

Public Advocates Office Data Request
No. CalAdvocates-BVES-2023WMP-10
Proceeding: 2023-2025 Wildfire Mitigation Plans

Date of issuance: Wednesday, May 31, 2023
Responses due: Monday, June 5, 2023

From: Holly Wehrman
Senior Utilities Engineer
Public Advocates Office

Phone: (415) 696-7319
Email: Holly.Wehrman@cpuc.ca.gov

Franky Lao
Senior Utilities Engineer
Public Advocate Office

Phone: (916) 210-1832
Email: Franky.Lao@cpuc.ca.gov

Carolyn Chen
Attorney
Public Advocates Office

Phone: (415) 703-1980
Email: Carolyn.Chen@cpuc.ca.gov

Marybelle Ang
Attorney
Public Advocates Office

Phone: (415) 696-7329
Email: Marybelle.Ang@cpuc.ca.gov

Cal Advocates Wildfire Discovery

Email: CalAdvocates.WildfireDiscovery@cpuc.ca.gov

DATA REQUEST

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

Question 1

Pages 127-128 of BVES's 2023-2025 WMP state the following regarding covered conductor: BVES believes that the estimate of effectiveness on ignition risk drivers in its service territory is approximately 90%. For comparison, the SCE estimated full deployment of covered conductor in high-risk areas to mitigate approximately 60 percent of fires associated with electrical distribution facilities in defined risk tiers. BVES believes SCE's effectiveness results are a valid, relative measure of effectiveness of this technology, with underground conversion providing the baseline (100 percent) for purposes of our comparison.

- a) Please state the basis for BVES's belief that the effectiveness of covered conductor implementation is 90 percent.
- b) Please explain why BVES does not use an estimated effectiveness of 60 percent despite stating that it believes SCE's effectiveness results are valid.

Response:

1.a) For Covered Conductor cable, BVES utilizes Priority Wire for Flame Resistant (FR) Covered Conductor cable (refer to 1000-35-FR-BVE Spacer Cable RO51721 SS). Priority Wire estimates the Covered Conductor effectiveness to be greater than 90 percent.

Per the specification: "Flame Resistant Covered Conductor/Spacer Cable is designed for use in primary and secondary overhead distribution where there is limited space available for rights of way, and where fire hazards are concerns. In case tree limbs or other objects come in contact with conductors, the flame resistant outer covering will effectively prevent direct shorts and instantaneous flashovers. The insulating properties of the covering layers allow for the cable system to be bundled into a compact area. The resulting close-proximity configuration minimizes the amount of space and hardware required for line installation effectively solving most right-of-way-problems. In case of a fire, the flame resistant wire will eliminate the spread of fires along transmission lines, which reduces the secondary fires caused by the propagation and dripping flaming material."

BVES's lines that have covered conductor installed have not experienced a single outage caused due to an event that could lead to an ignition (e.g., contact with vegetation, avian contact, phase to phase contact, wire down, etc.). Even with multiple tree limb contacts, and a car accident that completely destroyed a pole causing phase to phase contact, lines with covered conductors did not experience and outage or ignition.

1.b) BVES understands that SCE Covered Conductor covered conductor program covers a larger mix of designs and line voltages. BVES is not in a position to comment on SCE's covered conductor program and its effectiveness.

Question 2

On p. 91 of BVES's 2023-2025 WMP, BVES states it has no significant accessibility issues. However on p. 128, BVES states, "The (Radford) line is in a densely vegetated area that is difficult to patrol, due to no road access."

- a) Given that the Radford line is currently the circuit with the highest risk rating in BVES service territory, why is this not considered an accessibility issue?
- b) How does BVES currently inspect the Radford circuit?
- c) How does BVES perform maintenance on the Radford circuit?
- d) How does BVES plan to inspect and maintain the Radford circuit after installing covered conductor?

Response:

2. a) The Radford Line is unique to the BVES system and represents less than 1.5% of BVES's overhead system. Therefore, BVES stands by its generalized statement that "it has no significant accessibility issues."
2. b) Foot patrol, detailed inspection (by foot), UAV photography/videography, UAV thermography, and UAV LiDAR.
2. c) Line crews drive as far as the access roads permit and then they hike to the points of maintenance. Line crews are trained to climb poles and perform maintenance on overhead systems.
2. d) Foot patrol, detailed inspection (by foot), UAV photography/videography, UAV thermography, and UAV LiDAR. Because the Radford Line Replacement Project includes installing a fiber optic communications line, BVES will likely consider installing remote cameras and other sensors to monitor the circuit.

Question 3

On p. 137 of BVES's 2023-2025 WMP, BVES states that the Substation Automation Project will allow it to "remotely and rapidly de-energize a circuit when the circuit is determined to be at high risk of causing an ignition."

- a) Please provide clarification on BVES's definition of "high risk of causing an ignition."
- b) Please clearly define BVES's conditions for re-energization.

Response:

- 3.a) BVES does not have a formal definition to provide CalAdvocates. However, the following events are examples of what BVES considers "high risk of causing an ignition": live wire down, short circuits, phase to phase, contact with vegetation or other objects or animals, electrical overloading, arcing, catastrophic failure of facilities (pole failure, pad mounted equipment knocked off pad, etc.), etc.
- 3.b) BVES will re-energize a system once repairs/corrective action is satisfactorily completed and the supervisor of the work is satisfied that it is safe to re-energized the system. Additionally, on moderate and high risk days as defined by the National Danger Fire Rating System, a patrol of the affected circuit is also required prior to re-energizing the system.

Question 4

With regards to GD_13 Fault Isolation Localization and Service Restoration, discussed on page 138 of BVES's 2023-2025 WMP,

- a) Does BVES have a response time metric that is currently used to track response times to faults?
- b) If the answer to part (a) is yes, does BVES have a quantitative estimate of how its general automation programs, including Fault Isolation Localization, will impact this metric?
- c) If the answer to part (a) is no, does BVES plan to begin tracking response times to faults? Please explain why or why not.

Response:

- 4.a) No. BVES does not track individual response times. BVES tracks outage duration and calculates Customer Average Interruption Duration Index (CAIDI) on an annual basis. CAIDI indicates the average time required to restore service during a predefined period of time.
- 4.b) Not applicable.
- 4.c) No. Currently, BVES does not see the value in collecting "response-time metric" is worth the cost.

Question 5

On p. 141 of BVES's 2023-2025 WMP, BVES states the following:

BVES estimates that the remaining 563 tree attachments will be removed by the end of 2026. BVES is executing this initiative across the entire distribution system prioritized based on risk and accessibility (permitting). BVES plans to remove approximately 100 tree attachments per year.

BVES's stated tree attachment removal rate would result in the removal of only about 400 tree attachments, out of 563, by the end of 2026. Please explain how BVES intends to address the remaining tree attachments.

Response:

The effort to remove tree attachments may need to go beyond 2026. This WMP covers the period from 2023 to 2025. During this period, BVES will determine if it is able to exceed the target of 100 per year. In updates to the WMP, BVES will adjust its projections on tree attachment removals.

Question 6

a) During the period from 2020-2022, has BVES experienced any risk events (as used in Table 5 of the quarterly data reports) that it has linked to an open inspection finding?

b) During the period from 2020-2022, has BVES experienced any risk events (as used in Table 5 of the quarterly data reports) that it linked to issues that were missed during normal inspections?

Response:

6.a) No risk events between 2020-2022 have been linked to open inspection findings.

6.b. No risk events between 2020-2022 have been linked to issues that were missed during normal inspections.

Question 7

On p. 151 of BVES's 2023-2025 WMP, BVES states that it does inspections to "determine when a transformer is nearing its end of life so it can be scheduled for replacement."

a) Please define BVES's criteria for when a transformer is "nearing its end of life".

b) Does BVES have a hard age limit of when it replaces transformers, regardless of performance or condition?

Response:

7.a) BVES hires a contractor to perform substation testing on a four year testing cycle. As part of the substation testing, the following tests on transformers are performed: Visually inspection, transformer turn ratio, winding resistance, insulation resistance, power factor, polarization, dissolved gas analysis and insulating fluid evaluation. After testing, the contractor provides the results and recommendations on transformer life expectancy and maintenance.

7.b) No.

Question 8

Table 8-50 on p. 336 of BVES's 2023-2025 WMP indicates that there are no plans to address the gaps and limitations in Public Emergency Communication.

a) Please provide details and updates on any plans to address these gaps.

b) If there are no current plans, please provide an estimated timeline of when BVES expects to have plans to address these gaps.

Response:

8.a) The remedial action plans have not be developed yet.

8.b) BVES expects to have action plans in place by the end of 2023.

Question 9

On p. 363 of BVES's 2023-2025 WMP, BVES states the following:

BVES currently does not have a wire down detection program, nor does it have a timeline to procure one. As solutions are developed in this space, BVES will look to collaborate with other utilities on the effectiveness of their programs.

- a) How does BVES currently detect wire down events?
- b) In 2022, what was BVES's average time to detect and respond to a wire down event?
- c) In 2022, what was BVES's maximum time to detect and respond to a wire down event?

Response:

- 9.a) Wire down events are generally detected by protective equipment opening automatically. If the protective equipment does not open, BVES will receive reports of de-energized customers and/or wire down reports as is standard in the electric utility industry.
- 9.b) BVES does not collect average time to detect and respond to a wire down event; therefore, this information is not available.
- 9.c) BVES does not collect average time to detect and respond to a wire down event; therefore, this information is not available.

Question 10

On pages 134-135, BVES states that initiative GD_10 will "mitigate the potential of ignitions by removing the need to expand sub-transmission supply lines to Bear Valley's service area, which may cause wildfires with catastrophic loss of life and enormous loss of property."

- a) If BVES were not to construct its energy storage and solar energy project (GD_10), how many miles of new sub-transmission supply lines would BVES require?
- b) Over what period would the sub-transmission lines described in part (a) be constructed?
- c) Assuming that constructing or upgrading sub-transmission supply lines is the alternative to initiative GD_10, has BVES performed design work, feasibility studies, or cost estimates to better understand this alternative?
- d) If the answer to part (c) is yes, please explain what types of such work BVES has conducted and the current status of this work.

Response:

- 10.a) When BVES referred to expanding the sub-transmission lines, it was referring to expanding the lines in terms of capacity not circuit miles. Therefore, there would be 0 circuit miles of new sub-transmission lines. The sub-transmission lines are owned and operated by Southern California Edison (SCE). Currently, these lines do reach maximum capacity.
- 10.b) Because these lines go through the U.S. Forest Service, just the permitting process that SCE would need to conduct would be at least 3-4 years. The expansion would probably be conducted in 5-6 years. The Energy Storage Project could easily be executed within 1-2 years.
- 10.c) No.
- 10.d) Not applicable.

Question 11

In response to data request CalAdvocates-BVES-2023WMP-08, question 1, BVES provided a list of outages related to equipment failure from 2020-2022. This list indicates that BVES experienced 12 unique outages on overhead conductor, six of which were related to transformer failure.

- a) Has BVES investigated why transformer failure appears to be a significant contributor to outages on overhead lines?
- b) If the answer to part (a) is yes, please describe BVES's conclusions.
- c) If the answer to part (a) is no, please explain why not.
- d) What is the average age of transformers on overhead circuits in BVES's system?

Response:

11.a) BVES has not conducted any investigation into transformer failures in its service territory. The outages were associated with lightening strikes.

11.b) N/A

11.c) Over the last three years BVES is only averaging two overhead transformers caused outages annually. Additionally, the overhead transformer outages are very small, only affecting about 20 customer per outage.

11.d) BVES does not have historic records of overhead transformers in the field. BVES now keeping tracks of the new overhead transformers that is being installed. When BVES is replacing a pole that has overhead transformer(s), BVES would replace the existing overhead transformer(s) with a new transformer(s).

Question 12

In response to data request CalAdvocates-BVES-2023WMP-07, question 6, BVES states that it experienced a system-wide outage in November 2022 due to high winds.

- a) Please provide the duration of this system-wide outage.
- b) Please describe the specific cause of the outage, to the best of your current knowledge.

Response:

12.a) At 17:05 on November 8, 2022, BVES lost power with both of the SCE power feed lines causing a system-wide outage. At 21:45 on November 8, 2022, power from both of the SCE feed lines was restored.

12.b) The outage was caused by damage to the SCE feed lines as a result of extreme wind conditions.

Question 13

In response to the Area for Continued Improvement BVES-22-14 in Appendix D of BVES's WMP, BVES provided a table with the results of pole stress analysis. This table reports that 29 poles had a safety factor < 1.0, and 292 poles had a safety factor higher than 1.0 but below 2.0.

- a) What timeframe is covered by this data? For example, were all stress analyses performed in 2022?
- b) When does BVES anticipate it will replace or reinforce the 49 poles with a safety factor below 1?
- c) When does BVES anticipate it will replace or reinforce the 292 poles with a safety factor between 1 and 2?
- d) Please state any actions BVES has taken so far to minimize the risk of pole failure prior to the completion dates discussed in parts (a) and (b).
- e) Please state any actions BVES plans to take in 2023 to minimize the risk of pole failure prior to the completion dates discussed in parts (a) and (b).

Response:

13.a) The time frame of pole stress analysis was from June 2019 to September of 2022.

13.b) BVES follows the guideline of GO-95 and BVES completes pole replacement within 1 year of the pole stress analyses being performed.

13.c) BVES follows the guideline of GO-95 and BVES completes pole replacement within 1 year of pole stress analyses being performed.

13.d) N/A

13.e) N/A

Question 14

In response to the Area for Continued Improvement BVES-22-14 in Appendix D of BVES's WMP, BVES provided a table with the results of pole inspections. This table reports that 49 poles required replacement, and 46 poles required remediation.

a) What timeframe does this data cover? For example, were all inspections performed in 2022?

b) When does BVES anticipate it will replace the 49 poles that require replacement?

c) When does BVES anticipate it will remediate the 46 poles that require remediation?

d) Please define what BVES means by "requiring remediation" in the table mentioned above.

e) Please state any actions BVES has taken to minimize the risk of pole failure prior to the completion dates discussed in parts (a) and (b).

Response:

14.a) The time frame of pole stress analysis was from June 2019 to September of 2022.

14.b) BVES follows the guideline of GO-95 and BVES completes pole replacement within 1 year of pole stress analyses being performed.

14.c) BVES follows the guideline of GO-95 and BVES completes pole replacement within 1 year of pole stress analyses being performed..

14.d) BVES defines remediation as a pole may need addition down guy(s) and/or anchor(s) to support the addition load to pass the minimum safety factor for existing pole per GO-95 Rule 44 Grade A construction "Heavy loading district.

14.e) N/A

Question 15

In response to the Area for Continued Improvement BVES-22-15 in Appendix D of BVES's WMP, BVES provided tables illustrating the effectiveness of its additional inspections. Each of these tables has a column labeled "Number of possible findings."

a) Please define what is meant by "possible findings."

b) How does BVES determine the number of "possible findings"?

Response:

15.a) "Possible findings" are the findings from the inspection. Each finding is evaluated to determine if it is an actual issue. Generally, LiDAR and Thermography require further investigation to determine if the possible finding is an issue that requires corrective action.

15.b) The number of "possible findings" is determined by the initial number of findings reported in the inspection.

END OF REQUEST