporation to submit its EUP as-is, with no changes. d. If a large electrical corporation's EUP does not satisfy the pre-submission review, Energy Safety will notify the large electrical corporation as to the missing or incomplete information (i.e., incomplete, not fully referenced, or unsubstantiated statutory compliance checklist). After Energy Safety affirms that the pre-submission contains the required contents, Energy Safety will open a docket for the EUP, and the large electrical corporation can submit the EUP for evaluation. Energy Safety will not accept public comments on the pre-submission review.
3.5.2	The Modification Notice process is set forth as follows: a. Energy Safety determines a large electrical corporation's EUP contains one or more deficiencies that warrant a Modification Notice. b. Energy Safety issues a Modification Notice to the large electrical corporation. The Modification Notice will contain a list of deficiencies the large electrical corporation must address in its Modification Notice Response and applicable schedule or updates to existing schedule. c. Pursuant to the applicable schedule, the large electrical	The Modification Notice process is set forth as follows: a. Energy Safety determines a large electrical corporation's EUP contains one or more deficiencies that warrant a Modification Notice. b. Energy Safety issues a Modification Notice to the large electrical corporation. The Modification Notice will contain a list of deficiencies the large electrical corporation must address in its Modification Notice Response and

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	corporation must resubmit its entire EUP or sections therein, in a redline copy and a clean copy, as directed by the Modification Notice, and provide written responses to each issue delineated in the Modification Notice (Modification Notice Response). d. If Energy Safety issues a Decision approving the large electrical corporation's EUP after issuing one or more Modification Notice, the large electrical corporation must submit to the docket a final version of the EUP that includes changes resulting from all Modification Notices, no later than 10 days after the decision issued. This final version must also include previously submitted errata, as discussed in Section 3.4 of these Guidelines, but must not include any other changes, unless otherwise directed by Energy Safety.	applicable schedule or updates to existing schedule. c. Pursuant to the applicable schedule, the large electrical corporation must resubmit its entire EUP or sections therein, in a redline copy and a clean copy, as directed by the Modification Notice, and provide written responses to each issue delineated in the Modification Notice (Modification Notice Response). d. If Energy Safety issues a Decision approving the large electrical corporation's EUP after issuing one or more Modification Notice, the large electrical corporation must submit to the docket a final version of the EUP that includes changes resulting from all Modification Notices, no later than 10 days after the decision issued. This final version must also include previously submitted errata, as discussed in Section 3.4 of these Guidelines, but must not include any other changes, unless otherwise directed by Energy Safety. <u>Energy Safety and the large electrical corporation will work together to develop a reasonable schedule for responding to a Modification Notice depending on the type and number of issues that must be addressed and allowing time to ensure the updated document(s) meet the accessibility requirements set forth in the draft guidelines.</u>
3.7.2.2	The following applies to data requests from Data Request	The following applies to data requests from Data Request

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	Stakeholders: a. Data Request Stakeholders may issue data requests to a large electrical corporation beginning on the date on which the large electrical corporation submitted its complete EUP and ending when Energy Safety has issued a decision. b. A large electrical corporation must respond to all stakeholder data requests within three-business days of the request, unless a different response period is mutually agreed upon by the stakeholder making the data request and the large electrical corporation. c. Extension Requests i. Prior to seeking an extension from Energy Safety to respond to a data request, a large electrical corporation must first make a good-faith effort to ask the stakeholder making the request to agree to the extension. ii. If a large electrical corporation cannot reach an agreement with the stakeholder making the request, the large electrical corporation must request an extension by sending an extension request to ElectricalUndergroundingPlans@energysafety.ca.gov. iii. An extension request must include: • A showing of a good-faith effort by the large electrical corporation to ask the stakeholder to agree to the extension and the result of such effort, • The data request or portion of the data	Stakeholders: a. Data Request Stakeholders may issue data requests to a large electrical corporation beginning on the date on which the large electrical corporation submitted its complete EUP and ending when Energy Safety has issued a decision. b. A large electrical corporation must respond to all stakeholder data requests within ~~three~~ five-business days of the request, unless a different response period is mutually agreed upon by the stakeholder making the data request and the large electrical corporation. c. Extension Requests i. Prior to seeking an extension from Energy Safety to respond to a data request, a large electrical corporation must first make a good-faith effort to ask the stakeholder making the request to agree to the extension. ii. If a large electrical corporation cannot reach an agreement with the stakeholder making the request, the large electrical corporation must request an extension by sending an extension request to ElectricalUndergroundingPlans@energysafety.ca.gov. iii. An extension request must include:

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	request requiring an extension, • Good cause for the extension, and • A proposed date of response in lieu of the original deadline. iv. Any extension request must be received by Energy Safet by 5:00 p.m. Pacific time one business day prior to the date the data request response is due.	• A showing of a good-faith effort by the large electrical corporation to ask the stakeholder to agree to the extension and the result of such effort, • The data request or portion of the data request requiring an extension, • Good cause for the extension, and • A proposed date of response in lieu of the original deadline. iv. Any extension request must be received by Energy Safet by 5:00 p.m. Pacific time one business day prior to the date the data request response is due.
Appendix A	**"High-Risk Threshold"** means the Overall Utility Risk level above which a Circuit Segment is considered eligible for examination for expedited undergrounding. **"Outage Program Likelihood"** is the likelihood of a large electrical corporation utilizing an Outage Program given a probabilistic set of environmental conditions. **"Undergrounding"** means actions taken to convert overhead electrical lines and/or equipment to underground electrical lines and/or equipment (i.e., located underground and in accordance with GO 128). Undergrounding does not include microgrids.	**"High-Risk Threshold"** means the Normalized Overall Utility Risk level above which a circuit segment is considered eligible for examination for expedited undergrounding. This threshold is based on a normalized unit of measure across each circuit segment, such as per mile. **"Hybrid Distribution Hardening"** means a sub-project that consists of at least 80 percent undergrounding and up to 20 percent overhead covered conductor or up to 20 percent line removal with remote grid. **"Outage Program Likelihood"** is the likelihood of a large electrical corporation utilizing an Outage Program given a

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		~~probabilistic~~ historic set of environmental conditions. **"Sub-Project"** is the product of dividing a circuit segment that has passed Screen 3 (Project Risk Analysis) into smaller projects for construction. **"Undergrounding"** means actions taken to convert overhead electrical lines and/or equipment to underground electrical lines and/or equipment (i.e., located underground and in accordance with GO 128). ~~Undergrounding does not include microgrids.~~ Undergrounding projects can include hybrid distribution hardening work.
Appendix C.4	The large electrical corporation must report its geospatial data in accordance with the data schema provided herein.	The large electrical corporation must report its geospatial data in accordance with the data schema provided herein. The large electrical corporation may provide GIS data, or other file types, such as KMZ or other readily available file types, or combinations of file types, in order to satisfy the different data requirements set forth in Appendix C.
C.4.2	The large electrical corporation must report some overhead assets other than conductor identified for removal/undergrounding: capacitor banks, fuses, switches/reclosers, and transformers.	The large electrical corporation must report some overhead assets other than conductor identified removal/undergrounding: capacitor banks, fuses, switches/reclosers, and transformers. A large electrical corporation may exclude data or combinations of data that is considered confidential.

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Notes: (A) Energy Safety clarified the non-EUP reporting requirements during the May 22, 2024 Question and Answer Session (slide 11).		