Public Advocates Office Data Request

No. CalAdvocates-BVES-2023WMP-09
Proceeding: 2023-2025 Wildfire Mitigation Plans

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DATA REQUEST

The following questions relate to your 2023-2025 WMP submission.

Question 1
Page 86 of BVES's 2023-2025 WMP states, "BVES utilizes a 7x7 log score matrix to determine an impact risk score for each weighted scoring input in the Risk Register."
a) Please provide the log score matrix as referenced in your WMP.

b) Please provide work papers where this matrix is used on the seven circuits with the highest risk ratings in your service area.

c) For each circuit in part b, please provide the following: i. mitigation activities considered.

ii. risk reduction/risk benefit estimates.

iii. equivalent annual cost for each mitigation activity.

iv. RSE for each mitigation activity.

Response:
a) See attached file "BVES Risk Log Score Matrix".

b) The matrix is used in determining the overall system risk via the risk-based decision making Risk-Based Decision-Making Framework in accordance with the approach for Small and Multi-Jurisdictional Utilities (SMJU) in CPUC D. 19-04-020. The matrix is not applied at individual circuits. Therefore, there are no work papers "where this matrix is used on the seven circuits with the highest risk ratings in your service area."

c) Table 7-4 Summary of Risk Reduction for Top-Risk Circuits utilizes the Fire Safety Matrix, as described in BVES's WMP, provides the information for 1.c).i and 1.c).ii.

iii. & iv. BVES does not disaggregate the cost and RSEs for individual circuits nor does it have the ability to do so unless a specific project is only dedicated to a specific circuit. RSEs are calculated using the Wildfire Risk – Public Safety scenario Risk-Based Decision-Making Framework in accordance with the approach for Small and Multi-Jurisdictional Utilities (SMJU) in CPUC D. 19-04-020. The risk units from this model are used for calculating RSEs. The Fire Safety Matrix is not used for RSE calculations.

For the Radford Circuit the risk reduction is driven by the Radford Line Replacement Project (Covered Conductor & Fire Resistant Poles) for a cost of $6,200,347. The RSE for this initiative is 0.15.

For the other six circuits in the top seven highest risk circuits, the cost of the Covered Conductor & Pole Assessment and Hardening initiative, which is the primary driver for risk reduction of the six circuits, is $6,836,715 and the RSE value is 0.16.

Question 2
Please refer to Table 7-1 and Table 7-4 of BVES's 2023-2025 WMP on p. 105-106 for the following questions.
a) Please explain how the projected risk for the Radford circuit is expected to decrease from 31215 to 522 in 2023, a 98% reduction.

b) Please explain how the projected risk for the Shay circuit is expected to decrease from 3524 to 0 in 2023, a 100% reduction.

c) Please provide any relevant work papers to explain how the risk scores were calculated for parts a and b above.

Response:

2. General: The risk reductions described are those from BVES's Fire Safety Matrix. In order to implement a method to assess risk at the circuit level and prioritize initiatives on the BVES sub-transmission and distribution system, BVES implemented the Fire Safety Circuit Matrix. This rudimentary model determines circuit level risk under current and planned mitigation activities intended to reduce ignition potential. The purpose of the Fire Safety Circuit Matrix model is to assist as a planning tool in determining a circuit level risk that accounts for the current and planned mitigation activities that intend to reduce ignition potential. The Fire Safety Circuit Matrix was utilized to inform the planning period of the WMP considering changes to the risk profile as mitigations are executed over time. Outputs (mitigations and controls) from the risk-based decision-making approach are integrated in the Fire Safety Circuit Matrix to establish where and in what sequence the mitigations or controls should be applied to the sub-transmission and distribution systems. BVES updates this model on a semi-annual basis as initiative targets are reviewed and revisited for the following year. The model was improved to use historical weather data and vegetation density (based on Light Detection and Ranging (LiDAR) surveys) in order to determine the risk of wildfire and reduce reliance on SME evaluation.

As discussed in its WMP (Section 1.1. Item #1), BVES is transitioning to utilize the asset risk analysis will utilize Technosylva's Wildfire Risk Reduction Model (WRRM) which uses historical climatology (weather & fuel moisture data) as key input weather scenarios (~ 30 year and 2 km hourly reanalysis data). The model produces risk metrics by running fire spread simulations for each weather scenario territory wide. The outputs can be aggregated based on percentile and assigned to assets. The model uses historical or predicted fuels data (2030 etc.) and utilizes hundreds of millions of fire spread simulations across the customer service territory. The outputs are to be used to support mitigation planning in addition to setting context for daily FireCast asset risk forecasts. It is BVES's intent to transition from using the Fire Matrix to use the WRRM to prioritize its WMP initiatives. The first runs of the WRRM were not completed in time to inform the 2023 WMP grid hardening work plan, since much of the planning had to occur in the summer of 2022 so that design specifications could be identified sufficiently in advance due to the long procurement supply chain process that all utilities are currently experiencing. Initial WRRM results became available to BVES in late February 2023. Therefore, the WRRM will be used in the 2024 and 2025 WMP Updates. BVES believes that replacing the Fire Matrix with the WRRM will provide a probabilistic model and the level of granularity will eventually shift from the circuit level to the segment or span level. The model will provide calculated probability, consequence, and risk.

2.a) This risk reduction on the Radford Line, is calculated by the Fire Safety Matrix, which is a simple rudimentary risk model, and is driven by BVES accomplishing the Radford Line replacement project, which includes installation of covered conductors and fire resistant poles. A score of 522, simply means the circuit has been hardened sufficiently to be considered low risk relative to BVES's other circuits.

2.b) This risk reduction on the Shay Line, is calculated by the Fire Safety Matrix, which is a simple rudimentary risk model, and is driven by BVES accomplishing the significant installation of covered conductors on the Shay Circuit. A score of 0, simply means the circuit has been hardened sufficiently to be considered low risk relative to BVES's other circuits. BVES recognizes that "0" risk is not possible but near "0" is. The output of "0" is purely a limitation of the Fire Safety Matrix and that is one of the reasons BVES is transitioning to the WRRM.

2.c) See attached file “FireSafetyCircuitMatrix 2023-1-10”.

Question 3

In Table 8 of the Joint IOU Covered Conductor Working Group Report, BVES reported that it does not utilize “fast curve settings.”

Page 165 of BVES’s 2023-2025 WMP states, “In order to ensure that the BVES protective system is properly coordinated with SCE’s protective system, BVES’s protective curve settings are always set to the fast trip settings. Additionally, for over 20 years, it is BVES’s policy to use the fast trip curve setting on all devices due to BVES’s location within high fire risk areas.”

a) Please describe the “fast trip” settings BVES mentioned in its WMP.

b) How are BVES’s “fast trip” settings similar or different to those utilized by SCE?

c) Please describe the weather conditions or time period(s) during which BVES enables “fast trip” settings.

d) Does your response to part c vary by circuit? (In other words, does BVES use “fast trip” settings differently on individual circuits?) If so, please explain.

e) In 2021, on how many days did BVES enable “fast trip” settings?

f) In 2022, on how many days did BVES enable “fast trip” settings?

g) Please explain why BVES said it did not utilize fast curve settings in the Joint IOU Covered Conductor Working Group Report.

Response a) b) c) d) e) f) & g)

The fast trip setting that BVES is referring to, are the “fast curve” setting provided by the equipment manufacturer for each applicable device (manufacturers provide a series of trip curves for each device).

The BVES 34.5kV sub-transmission system is fed by Southern California Edison’s (SCE) sub-transmission systems at 34.5kV at two delivery points. In order to ensure that the BVES protective system is properly coordinated with SCE’s protective system, BVES’s protective curve settings are always set to the fast trip settings. This coordination is carried through onto the distribution system as well by design. BVES’s 4 kV distribution feeders protective setting are coordinated with BVES 34 kV sub-transmission feeders and SCE devices; therefore BVES’s 4 kV feeders are kept in the fast curve trip settings.

It is important for system stability that BVES devices trip first (before SCE devices trip) if a fault occurs in the BVES system to avoid the SCE devices from tripping, which could result in a loss of supplies to the entire service area.

BVES is not in a position to compare its fast curve trip settings with SCE’s fast curve trip settings.

BVES’s devices are always selected to the fast curve. BVES does not change trip curve settings based on the weather or seasons. All of BVES’s circuits have the applicable devices set to the fast curve trip settings.

For 2021, all devices we selected to the fast curve trip settings for the entire year.

For 2022, all devices we selected to the fast curve trip settings for the entire year.

Other utilities change protective curve settings during different seasons and use the term “fast curve settings”. In the Joint Covered Conductor Working Group Report, BVES said it does not utilize fast curve setting since it utilizes the same protective setting (which is fast curve) throughout the year. It would have been more appropriate to have stated that BVES does not change settings according to the seasons.