Health & Safety Plan

TBC-HS-103

Fire Prevention Plan

Annex A

Wildfire Mitigation Plan

July 2024

2025 R0

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1 EXECUTIVE SUMMARY

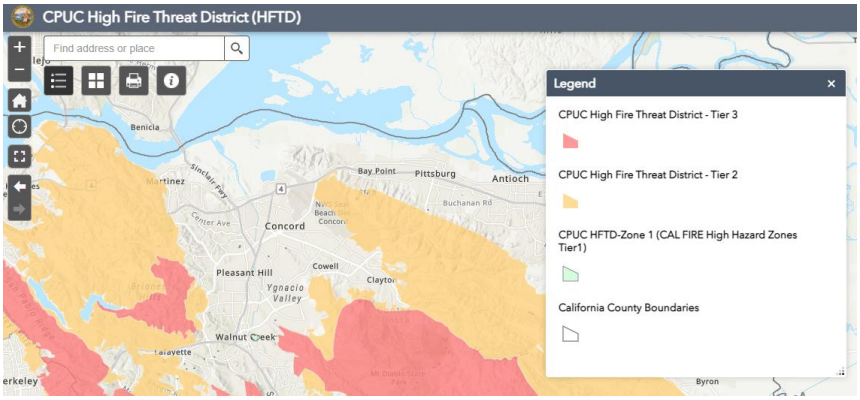
Trans Bay Cable LLC (U934-E) (TBC) is a transmission-only utility with no retail/end-use customers. TBC is the owner and operator of a 53-mile, approximately 400 MW, high voltage, direct-current (HVDC) submarine transmission cable buried at various depths beneath the San Francisco Bay Waters[1] (Bay Waters), with Alternating Current (AC) / DC converter stations at each end (Trans Bay System or System) (See Figure TBC 1- 1). Specifically, the transmission system is comprised of the Pittsburg converter station, 230kV High Voltage AC (HVAC) Underground Cable, 200kV HVDC Underground Cable – Pittsburg Location, +/-200kV HVDC Submarine Cable, +/-200kV HVDC Underground Cable – San Francisco Location, Potrero converter station, and 115kV HVAC Underground Cable (See Figure TBC 5.1- 1 Figure TBC 5.1- 2 and Figure TBC 5.1- 4).

Based on its review, TBC has determined that its facilities located in San Francisco have minimal fire-threat risk as the area is fully developed and urbanized. The San Francisco facilities are also not located in a High Fire-Threat District (HFTD) or an area of increased wildfire risk per the California Public Utilities Commission's (CPUC or Commission) FireMap. The submarine cable has no wildfire risk because it is completely submerged beneath the Bay Waters for approximately 53 miles (85 km). TBC's Pittsburg Converter Station, however, is adjacent to a Tier 2 (Elevated) Fire-Threat area based on the CPUC's HFTD Map[2] (See Figure TBC 1- 2) and a Community at Risk for wildfire[3]. Additionally, TBC's Pittsburg station site also borders a decommissioned oil storage facility which is surrounded by land containing vegetative fuels (Figure TBC 6- 2). A portion of the TBC's HVDC and HVAC cable traverses this property underground and exits into the Suisun Bay and interconnects to the Pacific Gas & Electric's (PG&E) 230kV substation located there respectively. All aboveground transmission infrastructure is fully contained within the walls of the converter station.

[1] San Francisco Bay Waters is defined as the continuous waterway that includes the San Francisco Bay, San Pablo Bay, Carquinez Strait, Suisan Bay and Sacramento River delta.
[2] CPUC FireMap – https://ia.cpuc.ca.gov/firemap/
[3] https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/fire-plan/communities-at-risk/

Figure TBC 1- 1. Trans Bay Cable System

Figure TBC 1- 2. Tier 2 HFTD near Pittsburg, CA



Catastrophic wildfires continue to have significant impact on people, wildlife, structures and the environment in California. Per California Department of Forestry and Fire Protection (CAL FIRE) an estimated 365,000 acres and 876 structures were damaged or destroyed as a result of fire in 2022, including 9 fatalities[4]. Although not all wildfires are linked to instigation by electric utility equipment, it is important to maintain persistent focus on mitigating activities and endeavors to reduce the risk that such equipment may have on the instigation of wildfires.

As a result of TBC's limited footprint, the substantial hardening of its transmission infrastructure due to being underground or submerged, and having no transmission infrastructure in wildlands or in a wildland urban interface (WUI), TBC does not maintain a program specifically geared towards wildfire mitigation. However, TBC focuses on wildfire safety as part of its overall fire prevention program and is dedicated to having industry-leading fire mitigation capabilities.

[4] https://www.fire.ca.gov/incidents/2022/

TBC participates in the CPUC wildfire mitigation workshops and continues to learn and implement applicable best practices in fire mitigation. TBC is committed to continuous improvement of its overall fire prevention plans and processes which have the added benefit of mitigating wildfire risk. TBC will continue review and assess its fire prevention program and include any new and applicable initiatives in its Wildfire Mitigation Plan (WMP) submissions.

1.1 Summary of the 2020-2022 WMP Cycle

TBC has a limited scope in California with one operational asset, the Trans Bay System, which is a 400MW HVDC system consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA and near an area designated as a Tier 2 (Elevated) HFTD, and represents TBC's asset with the most material wildfire fire risk. TBC completed all but two of its wildfire objectives during the 2020-2022 WMP cycle which included enhancements to minimize fire risk and improve situational awareness. Specifically these included:

- **Risk Assessment and Mapping:** Commissioned a third-party wildfire mitigation assessment to assess ignition risk and wildfire propagation in the area of TBC's Pittsburg Converter Station. A second level review of initiatives outlined in the 2020 assessment was conducted in Q1 2022 to provide supplemental evaluation of potential site enhancements.
- **Grid Design and System Hardening:** Installation of seismic upgrades which included the positioning of all site transformers on base isolators which significantly improves the capability of the transformers to resist derangement during a seismic event.
- **Situational Awareness and Forecasting:** Installation of a transformer monitoring system in order to monitor and track the health of the transformers and to proactively identify potential vulnerabilities. Installation of a real-time cable monitoring system which allows monitoring of the cable for physical vibration, temperature, and abnormal electrical discharge at the cable terminations, all of which may evidence cable failure, fault, or potential derangement. Implementation of a transformer oil control system which provides enhanced control and flow sensing on its main transformers. Installation of a weather station which allows for monitoring on a seven day forecast basis weather in TBC's operational area and access to a wildfire risk index.
- **Grid Operations and Protocols:** Purchase of Class B foam trailers to ensure adequate and ready suppression resources are available on site to address a fire instigated by a failed transformer.

1.2 Summary of the 2023-2025 Base WMP

As noted above, TBC's one operational asset is the Trans Bay System, a 400MW HVDC system consisting of two converter stations connected by an approximate 53-mile submarine cable. The only system element considered for wildfire mitigation is the Pittsburg Converter Station, which is adjacent to, but not located in, a Tier 2 HFTD. The Pittsburg Converter Station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. The transmission cables entering and exiting the station are all underground as part of the System's original design. Already having inherent fire-harden infrastructure, the facility received upgrades in the previous WMP cycle (2020-2022) to improve situational awareness capabilities, significantly enhance seismic resiliency of its transformers and stationing of on-site suppression resources. There are two remaining wildfire objectives from the 2020-2022 WMP cycle that TBC plans to complete during the 2023-2025 cycle. In 2023, TBC plans to complete installation of a fire suppression system in its spare parts building and completion of an outdoor enclosure for its compress gas cylinders. Both projects were delayed during the 2020-2022 WMP cycle as a result of vendor availability and supply chain issues, however both are forecasted to be completed by Q2 2023. TBC currently has no other fire-related initiatives planned for the 2023-2025 WMP cycle.

Given the aforementioned improvements to an as-constructed fire-harden grid design, the pending site upgrades for 2023 and the limited scope of operations, TBC has no current plans for additional wildfire initiatives for the Pittsburg Converter Station in the 2023-2025 WMP Cycle. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. TBC is committed to continuous improvement of its wildfire-related plans, systems, and processes and will include new wildfire-related initiatives in its future WMP submissions as they are deemed to be impactful in reducing residual wildfire risk at the Pittsburg Converter Station.

2 RESPONSIBLE PERSONS

Instructions:[5] *Provide an accounting of the responsibilities of the responsible person(s) executing the plan, including:*

1. *Executive level with overall responsibility*
2. *Program owners specific to each component of the plan*

Title, credentials and components of responsible must be released publicly, but other contact information may be provided in a redacted file attached to the WMP submission.

Executive-level owner with overall responsibility

- Name and title: Alona Sias, President – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A

Program owners specific to each section of the plan

Note: A program owner may own multiple sections, and multiple components across sections, but each section must have a program owner accountable.

Section 1: Executive Summary

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, President – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put "entire section"): Entire Section

Section 2: Persons responsible for executing the plan

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, President – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put "entire section"): Entire Section

Section 3: Statutory Requirements Checklist

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, President – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put "entire section"): Entire Section

Section 4: Overview of WMP

Program owner (add additional program owners if separated by component in section)

- Name and title: Alona Sias, President – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A

[5] Text in blue italics are instructions, prompts, and clarifications from Office of Energy Infrastructure Safety 2023-2025 Wildfire Mitigation Plan Technical Guidelines dated December 6, 2022.

- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

Section 5: Overview of Service Territory

Program owner (add additional program owners if separated by component in section)

- Name and title: Raj Prakash, Director of Operations – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

Section 6: Risk Methodology and Assessment

Program owner (add additional program owners if separated by component in section)

- Name and title: Raj Prakash, Director of Operations – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

Section 7: Wildfire Mitigation Strategy Development

Program owner (add additional program owners if separated by component in section)

- Name and title: Raj Prakash, Director of Operations – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

Section 8: Wildfire Mitigation

Program owner (add additional program owners if separated by component in section)

- Name and title: Michael Blunt, Operations Manager – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

Section 9: Public Safety Power Shutoff

Program owner (add additional program owners if separated by component in section)

- Name and title: Michael Blunt, Operations Manager – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

Section 10: Lessons Learned

Program owner (add additional program owners if separated by component in section)

- Name and title: Michael Blunt, Operations Manager – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put “entire section”): Entire Section

Section 11: Corrective Action Program

Program owner (add additional program owners if separated by component in section)

- Name and title: Raj Prakash, Director of Operations – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put "entire section"): Entire Section

Section 12: Notices of Violation and Defect

Program owner (add additional program owners if separated by component in section)

- Name and title: Lenneal Gardner, Regulatory and Business Manager – Trans Bay Cable
- Email: Redacted, provided separately in Attachment A
- Phone number: Redacted, provided separately in Attachment A
- Component (if entire section, put "entire section"): Entire Section

2.1 Verification

I am an officer of the applicant corporation herein, and am authorized to make this verification on its behalf. The statements in the foregoing document are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 8th, 2023.

At One California Street, Suite 1600, San Francisco 94111, California.

_____

Alona Sias, President – Horizon West Transmission, LLC
(Signature and Title of Corporate Officer)

FSTATUTORY REQUIREMENTS CHECKLIST

Instructions: *This section provides a checklist of the statutory requirements for a WMP as detailed in Public Utilities Code section 8386(c). By completing the checklist, the electrical corporation affirms that its WMP addresses each requirement.*

3

For each statutory requirement, the checklist must include a reference and hyperlink to the relevant section and page number in the WMP. Where multiple WMP sections provide the information for a specific requirement, the electrical corporation must provide references and hyperlinks to all relevant sections. Unique references must be separated by semicolons, and each must include a brief summary of the contents of the referenced section (e.g., Section 5, pp. 30–32 [workforce]; Section 7, p. 43 [mutual assistance]).

Table 3-1 provides an example of the minimum acceptable level of information and citation for the statutory requirements checklist.

Table 3-1: Example of Statutory Requirements Checklist

Public Utilities Code section 8386	***Description***	***WMP Section/Page***
(c)2	*The objectives of the plan*	*Section 4.1 p. 13*
(c)10	*Protocols for the PSPS of the electrical corporation's transmission infrastructure, etc.*	*Section 5 overview, pp. 30-31*
(c)(19)	*A description of how the WMP is consistent with the electrical corporation's disaster and emergency preparedness plan prepared pursuant to Public Utilities Code section 768.6, including plans to restore service and community outreach*	*Sections 7.3.9.2 to 7.3.9.3, pp. 790–801 (community outreach and customer support before, during, and after wildfires and customer support during emergencies)* *Section 7.3.9.4, pp. 802–804 (emergency plan)* *Section 7.3.9.5, pp. 805–808 (preparedness and planning for service restoration after emergency)* *Section 7.3.10.1, pp. 812–842 (community engagement to prepare for wildfire, PSPS, and protective devices and sensitivity settings)*

TBC provides the completed Statutory Requirements Checklist in Table 3- 1 below.

Table 3- 1. Statutory Requirements Checklist

Public Utilities Code section 8386	Description	WMP Section/Page

c)(1)	An accounting of the responsibilities of persons responsible for executing the plan.	Section 2, pp.15-17
(c)(2)	The objectives of the plan	Section 4.1, p.29 Section 4.2, pp.29-30
(c)(3)	A description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.	Section 4.4, pp.32-35 Section 6, pp.64-68 Section 7, pp.69-70 Section 8.1.2, pp.79-83
(c)(4)	A description of the metrics the electrical corporation plans to use to evaluate the plan's performance and the assumptions that underlie the use of those metrics.	Section 4.3, pp.30-32 Section 8.1.1.3, pp.76-78 Section 8.2.1.3, pp.103-105 Section 8.3.1.3, pp.121-124 Section 8.4.1.3, pp.150-153 Section 8.5.1.3, pp.206-210 Section 9.1.5, pp.223-229
(c)(5)	A discussion of how the application of previously identified metrics to previous plan performances has informed the plan.	Section 1, pp.11-14 Section 4, pp. 29-35 Section 8.1.1.3, pp.76-78 Section 8.2.1.3, pp.103-105 Section 8.3.1.3, pp.121-124 Section 8.4.1.3, pp.150-153 Section 8.5.1.3, pp.206-210 Section 9.1.5, pp.223-229

(c)(6)	A description of the electrical corporation's protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety. As part of these protocols, each electrical corporation shall include protocols related to mitigating the public safety impacts of disabling reclosers and deenergizing portions of the electrical distribution system that consider the impacts on all of the following: (A) Critical first responders. (B) Health and communication infrastructure. (C) Customers who receive medical baseline allowances pursuant to subdivision (c) of Section 739. The electrical corporation may deploy backup electrical resources or provide financial assistance for backup electrical resources to a customer receiving a medical baseline allowance for a customer who meets all of the following requirements: i. The customer relies on life-support equipment that operates on electricity to sustain life. ii. The customer demonstrates financial need, including through enrollment in the California Alternate Rates for Energy program continued pursuant to Section 739.1. iii. The customer is not eligible for backup electrical resources provided through	Not applicable. The Trans Bay System does not have any distribution elements or utilize reclosers. TBC is also a transmission-only utility and does not have any retail customers. Section 8.3.3, pp.129-138 Section 9.2, p.225

	medical services, medical insurance, or community resources. (D) Subparagraph (C) shall not be construed as preventing an electrical corporation from deploying backup electrical resources or providing financial assistance for backup electrical resources under any other authority.	
(c)(7)	A description of the electrical corporation's appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines, including procedures for those customers receiving medical baseline allowances as described in paragraph (6). The procedures shall direct notification to all public safety offices, critical first responders, health care facilities, and operators of telecommunications infrastructure with premises within the footprint of potential deenergization for a given event. The procedures shall comply with any orders of the commission regarding notifications of deenergization events.	Not Applicable. TBC is a transmission-only utility with no direct or retail customers. Section 8.4.6, pp.200-203 Section 8.5, pp. 201-218 Section 9.2, p.225

(c)(8)	Identification of circuits that have frequently been deenergized pursuant to a deenergization event to mitigate the risk of wildfire and the measures taken, or planned to be taken, by the electrical corporation to reduce the need for, and impact of, future deenergization of those circuits, including, but not limited to, the estimated annual decline in circuit deenergization and deenergization impact on customers, and replacing, hardening, or undergrounding any portion of the circuit or of upstream transmission or distribution lines.	Section 9.1.2, pp.218-224
(c)(9)	Plans for vegetation management.	Section 8.2, pp. 98-117
(c)(10)	Plans for inspections of the electrical corporation's electrical infrastructure.	Section 8.1, pp.71-98
(c)(11)	A description of the electrical corporation's protocols for the deenergization of the electrical corporation's transmission infrastructure, for instances when the deenergization may impact customers who, or entities that, are dependent upon the infrastructure. The protocols shall comply with any order of the commission regarding deenergization events.	Section 8.4, pp.146-203 Section 9.2, p.225

(c)(12)	A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the electrical corporation's service territory, including all relevant wildfire risk and risk mitigation information that is part of the commission's Safety Model Assessment Proceeding (A.15-05-002, et al.) and the Risk Assessment Mitigation Phase filings. The list shall include, but not be limited to, both of the following: (A) Risks and risk drivers associated with design, construction, operations, and maintenance of the electrical corporation's equipment and facilities. (B) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation's service territory.	Section 4.4, pp.32-35 Section 6, pp.64-68 Section 7, pp.69-70
(c)(13)	A description of how the plan accounts for the wildfire risk identified in the electrical corporation's Risk Assessment Mitigation Phase filing.	Section 6, pp.64-68 Section 7, pp.69-70
(c)(14)	A description of the actions the electrical corporation will take to ensure its system will achieve the highest level of safety, reliability, and resiliency, and to ensure that its system is prepared for a major event, including hardening and modernizing its infrastructure with improved engineering, system design, standards, equipment, and facilities, such as undergrounding, insulating of distribution wires, and replacing poles.	Section 8.1.1, pp.71-78 Section 8.1.2, pp.79-83 Section 8.4, pp.146-203

(c)(15)	A description of where and how the electrical corporation considered undergrounding electrical distribution lines within those areas of its service territory identified to have the highest wildfire risk in a commission fire threat map.	Section 8.1.2, pp.79-83
(c)(16)	A showing that the electrical corporation has an adequately sized and trained workforce to promptly restore service after a major event, taking into account employees of other utilities pursuant to mutual aid agreements and employees of entities that have entered into contracts with the electrical corporation.	Section 8.1.9, pp.94-98 Section 8.4, pp.146-203
(c)(17)	Identification of any geographic area in the electrical corporation's service territory that is a higher wildfire threat than is currently identified in a commission fire threat map, and where the commission should consider expanding the high fire threat district based on new information or changes in the environment.	Section 5.3.3, pp.46-47 Section 5.4, pp.57-63
(c)(18)	A methodology for identifying and presenting enterprisewide safety risk and wildfire-related risk that is consistent with the methodology used by other electrical corporations unless the commission determines otherwise.	Section 4.4, pp.32-35 Section 6, pp.64-68 Section 7, pp.69-70

(c)(19)	A description of how the plan is consistent with the electrical corporation's disaster and emergency preparedness plan prepared pursuant to Section 768.6, including both of the following: (A) Plans to prepare for, and to restore service after, a wildfire, including workforce mobilization and prepositioning equipment and employees. (B) Plans for community outreach and public awareness before, during, and after a wildfire, including language notification in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the commission based on the United States Census data.	Section 8.4, pp.146-203
(c)(20)	A statement of how the electrical corporation will restore service after a wildfire.	Section 8.4.5.1, pp.192-196
(c)(21)	Protocols for compliance with requirements adopted by the commission regarding activities to support customers during and after a wildfire, outage reporting, support for low-income customers, billing adjustments, deposit waivers, extended payment plans, suspension of disconnection and nonpayment fees, repair processing and timing, access to electrical corporation representatives, and emergency communications.	Not Applicable. TBC is a transmission-only utility with no direct or retail customers. Section 8.4.6, pp.200-203

(c)(22)	A description of the processes and procedures the electrical corporation will use to do all of the following: (A) Monitor and audit the implementation of the plan. (B) Identify any deficiencies in the plan or the plan's implementation and correct those deficiencies. (C) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, carried out under the plan and other applicable statutes and commission rules.	Section 4.4, pp.32-35 Section 6, pp.64-68 Section 10, pp.230-235 Section 11, pp.234-238 Appendix D: Areas for continued Improvements, p.262

OVERVIEW OF WMP

4.1 Primary Goal

Instructions: *Each electrical corporation must state the primary goal of its WMP. At a minimum, the electrical corporation must affirm its compliance with California Public Utilities Code section 8386(a):*

4

> *Each electrical corporation shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment.*

TBC's WMP goal has not changed from its initial CPUC-approved 2020 WMP report. The overarching goal of TBC's WMP is to comply with applicable provisions of California Public Utilities Code (PU Code) Section 8386[6] at TBC's facilities.

TBC considers the Trans Bay System to be significantly fire hardened and technologically advanced. In the past WMP cycle, TBC sought to and completed enhancements to the Pittsburg Converter Station and System elements to improve its risk assessment, situational awareness and grid hardening to reduce overall fire risk. In the 2023-2025 cycle, TBC will complete two remaining site upgrades: installation of a suppression system in the spare parts building and an outdoor enclosure for compressed gas cylinders. TBC's remaining goal for the 2023-2025 WMP cycle is to maintain its currently emplaced processes and procedures with respect to fire safety, mitigation and preparedness.

TBC has a vision of having class-leading fire-protected infrastructure and facilities that considers operational risks that include but are not limited to system faults, equipment failure, seismic events, flooding, wildfires, urban fires, tsunami, civil unrest, and insurgent action. TBC assesses that addressing fire risk in this larger context will include efforts related to wildfire mitigation. Lastly, TBC affirms its compliance with California Public Utilities Code section 8386(a) as stated in the Instructions for this Section 4.1.

4.2 Plan Objectives

Instructions: *In this section, the electrical corporation must summarize its plan objectives over the 2023-2025 WMP cycle. Plan objectives are determined by the portfolio of mitigation initiatives proposed in the WMP.*

This WMP recognizes the following facts relevant to assessing wildfire risk and establishing effective objectives and mitigations:

[6] https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PUC&sectionNum=8386.

- TBC only owns and operates transmission infrastructure with no distribution facilities.
- TBC's transmission line is entirely underground or submerged beneath the Bay Waters and its substations are located in urban areas outside of wildlands and wildland urban interfaces.
- TBC does not serve distribution or retail customers or any residential, commercial, or industrial interconnections.
- TBC's transmission facilities are monitored 24 hours a day, 7 days a week while in operation by a certified and qualified System Operator with full authority, responsibility, and requisite emergency response training to take appropriate action to mitigate any fire risk posed, including Emergency Shut-Off as a measure of last resort.
- The Trans Bay System is under the operational control of the CAISO.
- TBC completed the majority of its proposed mitigation objectives during the 2020-2022 WMP cycle, with the remaining two initiatives to be completed in 2023.

In light of the aforementioned facts, TBC does not have any current proposed mitigation initiatives in its WMP for the 2023-2025 WMP cycle, other than the two aforementioned remaining initiatives from its 2020-2022 WMP cycle. TBC's plan objectives are to:

- complete the installation of a fire suppression system in the spare parts building and installation of a outdoor compress gas cylinder container at the Pittsburg Converter Station
- maintain its currently emplaced processes and procedures with respect to fire safety, mitigation and preparedness to minimize the likelihood of an ignition event from its facility
- periodically evaluate new technologies, materials, and methods for further reducing fire risk at TBC's Pittsburg Converter Station.

4.3 Proposed Expenditures

Instructions: *Each electrical corporation must summarize its projected expenditures in thousands of U.S. dollars per year for the next three-year WMP cycle, as well as the planned and actual expenditures from the previous three-year WMP cycle (e.g., 2020–2022), in both tabular and graph form.*

Table 4-1 provides an example of the minimum acceptable level of information summarizing an electrical corporation's WMP expenditures. The financials represented in the summary table equal the aggregate spending listed in the financial tables of the QDR (see the Energy Safety Data Guidelines). Energy Safety's WMP evaluation, including approval or denial, must not be construed as approval of, or agreement with, costs listed in the WMP.

Table 4-1. Example of Summary of WMP Expenditures

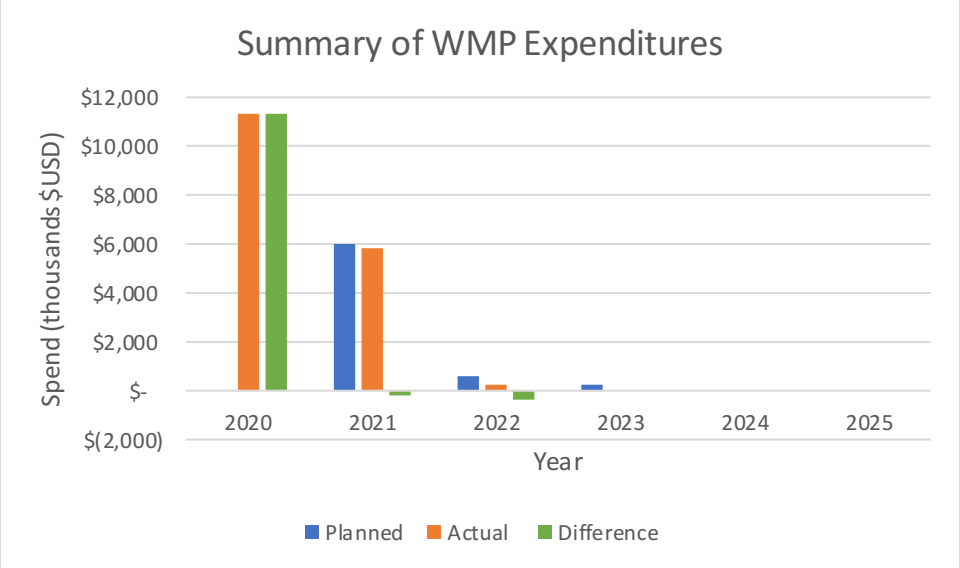
Year	*Spend (thousands $USD*
2020	*Planned (as reported in the 2020 WMP) =* *Actual =* *±△ =*
2021	*Planned (as reported in the 2021 WMP Update) =* *Actual =* *±△ =*
2022	*Planned (as reported in the 2022 WMP Update) =* *Actual =* *±△ =*
2023	*Planned =*
2024	*Planned =*
2025	*Planned =*

Table 4- 1. Summary of WMP Expenditures

Year	Spend (thousands $USD)
2020	Planned (as reported in the 2020 WMP) = 0[7] Actual = 11,300 ±△ = 11,300
2021	Planned (as reported in the 2021 WMP Update) = 6,000 Actual = 5,800 ±△ =(200)
2022	Planned (as reported in the 2022 WMP Update) = 610 Actual = 238 ±△ = 372
2023	Planned = 280
2024	Planned = 0
2025	Planned = 0

[7] TBC did not report an planned spend in its 2020 WMP because TBC does not maintain a WMP specific program. However starting in 2021, TBC counted as reportable spend, spend on initiatives that while not specific to wildfire mitigation, supported overall fire risk reduction. In the 2021 and 2022 WMPs, TBC reported planned spend for 2020 as 11,322 (in thousands $USD).

Figure TBC 4.3- 1. Summary of Expenditures



4.4 Risk-Informed Framework

The electrical corporation must adopt a risk-informed approach to developing its WMP. The purposes of adopting this approach are as follows:

- *To develop a WMP that achieves an optimal level of life safety, property protection, and environmental protection, while also being in balance with other performance objectives (e.g., reliability and affordability)*
- *To integrate risk modeling outcomes with a range of other performance objectives, methods, and subject matter expertise to inform decision-making processes and the spatiotemporal prioritization of mitigations*
- *To target mitigation efforts that prioritize the highest-risk equipment, wildfire environmental settings, and assets-at-risk (e.g., people, communities, critical infrastructure), while still satisfying other performance objectives defined by the California Public Utilities Commission (CPUC) (e.g., reliability and affordability)*
- *To provide a decision-making process that is clear and transparent to internal and external stakeholders, including clear evaluation criteria and visual aids (such as flow charts or decision trees)*

The risk-informed approach adopted by the electrical corporation must, at a minimum, incorporate several key components, described below. In addition, the evaluation and management of risk must include consideration of a broad range of performance objectives (e.g., life safety, property protection, reduction of social vulnerability, reliability, resiliency, affordability, health, environmental protection, public perception, etc.), integrate cross-disciplinary expertise, and engage various stakeholder groups as part of the decision-making process.

The risk-informed approach must have seven minimum components, as described in Table 4-2.

Table 4-2. Risk-Informed Approach Components

Risk-Informed Approach Component	***Brief Description***
1. Goals and plan objectives	*The fir7st step in the risk-informed approach is to identify the primary goal(s) and plan objectives of the electrical corporation's WMP. These goals and objectives are electrical corporation-specific and must be defined and described in Sections 4.1 and 4.2.*
2. Scope of application (i.e., electrical corporation service territory)	*The second step is to define the physical characteristics of the system in terms of its major elements: electrical corporation service territory characteristics, electrical infrastructure, wildfire environmental settings, and various assets-at-risk (e.g., communities and people, property, critical infrastructure, cultural/historical resources, environmental services). Knowledge and understanding of how individual system elements interface are essential to this step. Sections 5–5.4 provide instructions on what electrical corporations must present regarding physical traits, environmental characteristics, and potential assets at risk in their service territory.*
3. Hazard identification	*The third step is to identify hazards and determine their likelihoods. Section 6.2.1 provides instructions on hazard identification.*
4. Risk scenario identification	*The fourth step, based on the context and desired values, is to develop risk scenarios that could lead to an undesirable event. Risk scenario techniques that may be employed include event tree analysis, fault tree analysis, preliminary hazard analysis, and failure modes and effects analysis. Section 6.3 provides instructions on risk scenario identification.*
5. Risk analysis (i.e., likelihood and consequences)	*The fifth step is to evaluate the likelihood and consequences of the identified risk scenarios to understand the potential impact on the desired goal(s) and plan objectives. The consequences are based on an array of risk components that are fundamental to overall utility risk, wildfire risk, and PSPS risk given the electrical corporation's scope of application and portfolio of wildfire mitigation initiatives. Section 6.2.2 provides instructions on risk analysis.*
6. Risk presentation	*The sixth step is to consider how the risk analysis is presented to the various stakeholders involved. Section 6.4 provides instructions on risk presentation.*

7. Risk evaluation	*After the risk analysis is complete, hazards can be resolved by either assuming the risk associated with the hazards or eliminating or controlling the hazards.* *Risk evaluation includes identification of criteria and procedures for identifying critical risk both spatially and temporally. Risk evaluation must also include, as a minimum, evaluating the seriousness, manageability, urgency, and growth potential of the wildfire hazard/risk. Risk evaluation should be used to determine whether the individual hazard/risk should be mitigated. Risk evaluation and risk-informed decision making should be done using a consensus approach involving a range of key stakeholder groups. Section 7 provides instructions for risk evaluation or risk-informed decision making.*
8. Risk mitigation and management	*In the final step, the electrical corporation must identify which risk management strategies are appropriate given practical constraints such as limited resources, costs, and time. The electrical corporation must indicate the high-level risk management approach, as determined in Step 7. The electrical corporation must identify risk mitigation initiatives (or a portfolio of initiatives) and prioritize their spatial and temporal implementation. This step includes consideration of what risk mitigation strategies are appropriate and most effectively meet the intent of the WMP goal(s) and plan objectives, while still in balance with other performance objectives. It also includes the procedures and strategies to develop, review, and execute schedules for implementation of mitigation initiatives and activities (as well as interim mitigation initiatives). Section 8 provides instructions for reporting on initiatives to mitigate identified risks.*

TBC is a transmission-only utility with no retail/end-use customers. TBC is the owner and operator the Trans Bay System which is a 53-mile, approximately 400 MW, HVDC submarine transmission cable buried at various depths beneath the Bay Waters, with AC/DC converter stations at each end. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 (Elevated) HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. Given that the Trans Bay System is located outside of any HFTD but adjacent to a Tier 2 HFTD, TBC's wildfire-related initiatives are primarily focused on infrastructure hardening, increased situational awareness, and general fire safety risk reduction.

To inform appropriate wildfire hardening initiatives, TBC conducts an annual comprehensive assessment of equipment using a Failure Modes and Effects Analysis (FMEA). The FMEA considers the potential failures from each TBC Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. The general process of this methodology as applied by TBC to identify and prioritize wildfire risks, drivers and mitigation measures consists of the following five steps: risk identification, risk driver identification, risk prioritization, risk mitigation, risk assessment and re-prioritization. The methodology of the FMEA is further discussed in detail in Section 6.

In 2020, TBC commissioned a third-party wildfire assessment that (i) evaluated wildfire risk at the Pittsburg Converter Station, (ii) modelled a hypothetical ignition event and associated wildfire propagation, and (iii) identified appropriate wildfire hardening improvements. The assessment was based on the latest in wildland fire behavior modelling and took into consideration the interaction of key influencing factors: fuel, topography and weather. The assessment was tailored to the environmental factors at the Converter Station and modeled a hypothetical ignition event under 97th percentile weather conditions to understand potential outcomes under extreme conditions, and produced typical flame lengths, speed of fire propagation, fire intensity, fire spotting behavior, and fire spread probability distribution. TBC utilized the study to provide an initial baseline assessment of the fire harden capabilities of its Pittsburg Converter Station design and equipment and review of planned initiatives to enhance fire protection and certain seismic upgrades to its main transformers. The study also afforded TBC with additional recommendations for consideration to enhance control measures for improvement of its fire protection schema and philosophy. TBC reviewed and included appropriate recommendations in its short term and mid-term capital program to improve operational safety and fire risk mitigation during the 2020-2022 WMP cycle. In Q1 2022, TBC contracted with another third-party to provide second level review of the 2020 study to verify the effectiveness of and further prioritize fire mitigation initiatives which will be completed in 2023.

Operational experience also factors into to risk assessment and management as TBC leverages its experience and the operational experience of its affiliates to form lessons learned which contribute to the maturity of its risk management.

Based on the above, TBC conducts risk analysis and identification of risk drivers regarding fires in the context of proximity to high fire-risk areas, existence of vegetative fuels, nature and location of its transmission assets, and the effectiveness of implemented mitigants. TBC determines ignition probability drivers through use of the annual FMEA and the 2020 third-party wildfire mitigation assessment. TBC wildfire mitigation strategy focuses on minimizing the likelihood of utility-caused ignitions and reducing negative impact from an ignition should one occur.

OVERVIEW OF THE SERVICE TERRITORY

Instructions: *In this section of the WMP, the electrical corporation must provide a high-level overview of its service territory and key characteristics of its electrical infrastructure. This information is intended to provide the reader with an understanding of the physical and technical scope of the electrical corporation's WMP. Sections 5.1 - 5.4 below provide detailed instructions.*

5.1 Service Territory

Instructions: *The electrical corporation must provide a high-level description of its service territory, addressing the following components:*[8]

- *Area served (in square miles)*
- *Number of customers served*

The electrical corporation must provide a geospatial map that shows its service territory (polygons) and distribution of customers served (raster or polygons). This map should appear in the main body of the report.

Table 5-1 provides a template for presenting the required high-level service territory statistics.

Table 5-1: *Example of Service Territory High-Level Statistics*

Characteristic	*#*
Area served (sq. mi.)	
Number of customers served	

TBC is an independent transmission operator (ITO) that has transmission-only assets and does not have a service territory. The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. The System transmits up to 400MW of power from the East Bay to into PG&E's Potrero Substation in San Francisco, CA.

As noted on page 6 of The Office of Energy Infrastructure Safety's (Energy Safety) ITO Supplement to the 2023-2025 WMP Technical Guidelines, ITOs do not have service territories. As such the reporting requirements for this Section 5.1 do not apply to ITOs such as TBC. Therefore, Table 5-1 below is noted as "N/A" meaning Not Applicable.

[8] Annual information included in this section must align with Table 7 of the QDR.

Table 5- 1. Service Territory High-Level Statistics

Characteristic	#
Area served (sq. mi.)	N/A
Number of customers served	

Figure TBC 5.1- 1. Overview of TBC Facilities and Operational Area

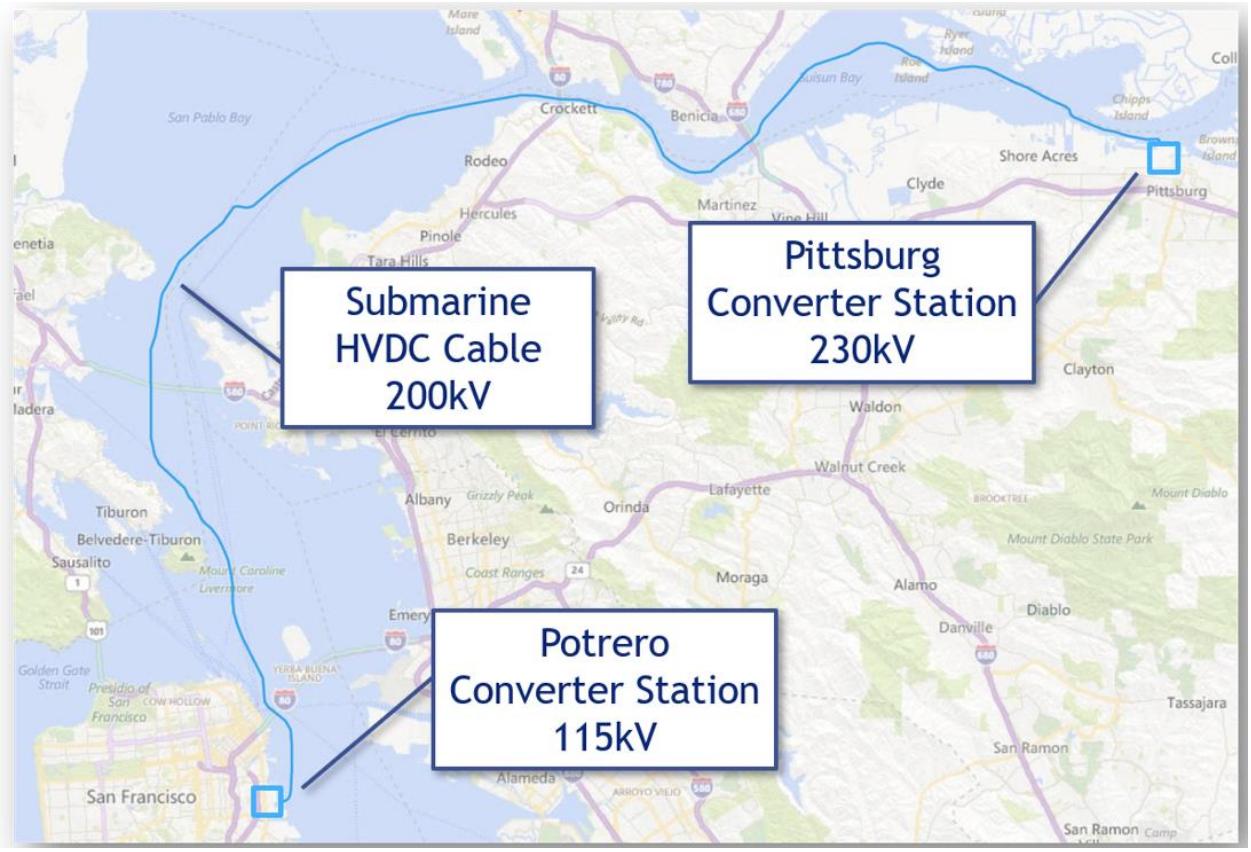


Figure TBC 5.1- 2. TBC Potrero Station Transmission Elements and PG&E connection

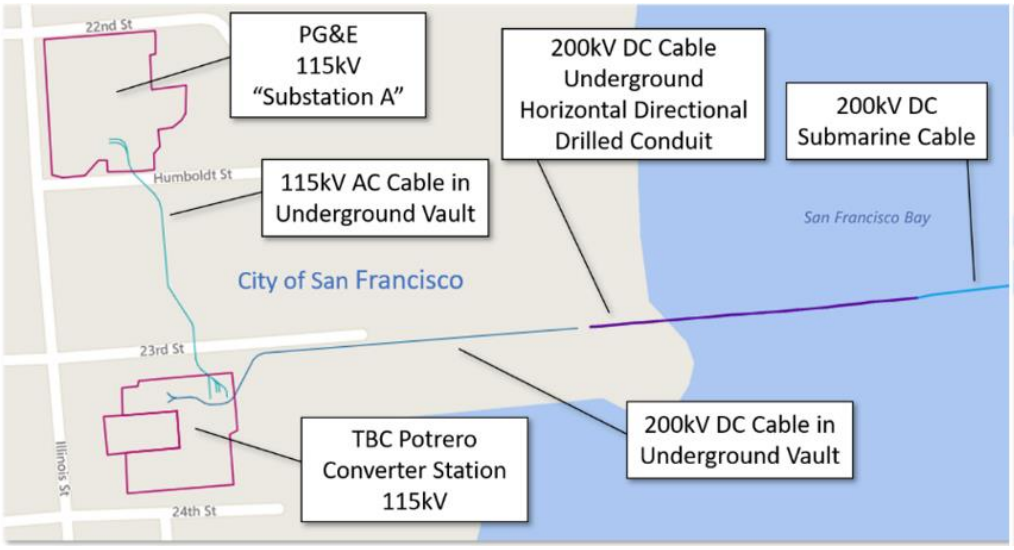


Figure TBC 5.1- 3. Overhead View of TBC Potrero Station

Figure TBC 5.1- 4. TBC Pittsburg Station Transmission Elements and PG&E connection

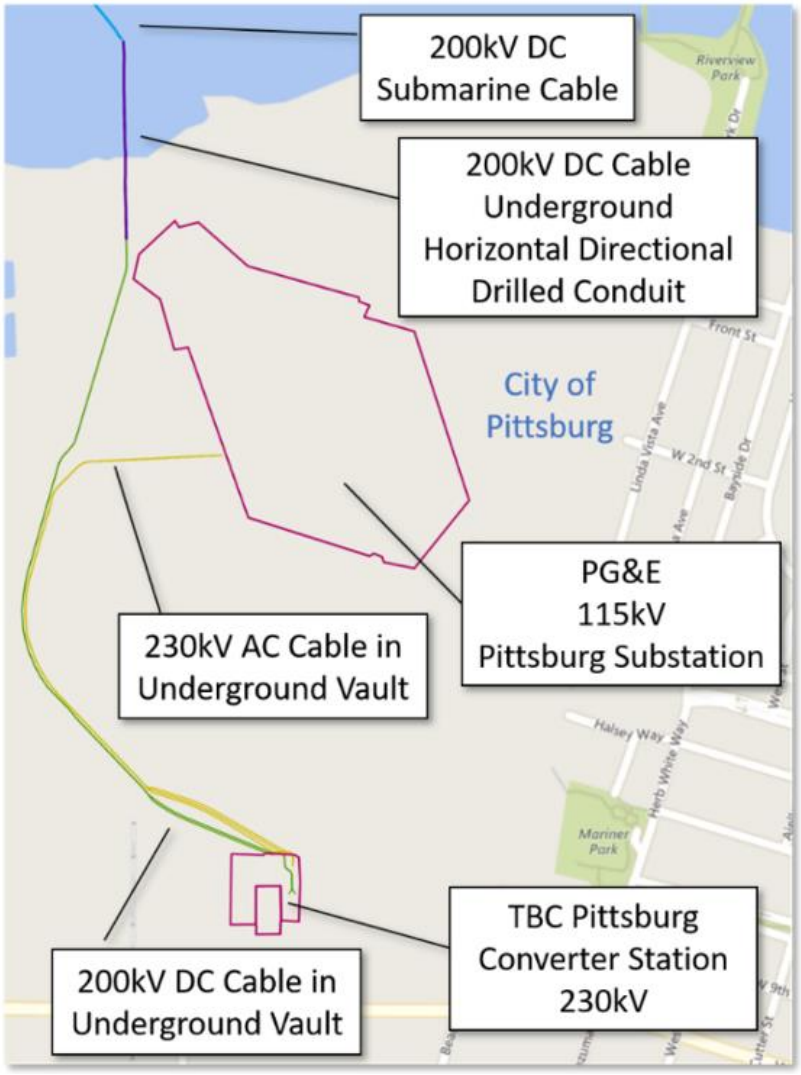


Figure TBC 5.1- 5. Overhead View of TBC Pittsburg Station

5.2 Electrical Infrastructure

Instructions: *The electrical corporation must provide a high-level description of its infrastructure, including all power generation facilities, transmission lines and associated equipment, distribution lines and associated equipment, substations, and any other major equipment.*[9]

Table 5-2 provides a template for presenting the required information.

Table 5-2. Example of Overview of Key Electrical Equipment

Type of Equipment	***HFTD***	***Non-HFTD***	***Total***
Substations (#)			
Power generation facilities (#)			
Overhead transmission lines (circuit miles)			
Overhead distribution lines (circuit miles)			

[9] Annual information included in this section must align with Table 7 of the QDR.

Hardened overhead distribution lines (circuit miles)			
Hardened overhead transmission lines (circuit miles)			
Underground transmission and distribution lines (circuit miles)			
Distribution transformers (#)			
Reclosers (#)			
Poles (#)			
Towers (#)			
Microgrids (#)			

The Trans Bay System is a 53-mile, approximately 400 MW HVDC submarine transmission cable buried at various depths beneath the Bay Waters, with AC/DC converter stations at each end. Specifically, the transmission system is comprised of the Pittsburg converter station, 230kV HVAC Underground Cable, 200kV HVDC Underground Cable – Pittsburg Location, +/-200kV HVDC Submarine Cable, +/-200kV HVDC Underground Cable – San Francisco Location, Potrero converter station, and 115kV HVAC Underground Cable. See Figure TBC 5.1- 1 through Figure TBC 5.1- 5 for TBC's transmission elements.

Table 5- 2. Overview of Key Electrical Equipment

Type of Equipment	HFTD	Non-HFTD	Total
Substations (#)	0	2	2
Power generation facilities (#)	0	0	0
Overhead transmission lines (circuit miles)	0	0	0
Overhead distribution lines (circuit miles)	0	0	0
Hardened overhead distribution lines (circuit miles)	0	0	0
Hardened overhead transmission lines (circuit miles)	0	0	0

Underground transmission and distribution lines (circuit miles)	0	53	53
Distribution transformers (#)	0	0	0
Reclosers (#)	0	0	0
Poles (#)	0	0	0
Towers (#)	0	0	0
Microgrids (#)	0	0	0

5.3 Environmental Settings

Instructions: *The electrical corporation must provide a high-level overview of the wildfire environmental settings within its service territory.*

5.3.1 Fire Ecology

Instructions: The electrical corporation must provide a brief narrative describing the fire ecology or ecologies across its service territory. This includes a brief description of how ecological features, such as the following, influence the propensity of the electrical corporation's service territory to experience wildfires: generalized climate and weather conditions, ecological regions and associated vegetation types, and fire return intervals.

The electrical corporation must provide tabulated statistics of the vegetative coverage across its service territory. The tabulated data must include a breakdown of the vegetation types, total acres per type, and percentage of service territory per type. The electrical corporation must identify the vegetative database used to characterize the vegetation (e.g., CALVEG). Table 5-3 provide an example of the minimum level of content and detail required.

Table 5-3. Example of Existing Vegetation Types in the Service Territory

Vegetation Type	*Acres*	*Percentage of Service Territory*
Annual grassland	*1*	*0*
Coastal oak woodland	*0*	*0*
Coastal scrub	*0*	*0*
Mixed chaparral	*0*	*0*

TBC is an ITO that has transmission-only assets and does not have a service territory. As noted on page 7 of Energy Safety's ITO Supplement to the 2023-2025 WMP Technical Guidelines, ITOs do not have end-use customers and therefore have no service territories. ITOs are instructed to provide a "brief narrative describing the fire ecology or ecologies adjacent to their assets."

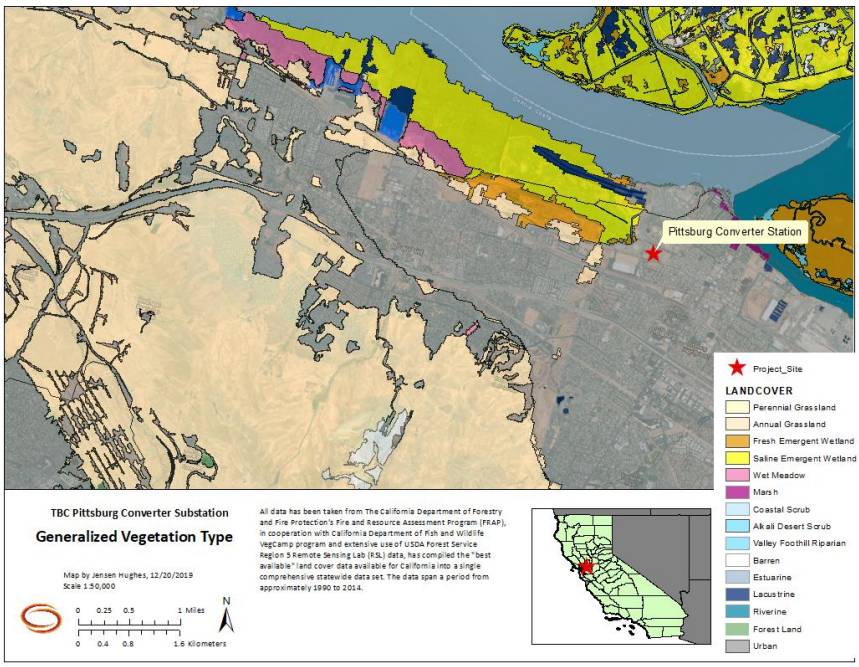
The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD, and represents TBC's asset with the most material wildfire fire risk.

The Pittsburg Converter Station is sited in an urban environment in the City of Pittsburg. The Pittsburg Converter Station is proximate to vegetative fuels in the form of a five (5) acre area which contains various native and non-native species of trees, shrubs, and grasses but all cable infrastructure traversing the area is underground. TBC notes that in the greater area surrounding the converter station (39 sq. mi.), there are 12,688 acres (approximately 50%) of natural vegetation. This primarily consists of grasslands (~37%) and wetlands, with relatively smaller amounts of coastal sage brush, riparian woodlands and forest land. The remaining area (approximately 49.7%) is developed or water-based resources. As noted above since TBC does not have a service territory Table 5- 3 is marked "N/A" meaning "Not Applicable".

Table 5- 3. Existing Vegetation Types in the Service Territory

Vegetation Type	Acres	Percentage of Service Territory
Annual grassland	N/A	N/A
Coastal oak woodland	N/A	N/A
Coastal scrub	N/A	N/A
Mixed chaparral	N/A	N/A

Figure TBC 5.3.1- 1. Vegetation map surrounding the Pittsburg Converter Station



5.3.2 Catastrophic Wildfire History

Instructions: *The electrical corporation must provide a brief narrative summarizing its wildfire history for the past 20 years (2002-2022) as recorded by the electrical corporation, CAL FIRE, or another authoritative sources. For this section, wildfire history must be limited to electrical corporation ignited catastrophic fires (i.e., fires that caused at least one death, damaged over 500 structures, or burned over 5,000 acres). This includes catastrophic wildfire ignitions reported to the CPUC that may be attributable to facilities or equipment owned by the electrical corporation and where the cause of the ignition is still under investigation.[10] Electrical corporations must clearly denote those ignitions as still under investigation. In addition, the electrical corporation must provide catastrophic wildfire statistics in tabular form, including the following key metrics:*

- *Ignition date*
- *Fire name*
- *Official cause (if known)*
- *Size (acres)*
- *Number of fatalities*
- *Number of structures damaged*
- *Estimated financial loss (U.S. dollars)*

[10] *CPUC emergency reporting instructions: https://www.cpuc.ca.gov/regulatory-services/safety/emergency-reporting.*

Table 5-4 provides an example of the content and level of detail required for the tabulated historical catastrophic utility-related wildfire statistics.[11] The electrical corporation must provide an authoritative government source (e.g., CPUC, CAL FIRE, U.S. Forest Service, or local fire authority) for its reporting of wildfire history data and loss/damage estimates, to the extent this information is available.

***Table 5-4.** Example of Catastrophic Electrical Corporation Wildfires*

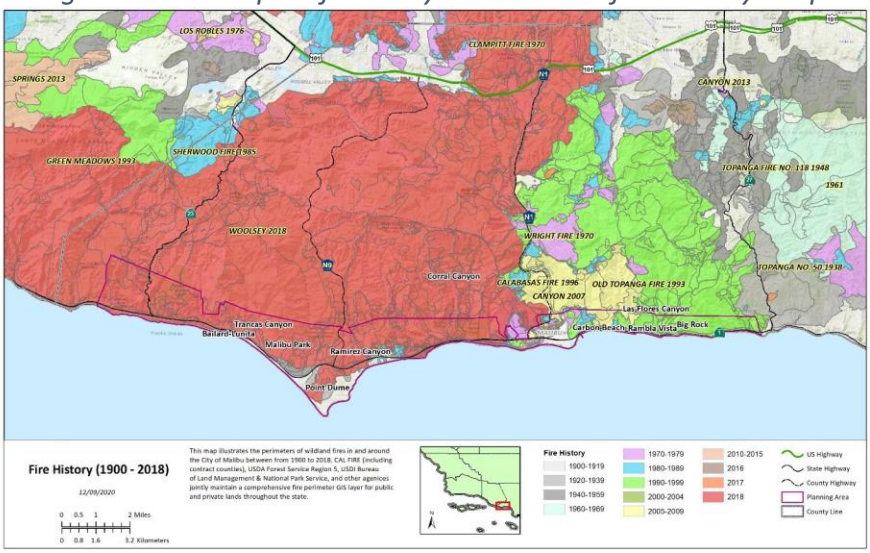
Ignition Date	Fire Name	Official Cause	Fire Size (acres)	No. of Fatalities	No. of Structures Destroyed and Damaged	Financial Loss (US$)

The electrical corporation must also provide a map or set of maps illustrating the catastrophic wildfires. One representative map must appear in the main body of the WMP, with supplemental or detailed maps provided in Appendix C as needed. The maps must include the following:

- *Fire perimeters*
- *Legend and text labeling each fire perimeter*
- *County lines*

Figure 5-1 provides an example of the content and level of detail required for the map(s).

Figure 5-1. Example of a Utility-Related Wildfire History Map



[11] *Annual information included in this section must align with Table 2 of the QDR.*

TBC entered commercial operations in November 2010. TBC has never had an ignited catastrophic fire, or any fire, instigated by its utility equipment. As a result Table 5- 4: Catastrophic Electrical Corporation Wildfires below is marked as "N/A" meaning "Not Applicable". Additional there is no information to submit for Figure 5-1. Utility-Related Wildfire History Map.

Table 5- 4. Catastrophic Electrical Corporation Wildfires

Ignition Date	Fire Name	Official Cause	Fire Size (acres)	No. of Fatalities	No. of Structures Destroyed and Damaged	Financial Loss (US$)
N/A						

5.3.3 High Fire Threat Districts

Instructions: *The electrical corporation must provide a brief narrative identifying the CPUC-defined HFTD across its territory. The electrical corporation must also provide a map of its service territory overlaid with the HFTD. The map must be accompanied by tabulated statistics on the CPUC-defined HFTD including the following minimum information:*

- *Total area of the electrical corporation's service territory in the HFTD (sq. mi.)*
- *The electrical corporation's service territory in the HFTD as a percentage of its total service territory (%)*

For the HFTD map, the HFTD layer(s) (raster or polygon) must cover the electrical corporation's service territory and the HFTD layer must match the latest boundaries as published by the CPUC. Table 5-5 provides an example of the content and level of detail required.

Table 5-5. *Example of an Electrical Corporation's HFTD Statistics*

High Fire Threat District	*Total Area of Individual District (sq. mi.)*	*% of Total Service Territory*
Non-HFTD	*XX*	*85%*
Tier 2	*XX*	*5%*
Tier 3	*XX*	*8%*
Total =	*XX*	*100%*

TBC is an ITO that has transmission-only assets and does not have a service territory. The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The

submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to but not site in an area designated as a Tier 2 HFTD. TBC provides the following map which shows that all its assets are located in Non-HFTD areas.

Figure TBC 5.3.3-1. Trans Bay Station site locations on HFTD Map

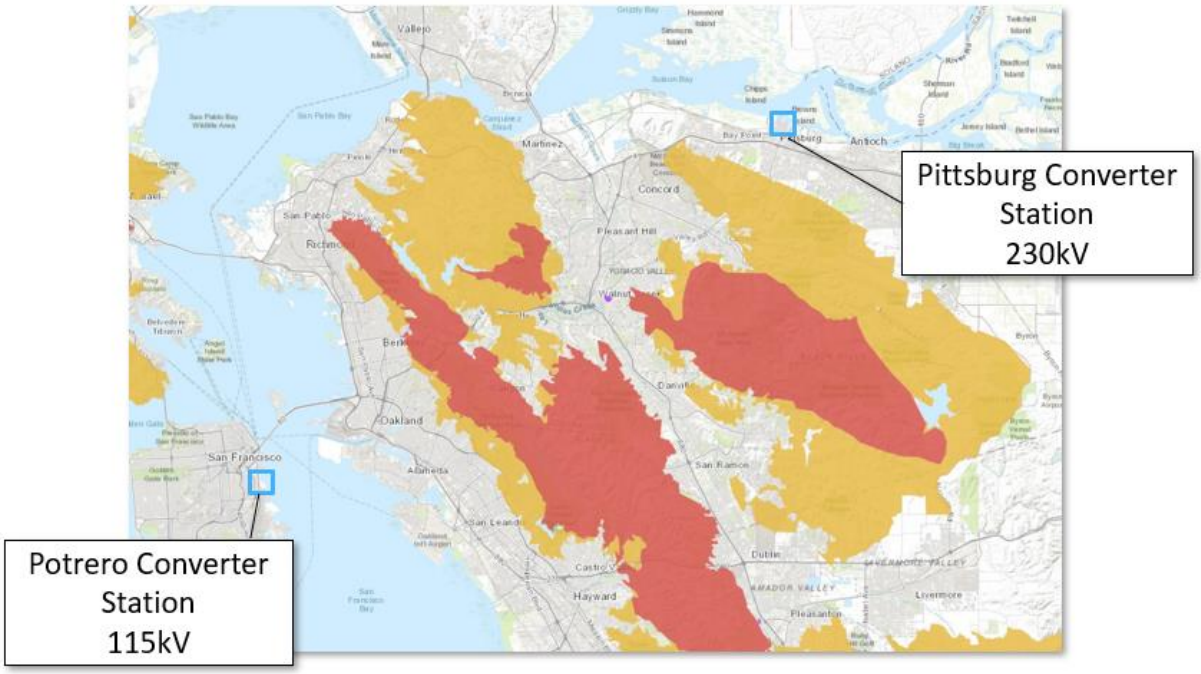


Table 5- 5. Electrical Corporation's HFTD Statistics

High Fire Threat District	Total Area of Individual District (sq. mi.)	% of Total Service Territory
Non-HFTD	0	100%
Tier 2	0	0%
Tier 3	0	0%
Total =	XX	100%

5.3.4 Climate Change

Instructions: *It is critical for the electrical corporation to understand general climate conditions and how climate change impacts the frequency and the intensity of extreme weather events and the vegetation that fuels fires.*

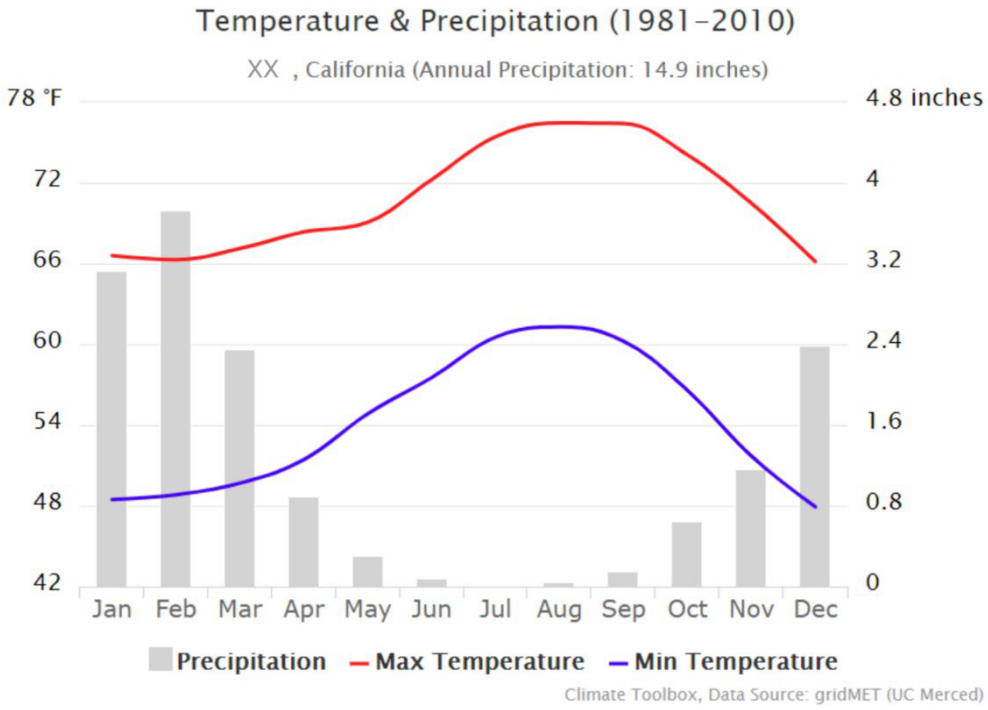
5.3.4.1 General Climate Conditions

Instructions: *The electrical corporation must provide an overview of the general weather conditions and climate across its service territory in the past 30- to 40-year period.*[12] *The narrative must include, at a minimum, the following:*

- *Average temperatures throughout the year*
- *Extreme temperatures that may occur and when and where they may occur*
- *Precipitation throughout the year*

The electrical corporation must also provide a graph of the average precipitation and maximum and minimum temperatures for each distinct climatic region of its service territory. At a minimum, it must provide one graph in the main body of the report. Figure 5-2 provides an example of the climate/weather graph.

Figure 5-2. Example of Annual Mean Climatology for the Electrical Corporation's Service Territory



TBC is an ITO that has transmission-only assets and does not have a service territory. The land elements of the Trans Bay System are located in San Francisco, CA and Pittsburg, CA. The only system element considered for wildfire mitigation is the Pittsburg Converter Station, which is adjacent to, but not located in, a Tier 2 HFTD. The climate where the Pittsburg station is sited is

[12] Annual information included in this section must align with Table 4 of the QDR.

classified as “Mediterranean” – warm temperate with dry, warm/hot summers – according to the Koppen-Geiger Climate Classification System.[13]

Figure TBC 5.3.4- 1. Climate Classification for Pittsburg, CA

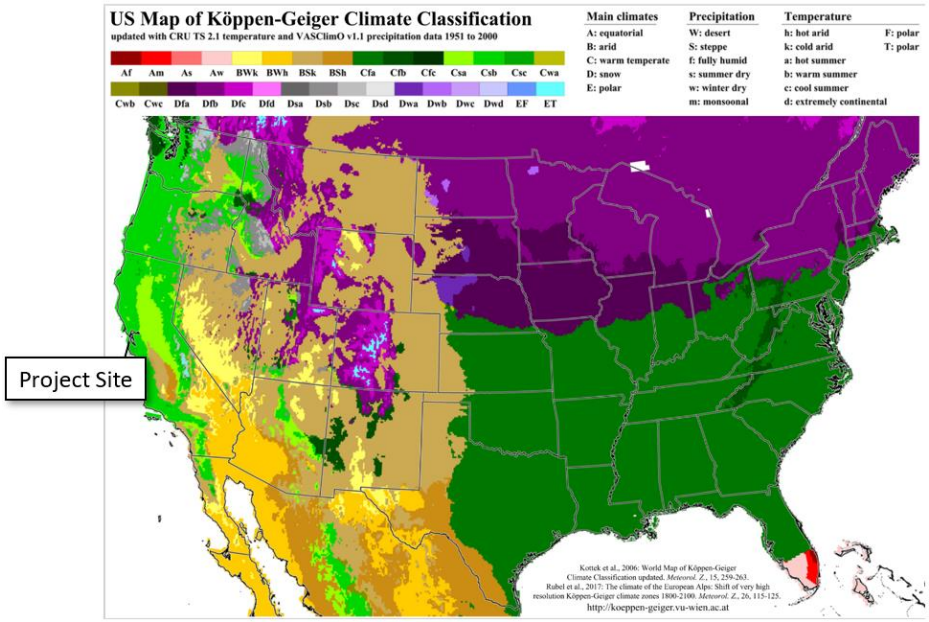
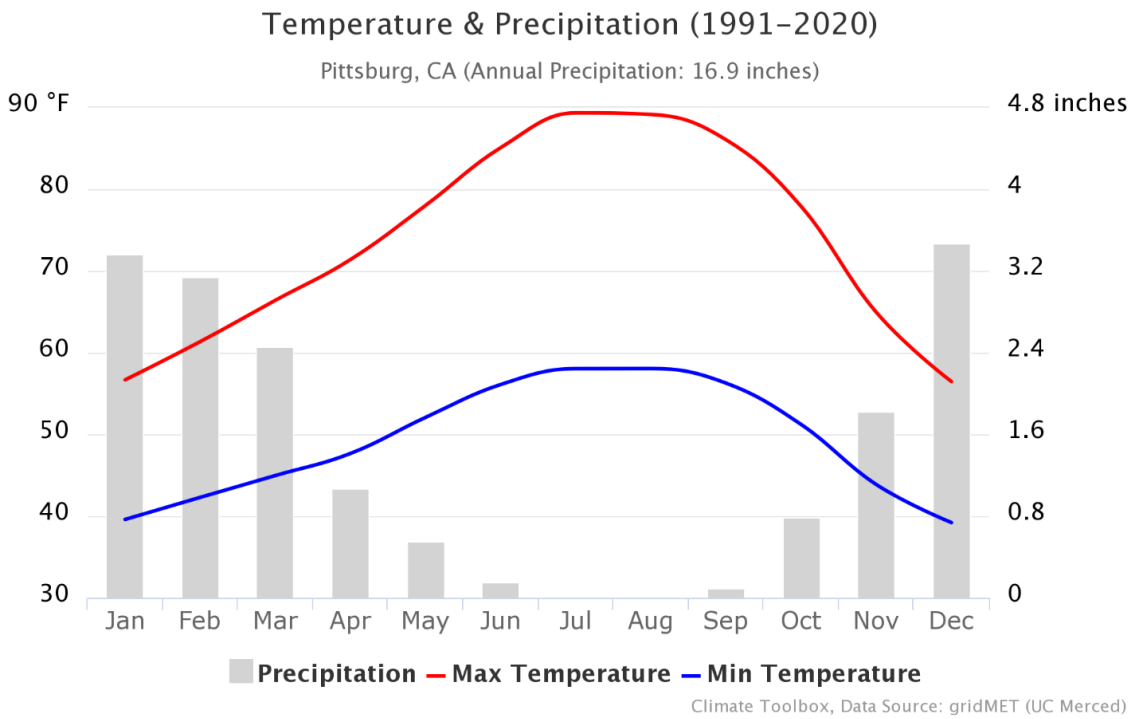


Figure 5- 1. Annual Mean Climatology for the Electrical



[13] http://koeppen-geiger.vu-wien.ac.at/usa.htm

5.3.4.2 Climate Change Phenomena and Trends

Instructions: *The electrical corporation must provide a brief discussion of the local impacts of anticipated climate change phenomena and trends across its service territory. In addition, the electrical corporation must provide graphs/charts illustrating:*

- *Mean annual temperature (Figure 5-3)*
- *Mean annual precipitation (Figure 5-4)*
- *Projected changes in minimum and maximum daily temperatures (Figure 5-5)*

The electrical corporation must also indicate the increase in extreme fire danger days (historic 95th-percentile conditions) due to climate change, considering (at a minimum) the combination of warmer temperatures, drier vegetation, and changes in high-wind events (e.g., Santa Ana winds, Diablo winds, Sundowners) for both winter/spring and summer/fall periods throughout the electrical corporation service territory. Figure 5-6 provides an example of the required information on projections of extreme fire dangers.

The electrical corporation must cite all source(s) used to write and illustrate this section.

Figure 5-3. Example of Mean Annual Temperature for Service Territory, 1900s–2020s

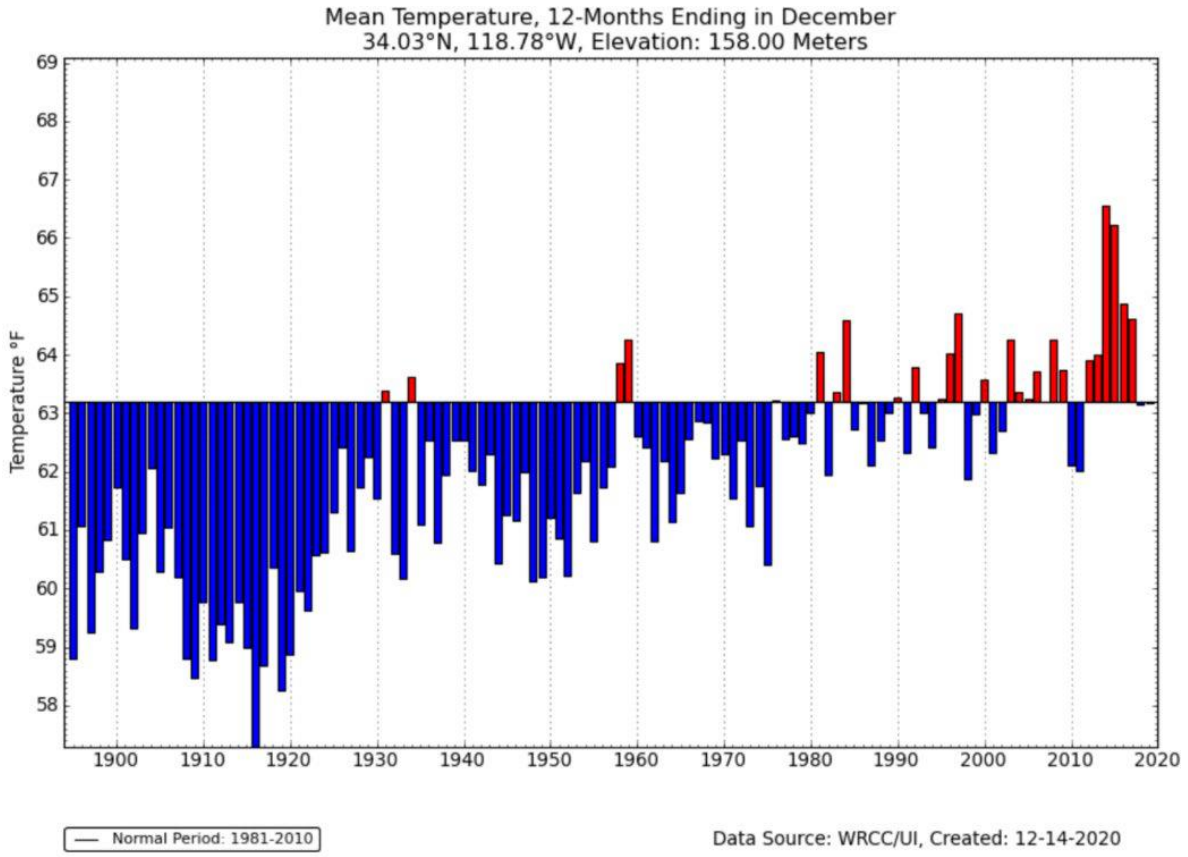


Figure 5-4. Example of Mean Annual Precipitation for Service Territory, 1900s–2020s

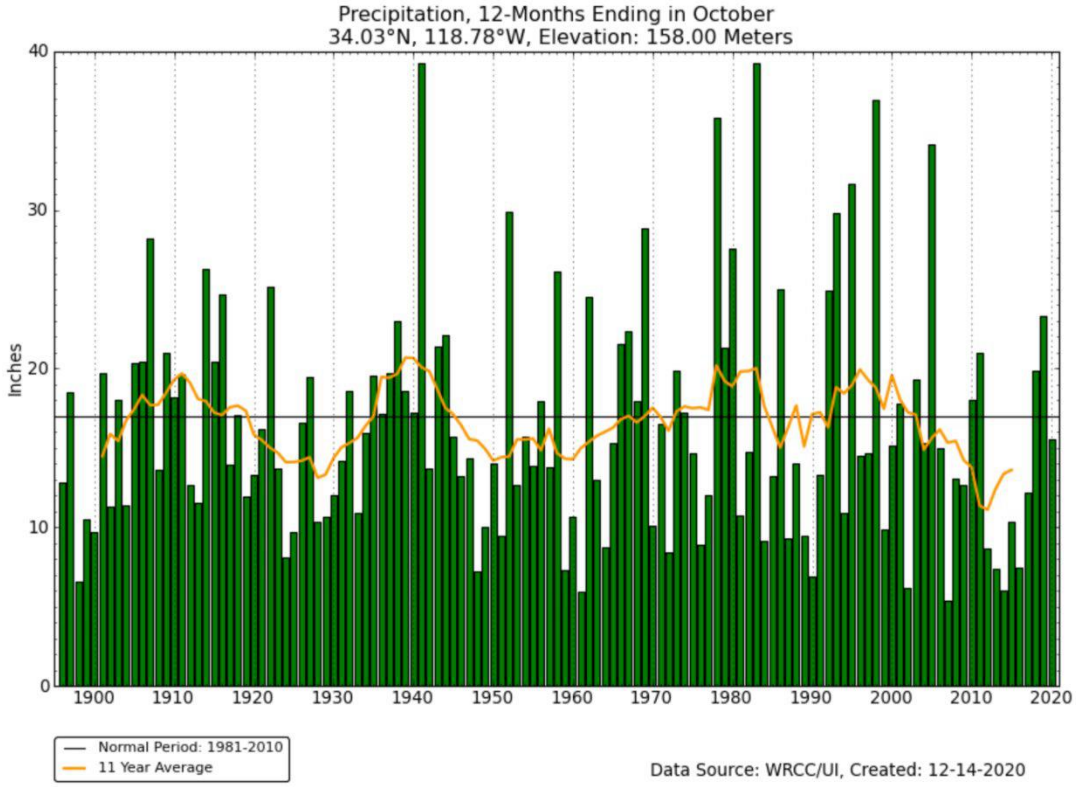


Figure 5-5. Example of Projected Change in Maximum Temperature (Daytime Highs) and Minimum Temperature (Nighttime Lows) Through 2100 for the Service Territory

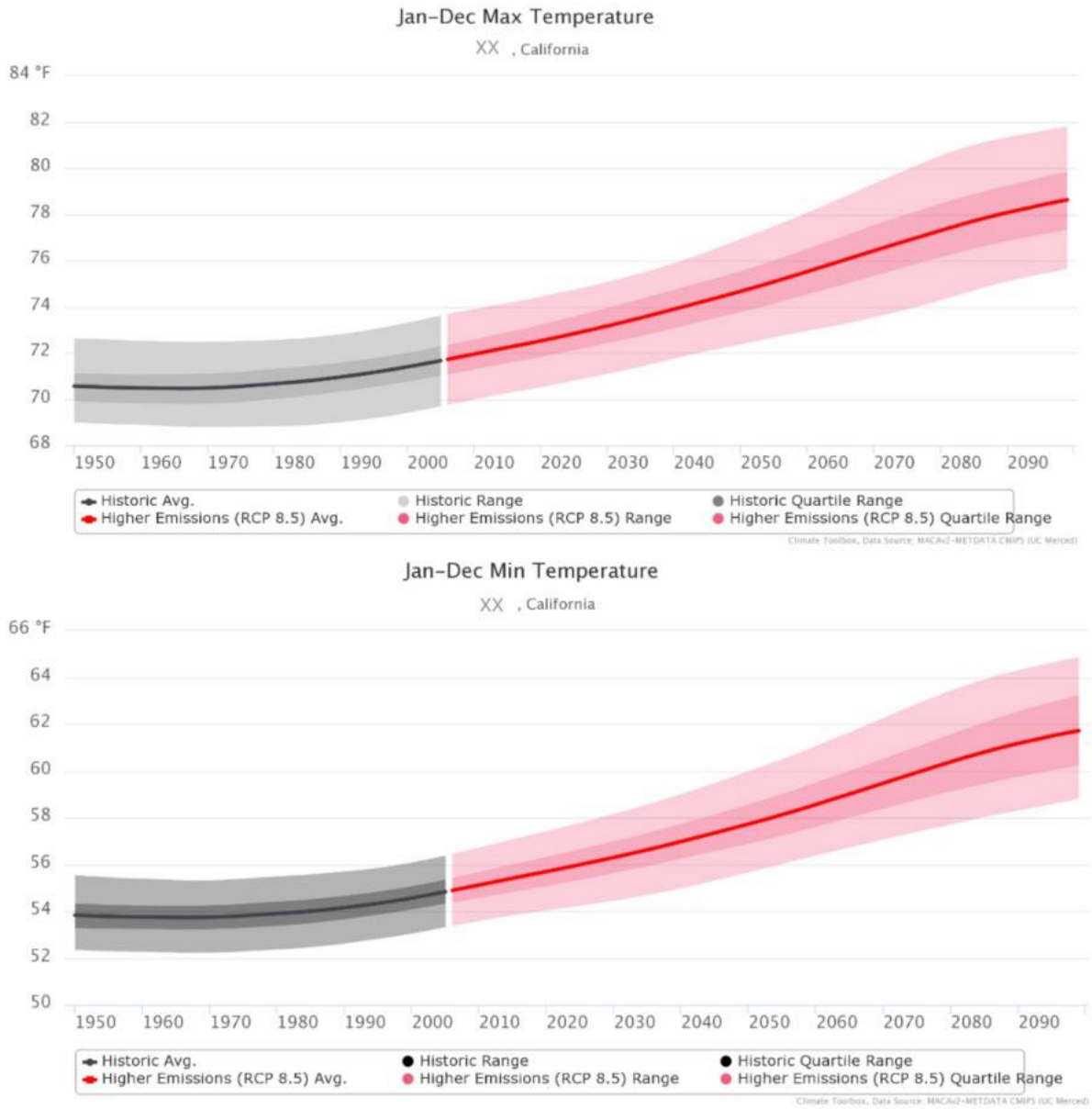


Figure 5-6. Example of Projected Changes in Average Fuel Moisture and Average Number of Days of Extreme Fire Danger for Winter/Spring and Summer/Fall Periods for the Service Territory Based on Global Climate Model Outputs

TBC utilized the climate tools available at https://climatetoolbox.org/ for Figures 5-3 to 5-6 below. In specific TBC used the Climate Toolbox's Historical Climate Tracker for Figures 5-3 and 5-4; the Future Time Series tool for Figure 5-5; and the Future Climate Dashboard for Figure 5-6. TBC notes that although the data reflects increased warming in the future, TBC is a transmission-only utility with no distribution system and no direct/retail customers and as such changes in climate have limited applicability to TBC's operations. Moreover since the majority of TBC's transmission infrastructure is underground or submerged, TBC's operations are unlikely to be materially impacted by the anticipated changes in climate.

Figure 5- 2. Mean Annual Temperature for Service Territory, 1980s–2020s

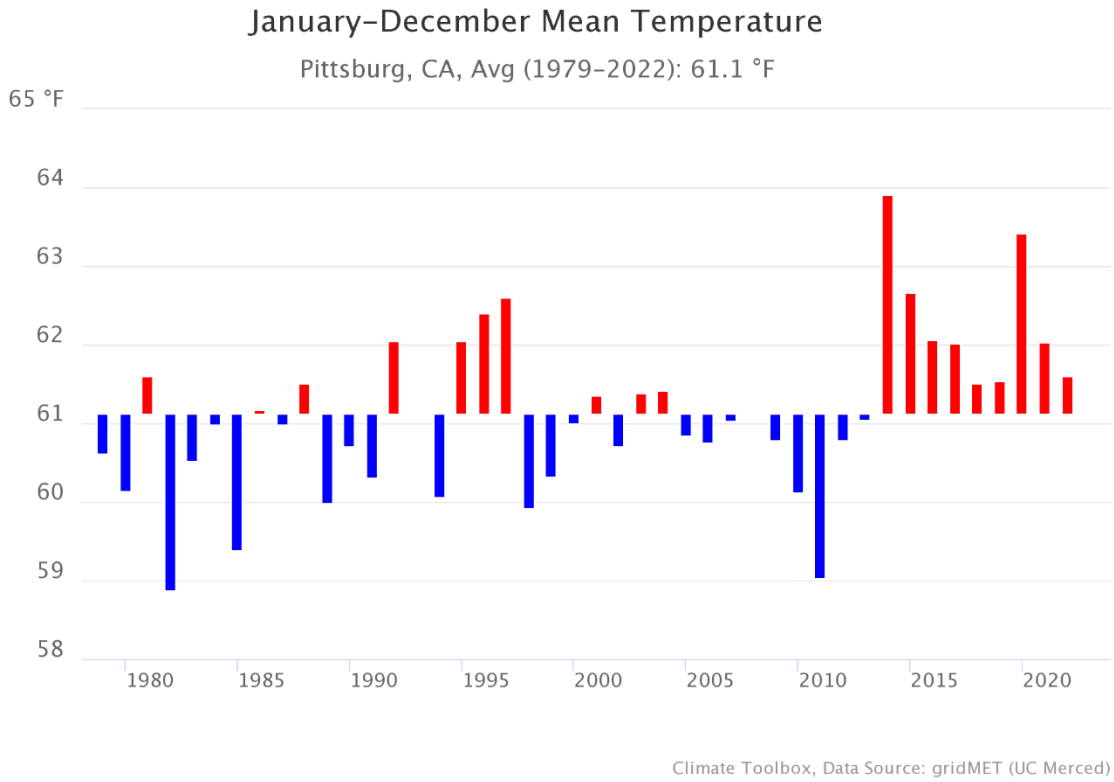


Figure 5- 3. Mean Annual Precipitation for Service Territory, 1980s–2020s

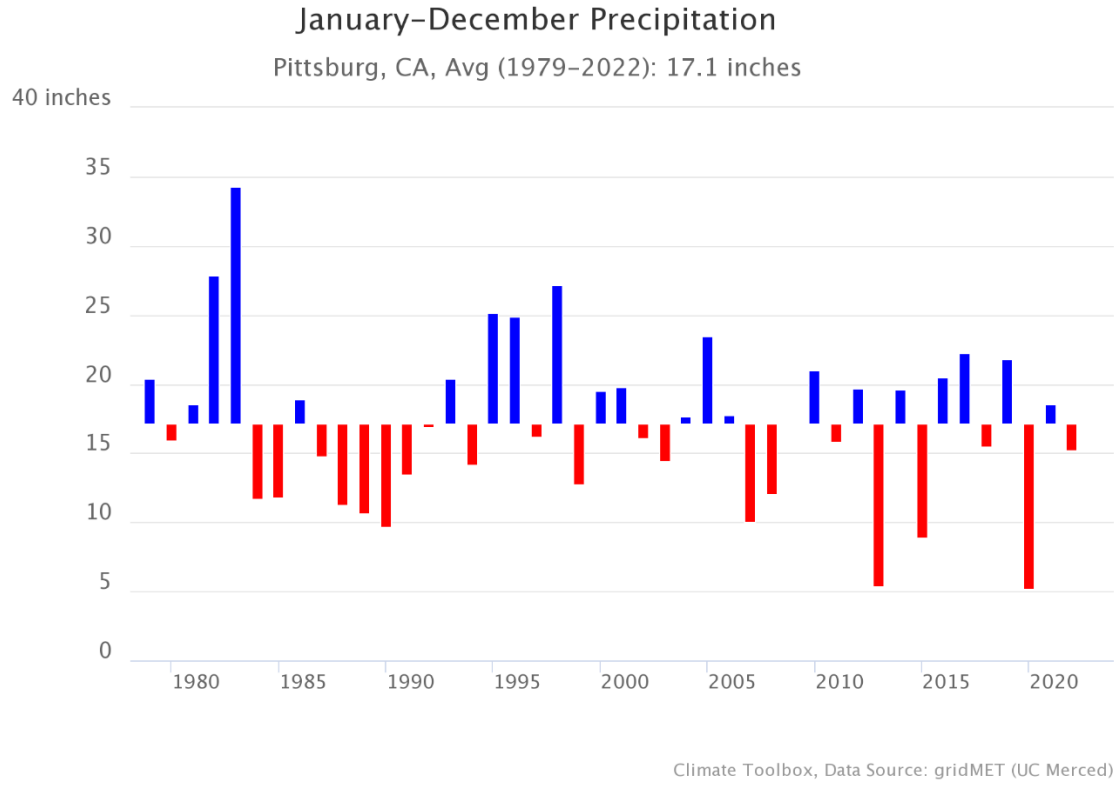


Figure 5- 4. Projected Change in Maximum Temperature (Daytime Highs) and Minimum Temperature (Nighttime Lows) Through 2100 for the Service Territory

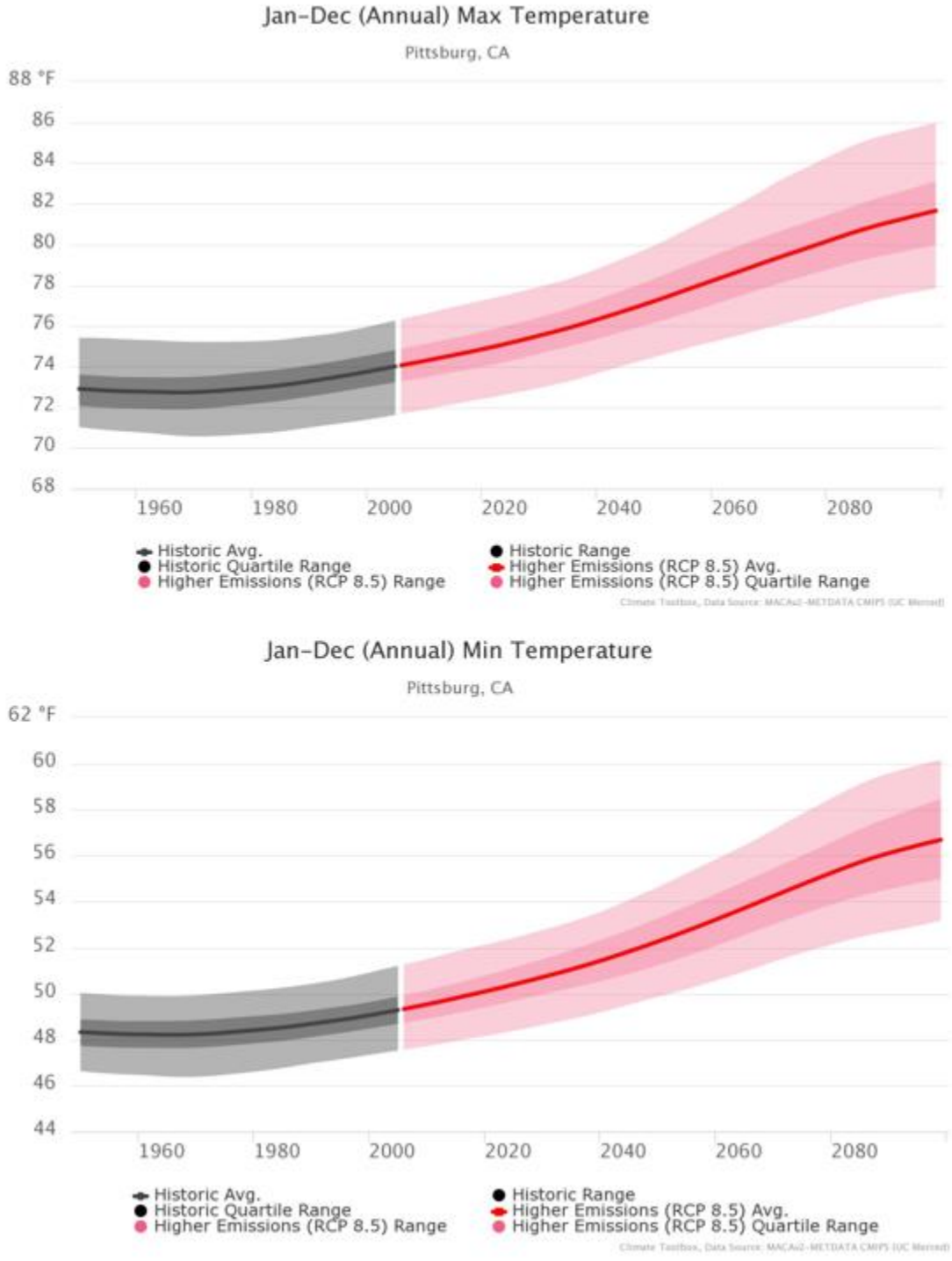
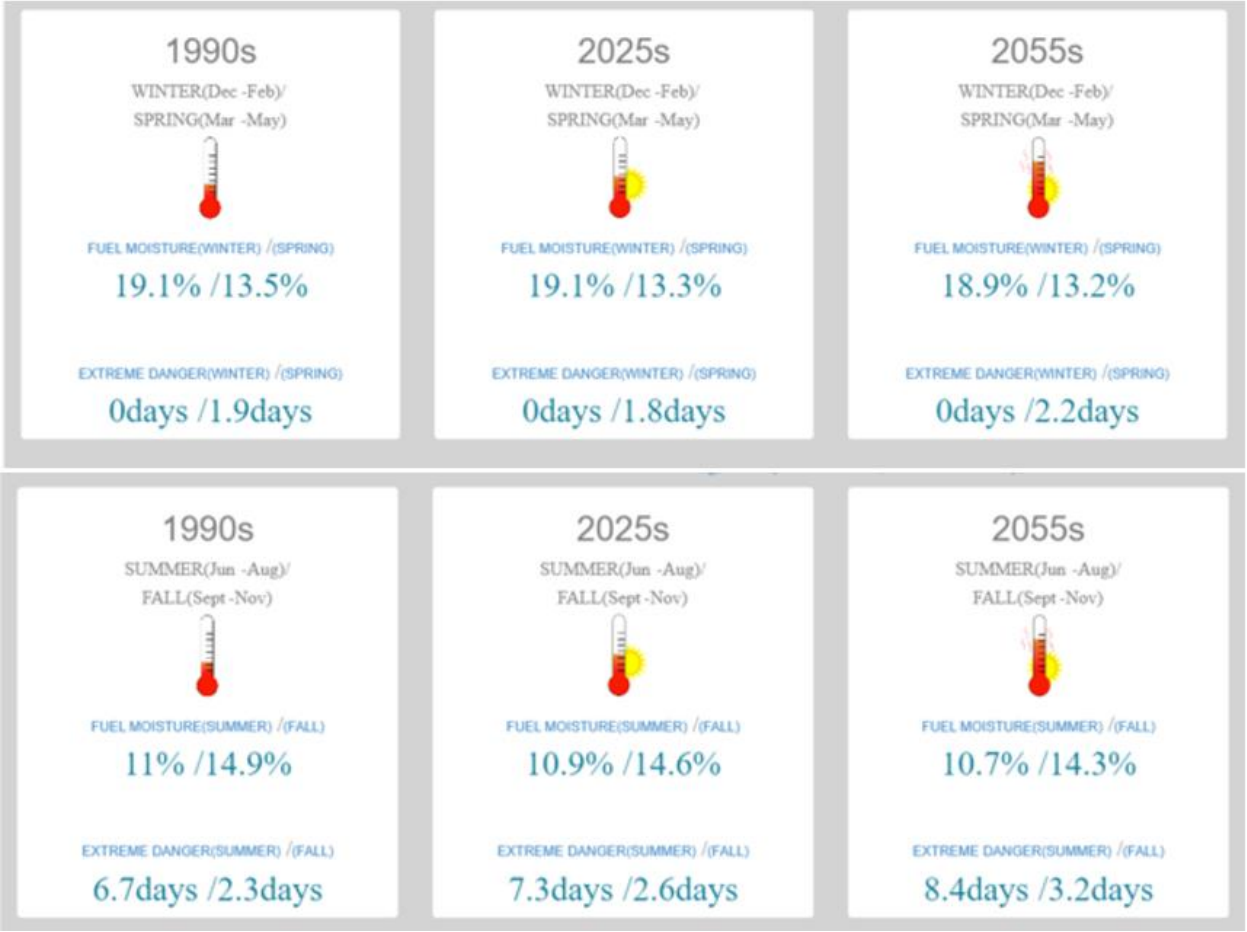


Figure 5- 5. Projected Changes in Average Fuel Moisture and Average Number of Days of Extreme Fire Danger for Winter/Spring and Summer/Fall Periods for the Service Territory Based on Global Climate Model Outputs

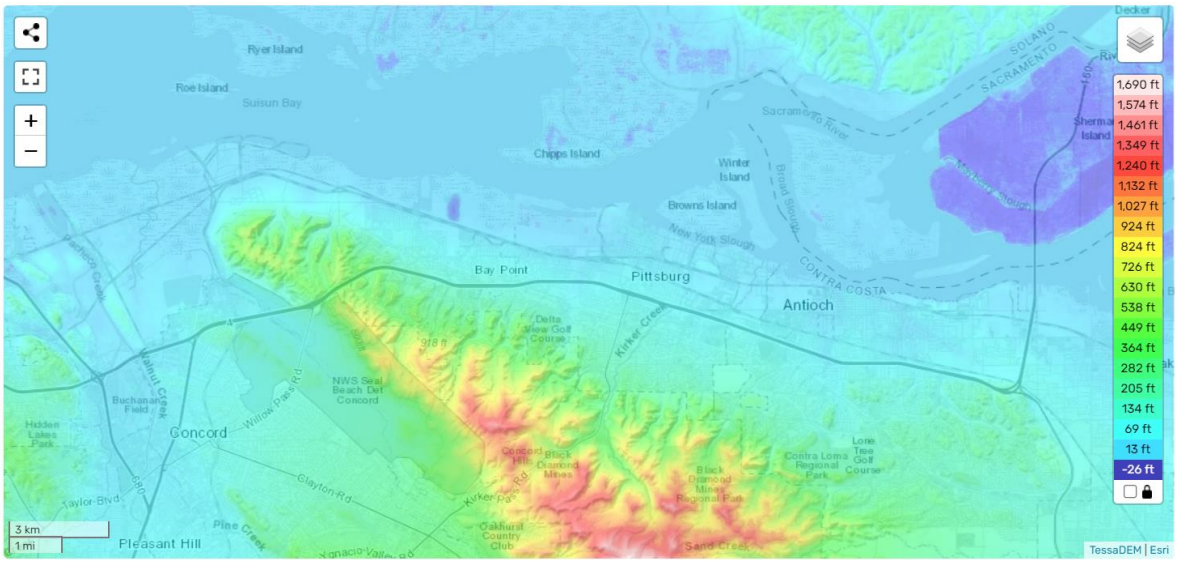


5.3.5 Topography

Instructions: *The electrical corporation must provide an overview and brief description of the various* topographic conditions across its service territory.

TBC's Pittsburg Converter Station is located on fairly flat land, less than two miles from the shores of the Sacramento River Delta. In the immediate vicinity of the station, slopes are generally flat to less than 5% incline. The area where the Pittsburg Converter Station is sited is generally less than 13 feet above sea level.

Figure TBC 5.3.5- 1 . Elevation contours in the immediate vicinity of the Pittsburg Converter Station[14]



5.4 Community Values at Risk

Instructions: *In this section of the WMP, the electrical corporation must identify the community values at risk across its service territory. Sections 5.4.1–5.4.5 provide detailed instructions.*[15]

5.4.1 Urban, Rural, and Highly Rural Customers

Instructions: *The electrical corporation must provide a brief narrative describing the distribution of urban, rural, and highly rural areas and customers across its service territory. Refer to Appendix A for definitions.*

TBC is an ITO that has transmission-only assets and does not have a service territory. As noted on page 7 of Energy Safety's ITO Supplement, ITOs do not have service territories. As such the reporting requirements for this Section 5.4.1 do not apply to ITOs such as TBC.

5.4.2 Wildland-Urban Interfaces

Instructions: *The electrical corporation must provide a brief narrative describing the wildland-urban interfaces (WUIs) across its service territory. Refer to Appendix A for definitions.*

TBC is an ITO that has transmission-only assets and does not have a service territory. As noted on page 7 of Energy Safety's ITO Supplement, ITOs do not have service territories. As such the reporting requirements for this Section 5.4.2 do not apply to ITOs such as TBC.

[14] https://en-us.topographic-map.com/map-vx51/San-Francisco/?center=38.02002%2C-21.90299&zoom=12&base=4

[15] *Annual information included in these sections must align with Table 7 of the QDR.*

5.4.3 Communities at Risk from Wildfire

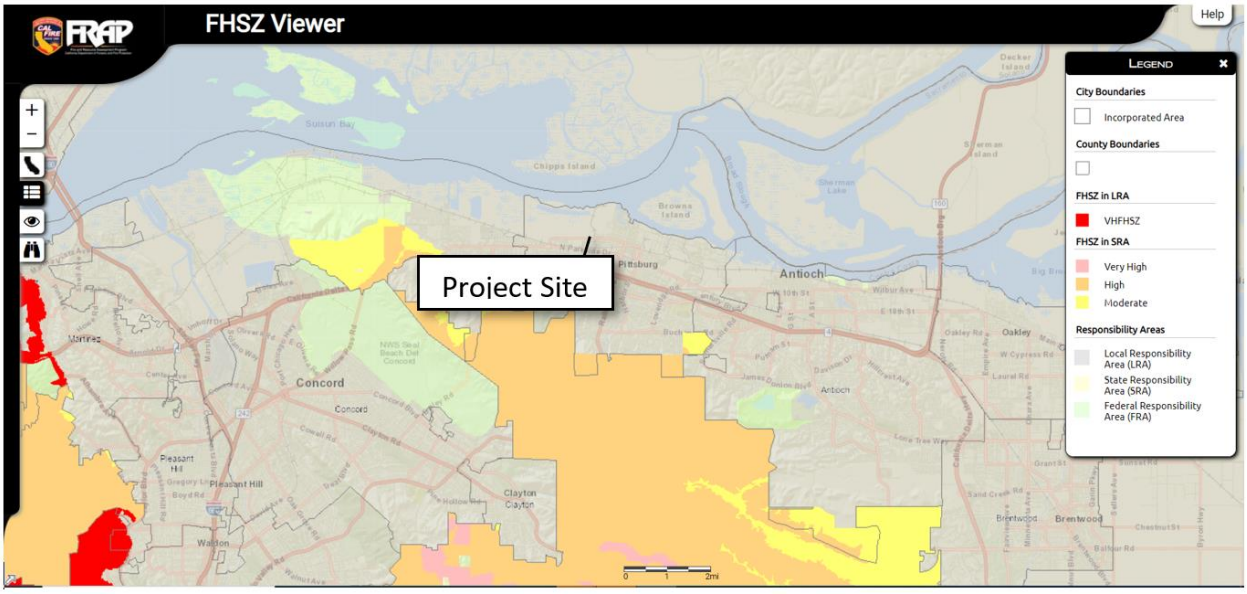
Instructions: *In this section of the WMP, an electrical corporation must provide a high-level overview of communities at risk from wildfire as defined by the electrical corporation (e.g., within the HFTD and HFRA). This includes an overview of individuals at risk, AFN customers, social vulnerability, and communities vulnerable because of single access/egress conditions within its service territory. Detailed instructions are provided below.*

TBC is an ITO that has transmission-only assets and does not have a service territory. As noted on page 8 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. ITOs are directed to provide a high-level overview of individuals at risk, communities at risk, AFN customers, social vulnerability, and communities vulnerable because of single access/egress conditions adjacent to their assets, rather than within their service territory.

The Trans Bay System is located towards the northwest corner of the City of Pittsburg and borders a five (5) acre decommissioned oil storage facility which contains various native and non-native species of trees, shrubs, and grasses but all cable infrastructure traversing the area is underground. The facility also borders light industrial business on both the east and west sides. In the past year, construction of a multi-family residential house complex has begun across the street. The City of Pittsburg has been designated communities at risk per Cal Fire.[16] However, the area surrounding the Pittsburg Converter Station is outside of any area identified with at least a moderate ranking on the Fire Hazard Severity Zone.

[16] https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/fire-plan/communities-at-risk/

Figure TBC 5.4.3- 1. Cal Fire Communities at Risk Map for in the area surrounding the Pittsburg Converter Station[17]



5.4.3.1 Individuals at Risk from Wildfire

Instructions: *The electrical corporation must provide a brief narrative (one to two paragraphs) describing the total number of people and distribution of people at risk from wildfire across its service territory.*

TBC has no end-use customers and does not have a service territory. However, TBC notes that the Trans Bay System is located towards the northwest corner of the City of Pittsburg and borders a five (5) acre decommissioned oil storage facility which contains various native and non-native species of trees, shrubs, and grasses but all cable infrastructure traversing the area is underground. The facility also border light industrial business on both the east and west sides. In the past year, construction of a multi-family residential house complex has begun across the street. The City of Pittsburg has a population of 76,500 according to the 2021 U.S. Census.[18] See also TBC's response to Section 5.4.3.

5.4.3.2 Social Vulnerability and Exposure to Electrical Corporation Wildfire Risk

Instructions: *The electrical corporation must provide a brief narrative describing the intersection of social vulnerability and community exposure to electrical corporation wildfire risk across its service territory. This intersection is defined as census tracts that 1) exceed the 70th percentile according to the Social Vulnerability Index (SVI) or have a median household income of less than*

[17] https://egis.fire.ca.gov/FHSZ/
[18] https://www.census.gov/quickfacts/pittsburgcitycalifornia

80 percent of the state median, and 2) exceed the 85th percentile in wildfire consequence risk according to the electrical corporation's risk assessment(s).[19]

For SVI, the electrical corporation must use the most up-to-date version of Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry's Social Vulnerability Index dataset (Year = 2018;[20] *Geography = California; Geography Type = Census Tracts).*[21]
In addition, the electrical corporation must provide a single geospatial map showing its service territory (polygon) overlaid with the distribution of the SVI and exposure intersection and urban and major roadways. Any additional maps needed to provide clarity and detail should be included in Appendix C.

TBC has no end-use customers and does not have a service territory. However, TBC has reviewed the census tract on the Hazard Exposure and Social Vulnerability Heat Map for the area adjacent to its Pittsburg Converter Station Facility. The station is on the border of two areas and both are shown below. (See areas highlighted in purple in Figure TBC 5.4.3- 2 and Figure TBC 5.4.3- 3 below). There are no communities meeting the intersection definition as stated above. The Pittsburg site is located in Census Tract 3090 where the wildfire consequence is below the 85th percentile, the SVI percentile is below the 70th percentile threshold and the median household income is slightly above the 80 percent state median (See Figure TBC 5.4.3- 2). The neighboring Census Tract, 3100, which starts directly across the street has a SVI percentile at slightly above the 70th percentile threshold and a median household income at the 80 percent state median, however the wildfire consequence is below the 85th percentile (See Figure TBC 5.4.3- 3).

[19] *These criteria are derived from Cal OES Recovery Division, Hazard Mitigation Assistance Branch's Multiple Hazards and Social Vulnerability Analysis, dated January 18, 2022: https://www.caloes.ca.gov/wp-content/uploads/Recovery/Documents/Socially-Vulnerable-and-High-Hazard-Risk-Community-Criteria.-Methodology.pdf & https://calema.maps.arcgis.com/apps/dashboards/3c78aea361be4ea8a21b22b30e613d6e*

[20] *As of the publishing of these Guidelines, 2018 was the most recent version of the dataset. Electrical corporations must use the most up-to-date version of the dataset.*

[21] *Centers for Disease Control and Prevention / Agency for Toxic Substances and Disease Registry Social Vulnerability Index Data and Documentation Download (https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html, accessed Oct. 11, 2022).*

Figure TBC 5.4.3- 2. Hazard Exposure and SVI Heat Map of Census of Area for Pittsburg Converter Station (Census Tract 3090)

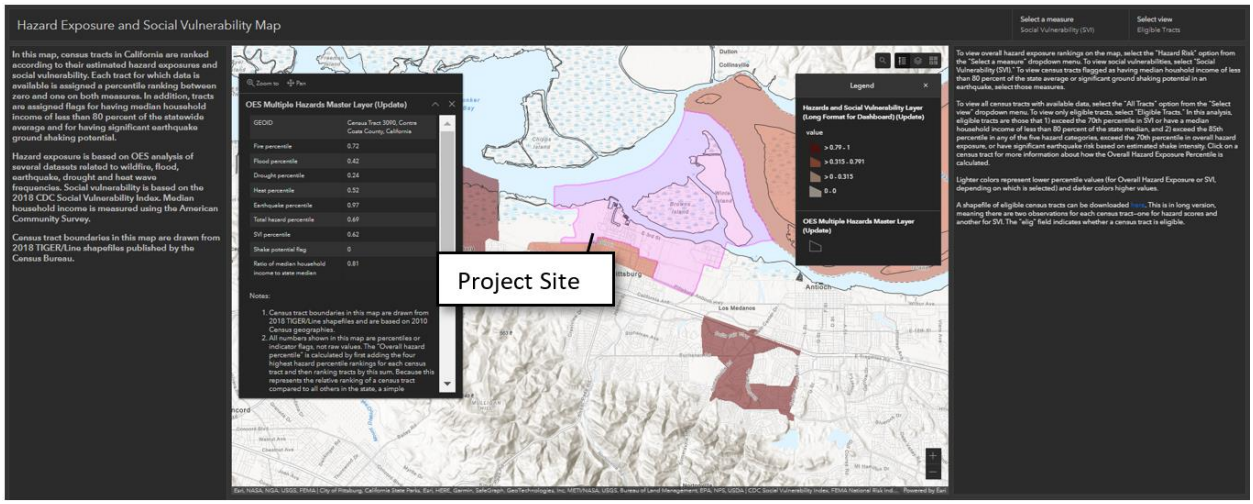
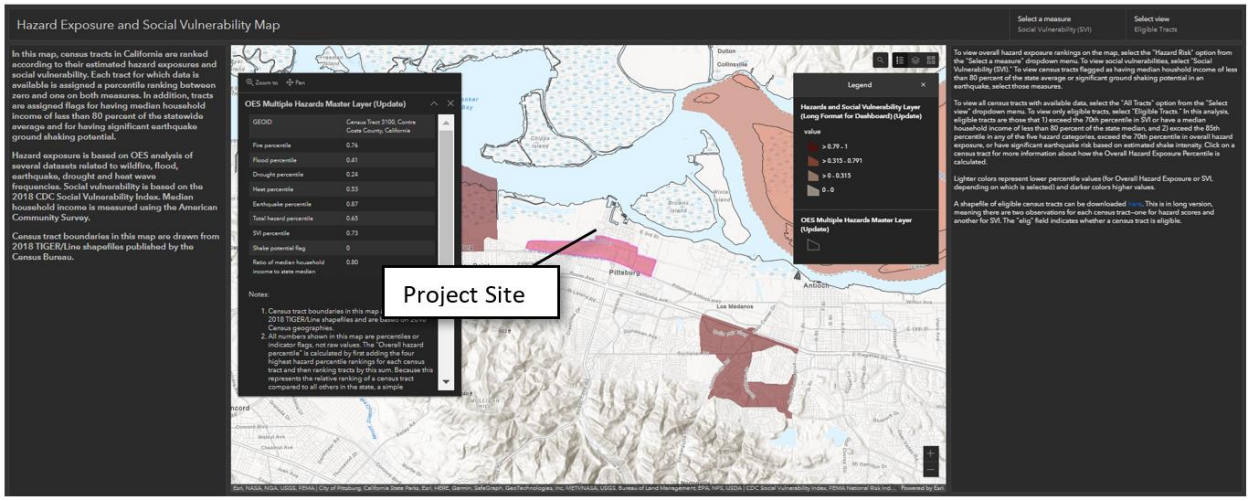


Figure TBC 5.4.3- 3. Hazard Exposure and SVI Heat Map of Census of Area adjacent to Pittsburg Converter Station (Census Tract 3100)



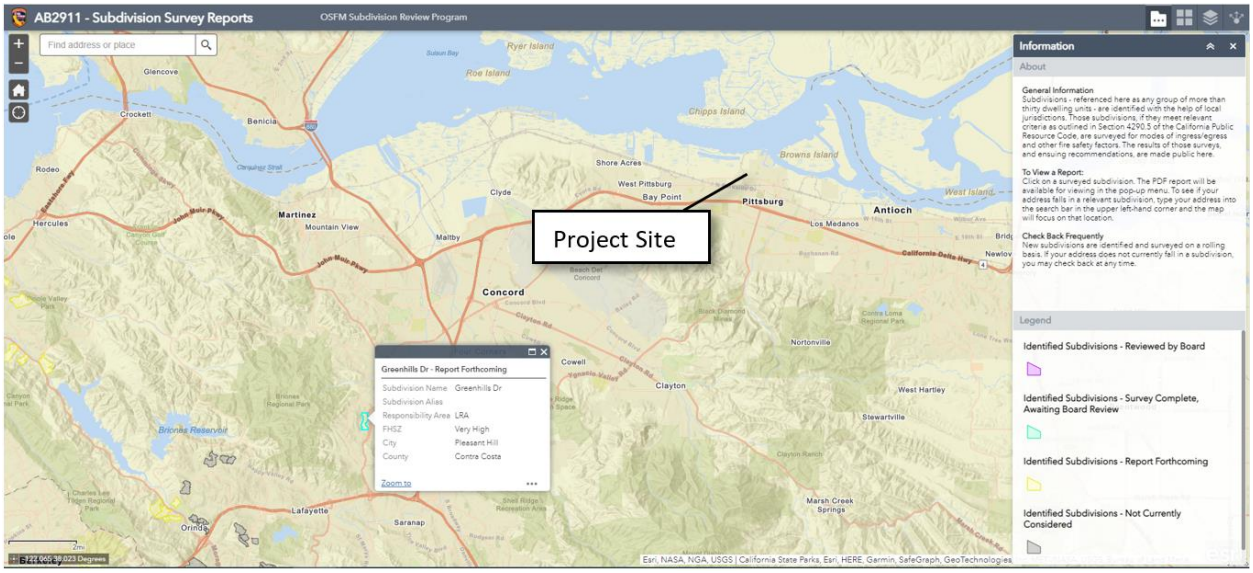
5.4.3.3 Sub-Divisions with Limited Egress or No Secondary Egress

Instructions: *The electrical corporation must provide a brief narrative overview (one to two paragraphs) describing sub-divisions with limited egress or no secondary egress, per CAL FIRE data,[22] across the electrical corporation's service territory.*

[22] *Board of Forestry and Fire Protection Subdivision Review Program (https://bof.fire.ca.gov/projects-and-programs/subdivision-review-program/, accessed Oct. 11, 2022).*

TBC has no end-use customers and does not have a service territory. However, TBC has reviewed the Board of Forestry and Fire Protection's (BOF) Subdivision Survey Report. There are no subdivisions with limited egress or no secondary egress with at least 15 miles of the Pittsburg Converter Station (see Figure TBC 5.4.3- 4 below).

Figure TBC 5.4.3- 4. BOF Subdivision Survey Report Area Adjacent to the Pittsburg Converter Station



5.4.4 Critical Facilities and Infrastructure at Risk from Wildfire

Instructions: *The electrical corporation must provide a brief narrative describing the distribution of critical facilities and infrastructure located in the HFTD/HFRA across its service territory. Critical facilities and infrastructure are defined in Appendix A.*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to but not sited in an area designated as a Tier 2 HFTD. All TBC assets are located in Non-HFTD areas. TBC is an ITO that has transmission-only assets and does not have a service territory.

5.4.5 Environmental Compliance and Permitting

Instructions: *In this section, the electrical corporation must provide a summary of how it ensures its compliance with applicable environmental laws, regulations, and permitting related to the implementation of its WMP. This overview must include:*

- *A description of the procedures/processes to ensure compliance with relevant environmental laws, regulations, and permitting requirements before and during WMP*

implementation. The process or procedure should include when consultation with permittees occurs (i.e., at what stage of planning and/or implementation of activities described in the WMP)

- *Roadblocks the electrical corporation has encountered related to environmental laws, regulations, and permitting related to implementation of its WMP and how the electrical corporation has addressed, is addressing, or plans to address the roadblocks.*
- *Any notable changes to its environmental compliance and permitting procedures and processes since the last WMP submission and a brief explanation as to why those changes were made. Include any planned improvements or updates to the initiative and the timeline for implementation.*

The electrical corporation must also provide a table (Table 5-6 provides an example) of potentially relevant state and federal agencies that may be responsible for discretionary approval of activities described in WMPs and the relevant environmental laws, regulations, and permitting requirements. If this table extends past two pages, provide the required information in an appendix.

Table 5-6: Example of Relevant State and Federal Environmental Laws, Regulations, and Permitting Requirements for Implementing the WMP

Environmental Law, Regulation, or Permit	***Responsible Permittee/Agency***
Endangered Species Act Section 10(a)(1)(B) Incidental Take Permit	*United States Fish and Wildlife Service*

TBC is an ITO that has transmission-only assets and does not have a service territory. TBC's Environmental Health and Safety Manager, Operations Manager and Regulatory and Business Manager are supported by corporate environmental services to address all environmental review, compliance and permitting. TBC does not have a service territory and has a limited footprint with no asset in a HFTD. As such all of TBC's prior wildfire mitigation enhancements are contained within the footprint of the Pittsburg Substation. TBC's two fire mitigation initiatives planned for the 2023-2025 WMP cycle do not require environmental permitting. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. As a result Table 5- 6 is marked "NA" meaning "Not Applicable".

Table 5- 6. Relevant State and Federal Environmental Laws, Regulations, and Permitting Requirements for Implementing the WMP

Environmental Law, Regulation, or Permit	**Responsible Permittee/Agency**
N/A	

RISK METHODLOGY AND ASSESSMENT

Instructions: *In this section of the WMP, the electrical corporation must provide an overview of its risk methodology, key input data and assumptions, risk analysis, and risk presentation (i.e., the results of its assessment). This information is intended to provide the reader with a technical understanding of the foundation for the electrical corporation's wildfire mitigation strategy for its Base WMP. Sections 6.1–6.7 below provide detailed instructions.*

6

For the 2023-2025 Base WMP, the electrical corporation does not need to have performed each calculation and analysis indicated in sections 6.2, 6.3, and 6.6. If the electrical corporation is not performing a certain calculation or analysis, it must describe why it does not perform the calculation or analysis, its current alternative to the calculation or analysis (if applicable), and any plans to incorporate those calculations or analyses into its risk methodology and assessment.

TBC is an ITO that has transmission-only assets and does not have a service territory or end-use customers. As noted on page 9 of Energy Safety's ITO Supplement, ITOs have significantly less infrastructure than large investor-owned utilities and small and multi-jurisdictional utilities and do not have end-use customers. Energy Safety notes that ITOs must comply with the requirements of Public Utilities Code sections 8386(c)8 and (12).[23] However, Energy Safety states that the level of detail required by Section 6 of the 2023-2025 WMP Guidelines regarding risk modeling is not required for ITOs. Instead ITOs must describe their own methods to determine risk.

Based on the foregoing, TBC's WMP does not include Sections 6.1 through 6.7. Instead TBC provides the following information pursuant to Energy Safety's direction on page 9 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)8

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. No portion of the System is sited in a HFTD. Since the beginning of its commercial operations, TBC has not deenergized any circuits to mitigate the risk of wildfire. TBC notes that its original system design included that all cable elements be either undergrounded or submerged.

[23] (8) "Identification of circuits that have frequently been deenergized pursuant to a deenergization event to mitigate the risk of wildfire and the measures taken, or planned to be taken, by the electrical corporation to reduce the need for, and impact of, future deenergization of those circuits, including, but not limited to, the estimated annual decline in circuit deenergization and deenergization impact on customers, and replacing, hardening, or undergrounding any portion of the circuit or of upstream transmission or distribution lines"; (12) "A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the electrical corporation's service territory, including all relevant wildfire risk and risk mitigation information that is part of the commission's Safety Model Assessment Proceeding (A.15-05-002, et al.) and the Risk Assessment Mitigation Phase filings."

Compliance with Public Utilities Code sections 8386(c)12

With respect to the CPUC's Risk Assessment Mitigation Phase (RAMP) and Safety Model and Assessment Proceedings (S-MAP), TBC is a transmission-only electrical corporation and public utility whose rates and cost recovery are regulated exclusively by the Federal Energy Regulatory Commission. As such, TBC does not utilize RAMP or S-MAP. TBC uses a FMEA methodology to assess wildfire risk, which was used to assess current processes/controls and inform wildfire mitigation measures.

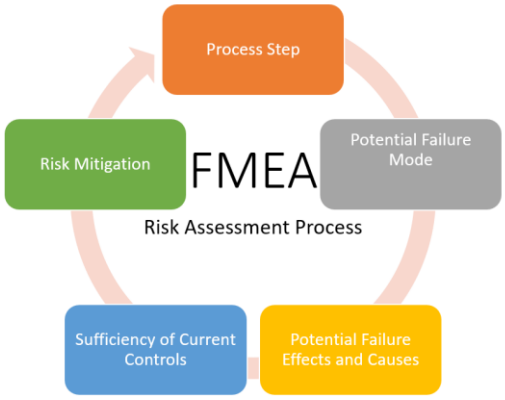
TBC's Methodology to Determine Risk

To inform appropriate wildfire hardening initiatives, TBC has conducted a comprehensive assessment of equipment using a FMEA and commissioned a third-party wildfire assessment that evaluated wildfire risk at the facility, modelled a hypothetical ignition event and associated wildfire propagation, and identified appropriate wildfire hardening improvements. The FMEA considers the potential failures from each System component and assesses and prioritizes the potential risk, along with providing potential mitigations.

The FMEA process is a risk assessment method developed by the National Aeronautics and Space Administration (NASA) as part of its Space Program, to identify potential failure modes, and assess and prioritize the overall risk presented by each failure mode. Risks are identified and ranked along three dimensions: Occurrence (likelihood of an event taking place); Severity (degree of impact of an event once it occurs); and Detection (ability to know when an event has occurred).

Through the FMEA process, TBC conducts in-depth evaluation of the facility electrical components to identify and prioritize risks and risk drivers, mitigate identified risks, and create a process for re-evaluating and reprioritizing these elements. Each component of the Trans Bay System is evaluated for its potential for failure, the effects from a failure, what typically causes a failure, what controls are in place to detect and prevent failure, what actions are taken to reduce the likelihood of failure and improve early detection, and who is responsible for implementing the actions.

Figure TBC 6- 1. FMEA Risk Assessment Process Cycle



This risk assessment method has become a standard and best practice in many industries, in the areas of product and process design, as well as in quality management and continuous improvement frameworks, such as Lean Six Sigma. The general process of this methodology as applied by TBC to identify and prioritize wildfire risks, drivers and mitigation measures consists of the following five steps:

- **Risk Identification**: for each major equipment component, a group of experienced subject matter experts (SMEs) brainstorm and capture all potential ways that the component could cause an ignition event (failure modes).
- **Risk Driver Identification**: for each identified failure mode, the SMEs brainstorm and capture all potential root causes (drivers).
- **Risk Prioritization**: each risk driver identified is assessed against a pre-determined scale for each of the three dimensions of Occurrence, Severity and Detection, to calculate a Risk Priority Number (RPN). The drivers are then ranked by RPN, with the higher RPNs representing the higher overall risks.
- **Risk Mitigation**: for each of the risk drivers identified, starting with the highest RPNs, the SMEs brainstorm to identify and capture cost-effective mitigation measures, and determine how to implement each measure and when.
- **Risk Assessment and Re-prioritization**: once measures have been developed, and implementation plans established for each risk driver, the RPN is recalculated and a re-ranking is done to determine the new higher priority risk drivers.

This process can be applied iteratively, which allows for further improvements and refinement of a specific plan over time. TBC is committed to continuous improvement of its wildfire strategy and thus annually refreshes the FMEA to reflect operational learnings from the field, learnings and best practices from other entities, innovation in wildfire-related mitigation measures, and participation in the CPUC's wildfire mitigation plan workshops.

As noted above, only TBC's Pittsburg converter station and connected underground AC and DC cables are adjacent to a Tier 2 HFTD. TBC has determined that its facilities location in San

Francisco have minimal fire-threat risk as the area is fully developed and urbanized. The San Francisco facilities are also not located in a HFTD or an area of increased wildfire risk per the CPUC's Fire-Threat Map. The submarine cable has no wildfire risk because it is completely submerged beneath the Bay Waters for approximately 53 miles (85 km). There are no other "known local conditions" that TBC monitors per GO 95, Rule 31.1.

With TBC's transmission infrastructure being fully underground or submerged, and outside wildlands and wildland urban interface locations, weather has minimal capacity to increase the potential risk of ignition from TBC's infrastructure. TBC's perspective on these trends is shaped by its limited scale and scope of operations in comparison to other reporting utilities whose expansive service territories encompass wildlands and WUI and have infrastructure more susceptible to these trends.

TBC's facilities utilize no overhead transmission lines. As a result, TBC does not have a Vegetation Management Plan (VMP) and is not required to maintain a VMP under the North American Electric Reliability Corporation (NERC) Reliability Standards or any CAISO maintenance requirements. TBC does undertake abatement of vegetative fuels on its converter stations, the cost of which is incorporated into landscape maintenance. The Pittsburg converter station is proximate to vegetative fuels in the form of a five (5) acre area which contains various native and non-native species of trees, shrubs, and grasses, however, all cable infrastructure traversing the area is underground. In this area, equipment derangement resulting from environmental or man-made events, not weather or fuel conditions, would be the primary driver for potential fire ignition.

Figure TBC 6- 2. Vegetative Fuels Proximate to Pittsburg Station

As noted above, TBC makes use of cable monitoring equipment to monitor cable status in real-time. Additionally, TBC employs a Geographic Information System that provides high accuracy geo-plots of all TBC facilities. This GIS also plots excavation notifications which helps to minimize

the likelihood of derangement due to uncoordinated excavations along the cable route. Lastly, the Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel.

In Q3 2022, TBC installed a weather station to enhance its situational awareness and weather condition monitoring. TBC also receives seven day weather forecasts with a wildfire risk index. Due to the limited scale and scope of TBC's operations, TBC does not employ other additional models for ignition probability, wildfire, and public safety power shut-off (PSPS) risk.

WILDFIRE MITIGATION STRATEGY DEVELOPMENT

Instructions: *In this section of the WMP, the electrical corporation must provide a high-level overview of its risk evaluation and process for deciding on a portfolio of mitigation initiatives to achieve maximum feasible[24] risk reduction and that meet the goal(s) and plan objectives stated in Sections 4.1–4.2, and wildfire mitigation strategy for 2023-2025. Sections 7.1 and 7.2 below provide detailed instructions.*

7

TBC is an ITO that has transmission-only assets and does not have a service territory or end-use customers. As noted on page 10 of Energy Safety's ITO Supplement, ITOs have significantly less infrastructure than large investor-owned utilities and SMJUs and do not have service territories. Energy Safety notes that ITOs do not have to utilizing modeling to develop their wildfire mitigation strategy. However, Energy Safety states that ITOs must describe their wildfire mitigation strategy, including the process they utilize to select mitigations.

Based on the foregoing, TBC's WMP does not include Sections 7.1 through 7.2. Instead TBC provides the following information pursuant to Energy Safety's direction on page 10 of Energy Safety's ITO Supplement.

TBC's asset footprint has not changed since the commencement of operations in 2010. As a result, TBC's wildfire mitigation strategy has not materially changed since the first iteration of its WMP in 2019. TBC's current approach to wildfire mitigation and overall fire prevention remains consistent with its 2020-2022 WMP cycle approach. Due to the limited scope and scale of TBC's operations, TBC makes no specific distinction between efforts to manage wildfire risk and those to ensure the overall safety and reliability of its operations. While informed by industry wildfire mitigation efforts, the activities TBC undertakes to ensure that fire protection and safety is maintained and enhanced in its facilities and infrastructure, are not exclusively undertaken for wildfire mitigation. TBC maintains no programs, staff, equipment, or infrastructure solely dedicated to wildfire mitigation. In the alternative, TBC maintains a robust Fire Prevention Program and operational practices in conjunction with the risk assessment and mitigation elements detailed in this plan that have the desired preventive/mitigative effect.

TBC's approach to determining how to manage wildfire risk is informed by industry best practices, work with experienced internal and external SMEs, and lessons learned through the annual WMP update process. TBC's strategies to manage wildfire risk are similar or related to strategies it undertakes to manage overall operational risks related to safety and reliability. Trans Bay uses the FMEA process to identify and mitigate wildfire-related risks potentially instigated by its transmission infrastructure. Given that TBC's Pittsburg substation is located near a Tier 2 HFTD, proximate to vegetative fuels (See Figure

[24] *"Maximum feasible" means, in accordance with Public Utilities Code section 326(a)(2), capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.*

TBC 6- 2) and in a seismically active area, TBC's fire and wildfire-related initiatives are primarily focused on infrastructure hardening, increased situational awareness, and effectiveness of fire-suppression capabilities.

As noted above, Trans Bay has assessed its transmission infrastructure and determined that its Pittsburg substation and locally connected infrastructure have the most relevant wildfire risk. Based on this determination, in 2020 TBC engaged a third-party wildfire mitigation assessment of its Pittsburg substation to augment its overall fire prevention strategy. TBC utilized this study to provide an initial baseline assessment of the fire harden capabilities of its substation design and equipment and review of planned initiatives to enhance fire protection and certain seismic upgrades to its main transformers. The study also afforded TBC with additional recommendations for consideration to enhance control measures for improvement of its fire protection schema and philosophy. TBC reviewed and included appropriate recommendations in its short term and mid-term capital program to improve operational safety and fire risk mitigation. In Q1 2022, TBC contracted with another third-party to provide second level review of the 2020 study to verify the effectiveness and further prioritize fire identified mitigation initiatives.

Due to the limited scale and scope of TBC's operations, the substantial hardening of TBC's transmission infrastructure to wildfire risks due to being underground or submerged and having no transmission infrastructure in wildlands or in a wildland urban interface (WUI), TBC does not maintain programs specifically geared towards wildfire mitigation. However, TBC does conduct operational safety and overall fire prevention planning which in some instances has the added effect of mitigating wildfire risk. TBC maintains a fire prevention plan, and associated procedures and training. These activities reflect the preventative strategies and actions currently emplaced for fire prevention, suppression, and operational response to emergency situations.

WILDFIRE MITIGATIONS

8.1 Grid Design, Operations, and Maintenance

8.1.1 Overview

8

Instructions: *In this section, the electrical corporation must identify objectives for the next 3- and 10-year periods, targets, and performance metrics related to the following grid design, operations, and maintenance programmatic areas:*

- *Grid design and system hardening*
- *Asset inspections*
- *Equipment maintenance and repair*
- *Asset management and inspection enterprise system(s)*
- *Quality assurance / quality control*
- *Open work orders*
- *Grid operations and procedures*
- *Workforce planning*

The design of TBC's transmission infrastructure provides inherent system hardening against wildfire risk. TBC's transmission infrastructure, in its simplest form, consists of two converter station sites connected by an underground/submerged armored cable bundle. Outside of the converter station sites, the cable is completely underground or submerged beneath the Bay Area waters for approximately 53 miles. The Trans Bay System is sited fully outside any HTFD or any reasonably foreseeable expansion of a HTFD. As such the cables are hardened or immune from causing a wildfire to occur as a result due to a fault or contact except in the circumstance of derangement due to uncoordinated excavations. The facility received upgrades in the 2020-2023 WMP cycle to improve situational awareness capabilities, significantly enhance seismic resiliency of its transformers and stationed onsite fire suppression resources. TBC plans to complete two additional site improvement projects in 2023 which will provide fire suppression capability to its spare parts building and an outdoor enclosure for compress gas cylinders. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. TBC will provide an update on any new wildfire mitigation objective(s) or initiative(s) in Energy Safety required quarterly reporting, e.g. QDR, QUI, Wildfire Mitigation Data Tables Template: Tables 1 – 15, with a fulsome update annually in its WMP update.

8.1.1.1 Objectives

Instructions: *Each electrical corporation must summarize the objectives for its 3-year and 10-year plans for implementing and improving its grid design, operations, and maintenance.[25] These summaries must include the following:*

- *Identification of which initiative(s) in the WMP the electrical corporation is implementing to achieve the stated objective, including Utility Initiative Tracking IDs*
- *Reference(s) to applicable codes, standards, and best practices/guidelines and an indication of whether the electrical corporation exceeds an applicable code, standard, or regulation*
- *Method of verifying achievement of each objective*
- *A target completion date*
- *Reference(s) to the WMP section(s) or appendix, including page numbers, where the details of the objective(s) are documented and substantiated*

This information must be provided in Table 8-1 for the 3-year plan and Table 8-2 for the 10-year plan. Examples of the minimum acceptable level of information are provided below.

Table 8-1. Example of Grid Design, Operations, and Maintenance Objectives (3-year plan)

Objectives for Three Years (2023–2025)	***Applicable Initiative(s), Tracking ID(s)***	***Applicable Regulations, Codes, Standards, and Best Practices (See Note)***	***Method of Verification (i.e., program)***	***Completion Date***	***Reference (section & page #)***
Update all asset inspection protocols to include assessment of covered conductor condition	*Distribution inspections - detailed, AI-1*	*GO 95, Detailed Distribution Inspection Protocol (Doc # XXXXX, version N)*	*Revised/ new version of protocols*	*February 2024*	*-*

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation and substantiation.

Table 8-2. Example of Grid Design, Operations, and Maintenance Objectives (10-year plan)

[25] *Annual information included in this section must align with Tables 1 and 12 of the QDR.*

Objectives for Ten Years (2026–2032)	*Applicable Initiative(s), Tracking ID(s)*	*Applicable Regulations, Codes, Standards, and Best Practices (See Note)*	*Method of Verification (i.e., program)*	*Completion Date*	*Reference (section & page #)*
Update all asset inspection protocols to include assessment of covered conductor condition	*Distribution inspections - detailed, AI-1*	*GO 95, Detailed Distribution Inspection Protocol (Doc # XXXXX, version N)*	*Revised/ new version of protocols*	*February 2024*	*-*

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

TBC has two wildfire mitigation objectives for the 2023-2025 WMP Cycle. TBC will be completing the installation of an outdoor compressed gas cylinder housing to store compressed gas and the installation of a suppression system in its spare parts building at the Pittsburg Converter station. TBC expects both projects to be completed in the 2023 calendar year. TBC has no other current projects planned for the remaining 2023-2025 WMP cycle. Both objectives are reflected in Table 8- 1.

Table 8- 1.Grid Design, Operations, and Maintenance Objectives (3-year plan)

Objectives for Three Years (2023–2025)	**Applicable Initiative(s), Tracking ID(s)**	**Applicable Regulations, Codes, Standards, and Best Practices (See Note)**	**Method of Verification (i.e., program)**	**Completion Date**	**Reference (section & page #)**
Compressed gas cylinder housing	002	NA	Project in service	6/30/2023	Section 8.1.2, pg. 66
Spare Parts Building Suppression System	007	NA	Project in service	6/30/2023	Section 8.1.2, pg. 66

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation and substantiation.

TBC currently has no planned grid design, operations or maintenance objectives for the 2026-2032 time period that impacts fire risk reduction. TBC's remaining objective is to monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed and will update as required in future WMPs. As a result, Table 8- 2 is marked N/A meaning "Not Applicable".

Table 8- 2. Grid Design, Operations, and Maintenance Objectives (10-year plan)

Objectives for Ten Years (2026–2032)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

8.1.1.2 Targets

Instructions: *Initiative targets are forward-looking quantifiable measurements of activities identified by each electrical corporation in its WMP. Electrical corporations will show progress toward completing targets in subsequent reports, including QDRs and WMP Updates.*

The electrical corporation must list all targets it will use to track progress on its grid design, operations, and maintenance for the three years of the Base WMP. Energy Safety's Compliance Assurance Division and third parties must be able to track and audit each target.[26] For each initiative target, the electrical corporation must provide the following:

- *Utility Initiative Tracking IDs.*
- *Projected targets for each of the three years of the Base WMP and relevant units.*
- *Quarterly, rolling targets for 2023 and 2024 (inspections only).*
- *The expected "x% risk impact" for each of the three years of the Base WMP. The expected x% risk impact is the expected percentage risk reduction per year, as described in Section 7.2.2.2.*
- *Method of verifying target completion.*

[26] *Annual information included in this section must align with Table 1 of the QDR.*

The electrical corporation's targets must provide enough detail to effectively inform efforts to improve the performance of the electrical corporation's grid design, operations, and maintenance initiatives.

Table 8-3 and Table 8-4 below provide examples of the minimum acceptable level of information.

Table 8-3. Example of Grid Design, Operations, and Maintenance Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
Expulsion fuse replacement	*GH-1*	*500 Fuses Replaced*	*20%*	*600 Fuses Replaced*	*20%*	*700 Fuses Replaced*	*20%*	*Completed work orders/ GIS Data Submission(s)*

Table 8-4. Example of Asset Inspections Targets by Year

Initiative Activity	Tracking ID	Target End of Q2 2023 & Unit	Target End of Q3 2023 & Unit	End of Year Target 2023 & Unit	x% Risk Impact 2023	Target End of Q2 2024 & Unit	Target End of Q3 2024 & Unit	End of Year Target 2024 & Unit
Discretionary patrols in HFTD	*AI-02*	*300 circuit miles*	*500 circuit miles*	*700 circuit miles*	*3%*	*300 circuit miles inspected*	*500 circuit miles inspected*	*700 circuit miles inspected*

TBC has two wildfire mitigation targets for the 2023-2025 WMP Cycle. TBC will be completing the installation of an outdoor compressed gas cylinder housing to store compressed gas and the installation of a suppression system in its spare parts building at the Pittsburg Converter station. TBC expects both projects to be completed in the 2023 calendar year. TBC has no other current projects planned for the remaining 2023- 2025 WMP cycle. The completion of the two aforementioned initiatives are identified in Table 8- 3 below for 2023. The remaining inputs in Table 8- 3 are identified as N/A meaning "Not Applicable" as TBC has no other currently planned grid design, operations or maintenance initiatives impacting fire risk reduction for the 2023-2025 WMP cycle.

Table 8- 3. Grid Design, Operations, and Maintenance Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
Compressed gas cylinder housing	002	1	NA	NA	NA	NA	NA	Project in service
Spare Parts Building Suppression System	007	1	NA	NA	NA	NA	NA	Project in service

As part of TBC's standard maintenance practices, TBC operations staff conduct weekly and monthly inspections of the Pittsburg Converter station. The cable is monitored 24/7 via a real time cable monitoring system. The above are routine practices by TBC and are not WMP initiatives and thus are not reflected in Table 1 of the QDR. As such Table 8- 4 is marked as N/A meaning "Not Applicable" since TBC does not have any asset inspections that are initiative activities. TBC notes that its routine inspections are identified in Table 8- 6 in Section 8.1.3.

Table 8- 4. Asset Inspections Targets by Year

Initiative Activity	Tracking ID	Target End of Q2 2023 & Unit	Target End of Q3 2023 & Unit	End of Year Target 2023 & Unit	x% Risk Impact 2023	Target End of Q2 2024 & Unit	Target End of Q3 2024 & Unit	End of Year Target 2024 & Unit
N/A								

8.1.1.3 Performance Metrics Identified by the Electrical Corporation

Instructions: *Performance metrics indicate the extent to which an electrical corporation's Wildfire Mitigation Plan is driving performance outcomes. The electrical corporation must:*

- *List the performance metrics the electrical corporation uses to evaluate the effectiveness of its grid design, operations, and maintenance in reducing wildfire and PSPS risk*[27]

For each of these performance metrics listed, the electrical corporation must:

- *Report the electrical corporation's performance since 2020 (if previously collected)*

[27] *There may be overlap between the performance metrics the electrical corporation uses and performance metrics required by Energy Safety. The electrical corporation must list these overlapping metrics in this section in addition to any unique performance metrics it uses.*

- *Project performance for 2023-2025*
- *List method of verification*

The electrical corporation must ensure that each metric's name and values are the same in its WMP reporting as its QDR reporting (specifically, QDR Table 2 and QDR Table 3). Metrics listed in this section that are the same as performance metrics required by Energy Safety and reported in QDR Table 2 (Performance Metrics)[28] must match those reported in QDR Table 2. Metrics listed in this section that are not the same as any of the performance metrics identified by Energy Safety and reported in QDR Table 2 must match those reported in QDR Table 3.

The electrical corporation must:

- *Summarize its self-identified performance metrics in tabular form*
- *Provide a brief narrative that explains trends in the metrics*

Table 8-5 provides an example of the minimum acceptable level of information.

Table 8-5. Example of Grid Design, Operations, and Maintenance Performance Metrics Results by Year

Performance Metrics	***2020***	***2021***	***2022***	***2023 Projected***	***2024 Projected***	***2025 Projected***	***Method of Verification (e.g., third-party evaluation, QDR)***
Equipment-caused ignitions							
Equipment-caused outages							
Grid inspection findings							
Open work orders (tags)							

TBC began commercial operations of the Trans Bay System in November 2010. Since the start of commercial operations, TBC has had no instigation of ignition by utility equipment and no incidents of utility-equipment caused fire. TBC projects the trend of zero (0) utility-equipment instigated ignitions to continue through the 2023-2025 WMP cycle and beyond given (i) the fire-harden grid design of the Trans Bay System, (ii) site improvements in the 2020-2022 WMP cycle, (iii) enhanced situational awareness capabilities, (iv) enhanced grid design, (v) limited scope of operations and (vi) no assets sited in a HFTD. The metrics cited below are the same as performance metrics required by Energy Safety and reported in QDR Table 2 and Table 3.

[28] *The performance metrics identified by Energy Safety are included in Energy Safety's Data Guidelines.*

Table 8- 5. Grid Design, Operations, and Maintenance Performance Metrics Results by Year

Performance Metrics	2020	2021	2022	2023 Projected	2024 Projected	2025 Projected	Method of Verification (e.g., third-party evaluation, QDR)
Equipment-caused ignitions	0	0	0	0	0	0	QDR reporting
Equipment-caused outages	0	0	0	0	0	0	QDR reporting
Grid inspection findings	0	0	0	0	0	0	QDR reporting
Open work orders (tags)	0	0	0	0	0	0	QDR reporting
Value of assets destroyed by utility-related ignitions, listed by asset type	0	0	0	0	0	0	QDR reporting
Structures damaged or destroyed by utility-related ignitions	0	0	0	0	0	0	QDR reporting
Acreage burned by utility-related ignitions	0	0	0	0	0	0	QDR reporting
Fatalities resulting from utility wildfire mitigation initiatives	0	0	0	0	0	0	QDR reporting
OSHA-reportable injuries from utility wildfire mitigation initiatives	0	0	0	0	0	0	QDR reporting

8.1.2 Grid Design and System Hardening

Instructions: *In this section the electrical corporation must discuss how it is designing its system to reduce ignition risk and what it is doing to strengthen its distribution, transmission, and substation infrastructure to reduce the risk of utility-related ignitions resulting in catastrophic wildfires.*

The electrical corporation is required, at a minimum, to discuss grid design and system hardening for each of the following mitigation activities:

1. *Covered conductor installation*
2. *Undergrounding of electric lines and/or equipment*
3. *Distribution pole replacements and reinforcements*
4. *Transmission pole/tower replacements and reinforcements*
5. *Traditional overhead hardening*
6. *Emerging grid hardening technology installations and pilots*
7. *Microgrids*
8. *Installation of system automation equipment*
9. *Line removal (in the HFTD)*
10. *Other grid topology improvements to minimize risk of ignitions*
11. *Other grid topology improvements to mitigate or reduce PSPS events*
12. *Other technologies and systems not listed above*

In Sections 8.1.2.1 through 8.1.2.12, the electrical corporation must provide a narrative including the following information for each grid design and system hardening mitigation activity:

- ***Utility Initiative Tracking ID.***
- ***Overview of the activity:*** *A brief description of the activity including reference to related objectives and targets. Additionally, the overview must identify whether the activity is a program, project, pilot, or study.*
- ***Impact of the activity on wildfire risk.***
- ***Impact of the activity on PSPS risk.***
- ***Updates to the activity:*** *Changes to the initiative since the last WMP submission and a brief explanation as to why those change were made. Discuss any planned improvements or updates to the activity and the timeline for implementation.*

The design of TBC's transmission infrastructure provides inherent system hardening against wildfire risk. TBC's transmission infrastructure, in its simplest form, consists of two converter station sites connected by an underground/submerged armored cable bundle. Outside of the converter station sites, the cable is completely underground or submerged beneath the Bay Area waters for approximately 53 miles. The Trans Bay System is sited fully outside any HTFD or any reasonably foreseeable expansion of a HTFD. As such the cables are hardened or immune from causing a wildfire to occur as a result due to a fault or contact except in the circumstance of derangement due to uncoordinated excavations. TBC employs a

Geographic Information System that provides high accuracy geo-plots of all TBC's facilities. This system also plots excavation notifications which helps to minimize the likelihood of derangement due to uncoordinated excavations all the cable route. TBC's facility does not utilize any overhead lines.

TBC's above ground air insulated conductoring and bus-work infrastructure are fully contained within the boundaries of its converter stations. The converter stations construction and configuration are largely the same with some differences in layout. They are surrounded by a twelve (12) foot concrete perimeter wall that is equipped with motion sensors and inward and outward facing cameras. There are also local fire department approved fire lanes completely around the site inside the perimeter wall. Each site contains Knox boxes accessible to Emergency Services. The converter stations as also equipped with monitoring, detection, alarm, and suppression systems that have been implemented and maintained per applicable codes and statutes and are periodically inspected and approved by the local fire department. TBC is also completing installation of a fire suppression system in its spare parts building. TBC is actively undertaking efforts to transition its Pittsburg substation to SF6-free Gas Insulated Substation technology (pending commercial availability) which will reduce reliance upon air insulated conductoring and bus-work that are more susceptible to producing ignition events due to contact. In 2021, TBC completed installation of seismic improvements to its transformers. The seismic upgrades included the positioning of all site transformers on base isolators which significantly improves the capability of the transformers to resist derangement during a seismic event; thus, reducing the likelihood of instigation of a transformer fire.

Figure TBC 8.1.2- 1. Perimeter Wall and Cameras

Figure TBC 8.1.2- 2. Fire Land and Perimeter Wall

Figure TBC 8.1.2- 3. Hardscaped AC yard

Figure TBC 8.1.2- 4. Hardscaped DC yard

Figure TBC 8.1.2- 5. Transformer on Seismic Base Isolator

Figure TBC 8.1.2- 6. Close up of Isolator

TBC primarily relies on the protective systems intrinsic to the HVDC Modular Multilevel Voltage Source converter utilizing Siemens PLUS controls which implements protective "blocking" within microseconds of a fault and will initiate a trip offline within milliseconds which is comparable to fast-curve and sensitive relay settings; significantly faster than traditional interrupting devices employed in other transmission systems. Additionally, there is a manual shutdown button in each of the system's three (3) control rooms (2 in Pittsburg, 1 in San Francisco) that is easily accessible to the 24-hour System Operator, who is certified and qualified to initiate emergency procedures for system shutdown. TBC also employs industry standard fault interruption methods via circuit breakers, protective relays, and surge arrestors.

While not specifically grid design, TBC will be completing two projects designed to reduce overall fire risk at the Pittsburg Converter Station. Firstly, TBC will complete the installation of an outdoor

compressed gas cylinder housing to store compressed gas utilized by equipment for conducting various tasks and supporting maintenance. Outdoor storage of compressed gas cylinders will reduce the likelihood of such containers igniting a fire if they malfunction and are stored indoors. Secondly, TBC will be completing the installation of a fire suppression system in its spare parts building at the Pittsburg Converter station. The spare parts building currently utilizes a fire detection system, and the addition of a suppression system will reduce the likelihood of promulgating outside of the building TBC expects both projects to be completed in the 2023 calendar year. These efforts are in furtherance of reducing general fire risk at the Pittsburg Converter Station.

8.1.3 Asset Inspections

Instructions: *In this section, the electrical corporation must provide an overview of its procedures for inspecting its assets.*

The electrical corporation must first summarize details regarding its vegetation management inspections in Table 8-6. The table must include the following:

- ***Type of inspection****: i.e., distribution, transmission, or substation*
- ***Inspection program name:*** *Identify various inspection programs within the electrical corporation*
- ***Frequency or trigger****: Identify the frequency or triggers, such as inputs from the risk model. Indicate differences in frequency or trigger by HTFD Tier, if applicable*
- ***Method of inspection****: Identify the methods used to perform the inspection (e.g., patrol, detailed, aerial, climbing, and LiDAR)*
- ***Governing standards and operating procedures****: Identify the regulatory requirements and the electrical corporation's procedures for addressing them*

Table 8-6. Example of Asset Inspection Frequency, Method, and Criteria

Type	***Inspection Program***	***Frequency or Trigger (Note 1)***	***Method of Inspection (Note 2)***	***Governing Standards & Operating Procedures***
Transmission				
Distribution				
Substation				

Note 1: The electrical corporation must provide electrical corporation-specific risk-informed triggers used for asset inspections.
Note 2: The electrical corporation must provide electrical corporation-specific definitions of the different methods of inspection.

The electrical corporation must then provide a narrative overview of each vegetation inspection program identified in the above table; Sections 8.2.2.1. provides instructions for the overviews. The sections should be numbered 8.1.3.1 to Section 8.1.3.n (i.e., each vegetation inspection program is detailed in its own section).The electrical corporation must include inspection programs it is discontinuing or has

discontinued since the last WMP submission; in these cases the electrical corporation must explain why the program is being discontinued or has been discontinued.

TBC conducts weekly inspection of its converter stations using a formal checklist which includes line items that specifically address fire suppression system functionality, high-voltage equipment condition, and general facility condition. On a monthly basis, TBC conducts inspection of the land cable infrastructure at the AC and DC termination points and the sea/land joint pits using formal checklist which includes line items that specifically address cable integrity and circumstances that could lead to loss of cable integrity. The aforementioned inspections are additive to the System's continuous monitoring capabilities, including the real time cable monitoring system.

Table 8- 6. Asset Inspection Frequency, Method, and Criteria

Type	Inspection Program	Frequency or Trigger (Note 1)	Method of Inspection (Note 2)	Governing Standards & Operating Procedures
Substation	Weekly Inspection	Routine Weekly Inspection/Assessment	Patrol and visual inspection	TBC-MP-003
Land Cable	Monthly	Routine Monthly	Visual inspection	TBC Submarine and Land Cable Maintenance Practices

8.1.3.1 [Asset Inspections Program]

Instructions:

Process

In this section, the electrical corporation must provide an overview of the individual asset inspection program, including inspection criteria and the various inspection methods used for each inspection program.

Include relevant visuals and graphics depicting the workflow and decision-making process the electrical corporation uses for the inspection program (see the example in Figure 8-1).

Frequency or Trigger

In this section, the electrical corporation must identify the frequency (including how frequency may differ by HFTD Tier or other risk designation[s]) or triggers used in the inspection program, such as inputs from the risk model.

If the inspection program is schedule-based, the electrical corporation must explain how it uses risk prioritization in the scheduling of the inspection program to target high-risk areas. If the electrical

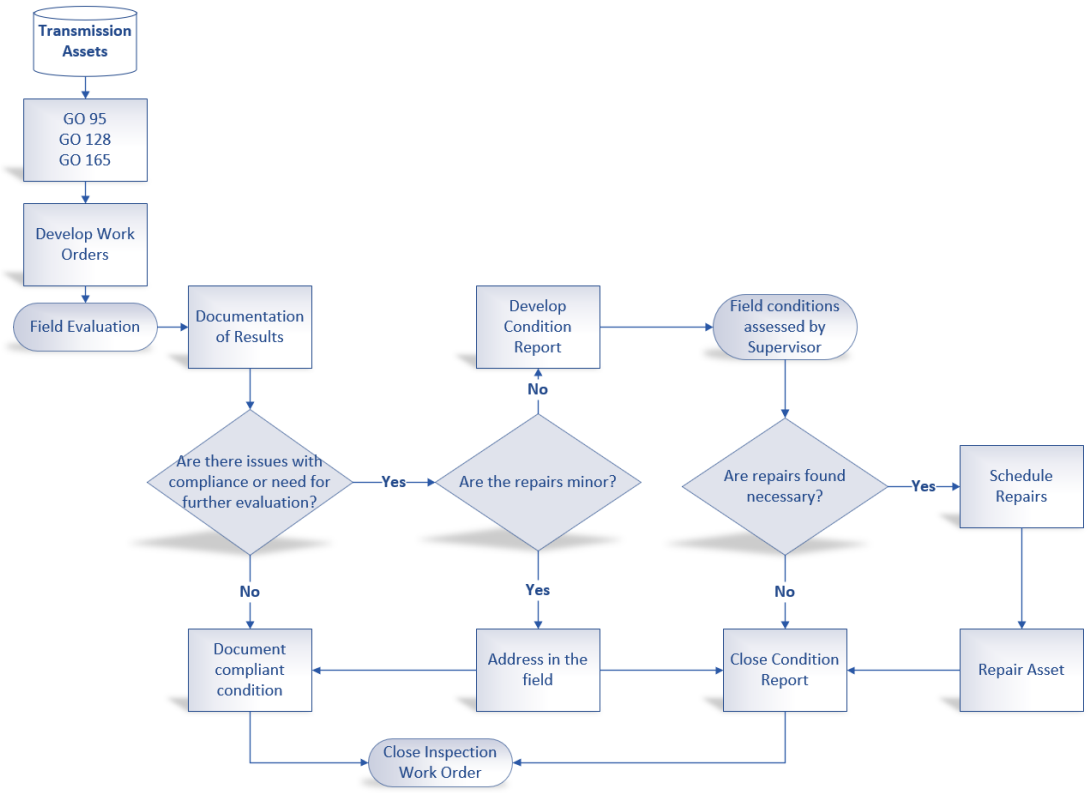
corporation does not use risk prioritization in the scheduling of the inspection program, it must explain why.

Accomplishments, Roadblocks, and Updates

In this section, the electrical corporation must discuss:

- *Noteworthy accomplishments for the inspection program since the last WMP submission*
- *Roadblocks the electrical corporation has encountered while implementing the inspection program and how the electrical corporation has addressed the roadblocks*
- *Changes/updates to the inspection program since the last WMP submission including known future plans (beyond the current year) and new/novel strategies the electrical* corporation may implement in the next 5 years (e.g., references to and strategies from pilot projects and research)

Figure 8-1. Example of Asset Management and Inspections Workflow



Process

Given its limited footprint and the size and scope of its operations, TBC's inspection program is schedule-based. Asset management and inspections are conducted in accordance with manufacturer's specification and applicable maintenance procedures.

Frequency or Trigger

The Trans Bay System is TBC's only operating asset, and it is sited in a Non-HFTD. The System is a transmission-only system with no overhead lines and no distribution elements. The Pittsburg Converter Station is hardscaped and utilizes underground cables which are monitored in real time. Given its limited footprint and the size and scope of its operations, TBC's inspection program is schedule-based in conjunction with the System inherent continuous monitoring capabilities. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, Supervisory Control and Data Acquisition (SCADA) applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers.

Accomplishments, Roadblocks, and Updates

As noted throughout this WMP, TBC's operational assets are limited to the Trans Bay System which is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations Considering TBC's limited footprint with one transmission asset, TBC has a small staff that oversees its operations, including asset inspection and management, maintenance, system operation and initial emergency response. All TBC's maintenance work, including asset inspections, is conducted by dedicated TBC's operations personnel, that, by reason of training, experience, and instruction, are qualified to perform the task, with support from qualified contractors as needed. Operations personnel maintain and operate the TBC facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations.

There have been no material changes to TBC's inspection program since the last WMP submission. TBC has not encountered any roadblocks in the implementation of its inspection program. There are no current plans to materially alter the inspection program. TBC will continue to monitor the effectiveness of the current inspection program as it gains operational experience and learns additional best practices.

8.1.4 Equipment Maintenance and Repair

Instructions: *In this section, in addition to the information described above regarding distribution, transmission, and substation inspections, the electrical corporation must provide a brief narrative of maintenance programs. As a narrative, the electrical corporation must include its strategy for maintenance, such as whether the electrical corporation replaces or upgrades facilities/equipment proactively (for example, an electrical corporation may monitor dissolved gases in its transformers to detect potential transformer failures to alert engineering and maintenance personnel or component*

lifecycle management) or if it runs its facilities/equipment to failure. The narrative must include, at minimum, the following types of equipment:

- *Capacitors*
- *Circuit breakers*
- *Connectors, including hotline clamps*
- *Conductor, including covered conductor*
- *Fuses, including expulsion fuses*
- *Distribution poles*
- *Lightning arrestors*
- *Reclosers*
- *Splices*
- *Transmission poles/towers*
- *Transformers*
- *Other equipment not listed*

Considering TBC's limited footprint with one transmission asset, TBC has a small staff that oversees its operations, including asset inspection and management, maintenance, system operation and initial emergency response. All TBC maintenance work, including asset inspections, is conducted by dedicated TBC's operations personnel, that, by reason of training, experience, and instruction, are qualified to perform the task, with support from qualified contractors as needed. Operations personnel maintain and operate TBC's facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations. Operators are trained for emergency scenarios and authorized to take precautionary measures such as reduction in power flow or initiating system shutdown when presented with system warnings or instruction from the CAISO or requests from PG&E. Infrastructure assessment is conducted by TBC's operators and engineers who are charged with physically inspecting TBC's substation and all equipment thereon, inspecting underground cable vaults and assessing cable surveys. All TBC's operations and engineering staff take proper care to ensure the safety of personnel and the public in performing mainte nance, inspection, and repair duties. Maintenance practices are also based on the recommendations of original equipment manufacturer and leveraged operational experience of TBC's affiliates.

8.1.5 Asset Management and Inspection Enterprise System

Instructions: *In this section, the electrical corporation must provide an overview of inputs to, operation of, and support for centralized asset management and inspection enterprise system(s) updated based upon inspection results and activities such as hardening, maintenance, and remedial work. This overview must include discussion of:*

- *The electrical corporation's asset inventory and condition database.*
- *Describe the electrical corporation's internal documentation of its database(s).*
- *Integration with systems in other lines of business.*
- *Integration with the auditing system(s) (see QA/QC section below).*

- *Describe internal procedures for updating the enterprise system including database(s) and any planned updates.*
- *Any changes to the initiative since the last WMP submission and a brief explanation as to why those changes were made. Include any planned improvements or updates to the initiative and the timeline for implementation.*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 (Elevated) HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. Considering TBC's limited footprint with one transmission asset, TBC has a small staff that oversees its operations, including asset inspection and management, maintenance, system operation and initial emergency response. All TBC maintenance work, including asset inspections, is conducted by dedicated TBC's operations personnel, that, by reason of training, experience, and instruction, are qualified to perform the task, with support from qualified contractors as needed. Operations personnel maintain and operate TBC's facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations. Operators are trained for emergency scenarios and authorized to take precautionary measures such as reduction in power flow or initiating system shutdown when presented with system warnings or instruction from the CAISO or requests from PG&E. Infrastructure assessment is conducted by TBC's operators and engineers who are charged with physically inspecting TBC's substation and all equipment thereon, inspecting underground cable vaults and assessing cable surveys. All TBC operations and engineering staff take proper care to ensure the safety of personnel and the public in performing maintenance, inspection, and repair duties.

TBC's inspection program is schedule-based in conjunction with the System inherent continuous monitoring capabilities. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. Based on the above and due to the limited scope and scale of operations, TBC currently does not employ an asset management and inspection enterprise system.

8.1.6 Quality Assurance and Quality Control System

Instructions: *In this section, the electrical corporation must provide an overview of its quality assurance and quality control (QA/QC) activities for asset management and inspections. This overview must include:*

- *Reference to procedures documenting QA/QC activities.*
- *How the sample sizes are determined and how the electrical corporation ensures the samples are representative.*
- *Qualifications of the auditors.*
- *Documentation of findings and how lessons learned based on those findings are incorporated into trainings and/or procedures.*
- *Any changes to the initiative since the last WMP submission and a brief explanation as to why those changes were made. Include any planned improvements or updates to the initiative and the timeline for implementation.*
- *Tabular information that includes:*
    - *Sample sizes*
    - *Type of QA/QC performed (e.g., desktop or field)*
    - *Resulting pass rates, starting in 2022*
    - *Yearly target pass rate for the 2023-2025 WMP cycle*

Table 8-7 provides an example of the appropriate level of detail.

Table 8-7. Example of Grid Design and Maintenance QA/QC Program

Activity Being Audited	***Sample Size***	***Type of Audit***	***Audit Results 2022***	***Yearly Target Pass Rate for 2023-2025***
Patrol inspections	*100% in HFTD Tier 2 and 3*	*Field*	*92%*	*95%*

Due it the limited scale and scope of TBC's operation, QA/QC activities are not as extensive as those utilities with large footprints. TBC's Operations Manager works with TBC's field operations personnel to review results of weekly inspections and identify any gaps or issues that need to be addressed to mitigate problems and reduce risk of utility-caused ignitions. This effort is also supported by TBC's Director Operations. This review also to ensures sustainment of efforts to identify any potential sources of ignition and near misses. TBC has been conducting regular weekly inspections of the Pittsburg Converter Station since the commencement of operations in November 2010. TBC plans to continue its cadence of periodic asset inspections. As a result Table 8- 7 is marked "N/A" meaning Not Applicable.

Table 8- 7. Grid Design and Maintenance QA/QC Program

Activity Being Audited	**Sample Size**	**Type of Audit**	**Audit Results 2022**	**Yearly Target Pass Rate for 2023-2025**
N/A				

8.1.7 Open Work Orders

Instructions: *In this section, the electrical corporation must provide an overview of the procedures it uses to manage its open work orders resulting from inspections that prescribe asset management activities. This overview must include a brief narrative that provides:*

- *Reference to procedures documenting the work order process. The electrical corporation must provide a summary of these procedures or provide a copy in the supporting documents location on its website.*
- *A description of how work orders are prioritized based on risk.*
- *A description of the plan for eliminating any backlog of work orders (i.e., open work orders that have passed remediation deadlines), if applicable.*
- *A discussion of trends with respect to open work orders.*

In addition, each electrical corporation must:

- *Graph open work orders over time as reported in the QDRs (Table 2, metrics 8.a and 8.b).*
- *Provide an aging report for work orders past due (Table 8-8 provides an example).*

Table 8-8. Example of Number of Past Due Asset Work Orders Categorized by Age

HTFD Area	*0-30 Days*	*31-90 Days*	*91-180 Days*	*181+ Days*
Non-HFTD				
HFTD Tier 2				
HFTD Tier 3				

Due it the limited scale and scope of TBC's operation, work orders are addressed with TBC's operations teams through the course of scheduled periodic maintenance inspections and activities. TBC has no past due asset work orders. In Table 8- 8 N/A means "Not Applicable" as TBC no assets in HFTD Tier 2 or Tier 3 areas.

Table 8- 8. Number of Past Due Asset Work Orders Categorized by Age

HTFD Area	0-30 Days	31-90 Days	91-180 Days	181+ Days
Non-HFTD	0	0	0	0
HFTD Tier 2	N/A	N/A	N/A	N/A
HFTD Tier 3	N/A	N/A	N/A	N/A

8.1.8 Grid Operations and Procedures

8.1.8.1 Equipment Settings to Reduce Wildfire Risk

Instructions: *In this section, the electrical corporation must discuss the ways in which operates its system to reduce wildfire risk. The equipment settings discussion must include the following:*

- *Protective equipment and device settings*
- *Automatic recloser settings*
- *Settings of other emerging technologies (e.g., rapid earth fault current limiters)*

For each of the above, the electrical corporation must provide a narrative on the following:

- *Settings to reduce wildfire risk*
- *Analysis of reliability/safety impacts for settings the electrical corporation uses*
- *Criteria for when the electrical corporation enables the settings*
- *Operational procedures for when the settings are enabled*
- *The number of circuit miles capable of these settings*
- *An estimate of the effectiveness of the settings*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Trans Bay System Facility does not utilize equipment settings that are designed to reduce wildfire risk. The facility does not have any overhead lines, utilize recloser, or include any distribution assets.

8.1.8.2 Grid Response Procedures and Notifications

Instructions: *The electrical corporation must provide a narrative on operational procedures it uses to respond to faults, ignitions, or other issues detected on its grid that may result in a wildfire including, at a minimum, how the electrical corporation:*

- *Locates the issues*
- *Prioritizes the issues*
- *Notifies relevant personnel and suppression resources to respond to issues*
- *Minimizes/optimizes response times to issues*

TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for

TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. TBC is also directly supported in situational awareness of local conditions through close coordination with CAISO as TBC's Balancing Authority and PG&E, TBC's only neighboring Transmission Operator since TBC operates completely within PG&E's service territory.

The nature of the AC/DC conversion system employed by TBC has control and protection features that "Block" transmission within microseconds of a fault detection and will initiate an Emergency Shut Off in milliseconds; significantly faster than traditional interrupting devices employed in other transmission systems. TBC's transmission system already possesses fault monitoring and detection capabilities that exceed that utilized in more traditional transmission systems. In 2020, TBC implemented two (2) continuous monitoring sensors initiatives that provided operational risk mitigation. The first was a fiber-optic based cable monitoring system which allows TBC to monitor the cable for physical vibration, temperature, and abnormal electrical discharge at the cable terminations. The second was a transformer monitoring system which has real-time oil analysis to detect and prevent internal faults on the transformer, as well as partial discharge monitoring of the transformer bushings to detect bushing degradation that could lead to failure. This system provides potentially predictive data on transformer failure which has the potential for initiating an ignition event. In 2021, TBC implemented a transformer oil control system which provided new control and flow sensor on its main transformers. This system allows station personnel to have improved assess to oil flow indication and controls which allows for more accurate preventative maintenance. This system in conjunction with the transformer monitoring system, which was installed in 2020, provides enhanced data that can be utilized to assess transformer health and potentially predict transformer failure which has the potential for initiating an ignition event.

8.1.8.3 Personnel Work Procedures and Training in Conditions of Elevated Fire Risk

Instructions: *The electrical corporation must provide a narrative on the following:*

- *The electrical corporation's procedures that designate what type of work the electrical corporation allows (or does not allow) personnel to perform during operating conditions of different levels of wildfire risk, including:*
  - *What the electrical corporation allows (or does not allow) during each level of risk*
  - *How the electrical corporation defines each level of wildfire risk*
  - *How the electrical corporation trains its personnel on those procedures*
  - *How it notifies personnel when conditions change, warranting implementation of those procedures*
- *The electrical corporation's procedures regarding deployment of firefighting staff and equipment (e.g., fire suppression engines, hoses, water tenders, etc.) to worksites for site-specific fire prevention and ignition mitigation during on-site work*

TBC's facilities are in an urban/industrial environment and its transmission facilities are either buried or submerged beneath Bay Area waters. The Trans Bay System utilizes no overhead transmission lines and no assets are sited in a HFTD. TBC Operations personnel are trained on all relevant TBC procedures, including regular weekly inspections, and specific procedures for Fire Prevention, Emergency Action, Emergency Operations, Fire System, and Asset Monitoring & protection. TBC purchased a Class B foam firefighting trailer and staff were trained on its use, though primary responsibility of its operation would be the local fire department. In 2021, TBC engaged the local Pittsburg Fire department and conducted a site walk through which including notification of foam trailer location and capabilities, site map, and locations of oil-containing assets.

Figure TBC 8.1.8- 1. Images of the Class B Foam trailer

Pittsburg Station- Foam Trailer

Pittsburg Station- Foam Trailer

TBC maintains Emergency Action Plans appropriate to the scale and scope of operations that comply with the California Public Utilities Code 768.6, Cal/OSHA - Title 8 Regulations, Chapter 4, Subchapter 7, Group 1, Article 2, §3220 Emergency Action Plans, and adhere to the practices specified in the National Fire Protection Association (NFPA) 850 Manual, Recommended Practices for Fire Protection for Electric Generating Plants and High Voltage Direct Current converter stations. TBC's emergency preparedness planning and response is conducted in close coordination with CAISO and PG&E in addition to local emergency service providers appropriate to the limited scale and scope of TBC's operations. Relevant emergency operations procedures are routinely provided to CAISO and PG&E upon any update. TBC operations staff also participate in the CAISO's annual system restoration drill.

Initial response and coordination to any emergency condition begins with TBC's System Operator who has full authority and responsibility to act autonomously to coordinate and conduct an emergency shutdown of the Trans Bay System. TBC-OP-004 Emergency Operations and TBC-HS-200 Emergency Action plan provide clear guidance regarding required responses, communications, staff responsibilities, and key situational awareness capabilities to address the full range of foreseeable emergencies to include all those that could pose a fire risk.

8.1.9 Workforce Planning

Instructions: In this section, the electrical corporation must report on qualifications and training *practices regarding wildfire and PSPS mitigation for workers in the following target roles:*

- *Asset inspections.*
- *Grid hardening.*
- *Risk event inspection.*

For each of the target roles listed above, the electrical corporation must:

- *List all worker titles relevant to the target role.*
- *For each worker title, list and explain minimum qualifications, with an emphasis on qualifications relevant to wildfire and PSPS mitigation. Note if the job requirements include:*
  - *Going beyond a basic knowledge of GO 95 requirements to perform relevant types of inspections or activities.*
  - *Being a "Qualified Electrical Worker" (QEW). If so, define what is required by the electrical corporation for it to consider a worker to be a QEW in terms of certifications, qualifications, experience, etc.*
- *Report the percentage of electrical corporation and contractor full-time employees (FTEs) in the target role, with specific job titles.*
- *Report plans to improve qualifications of workers relevant to wildfire and PSPS mitigation work. The electrical corporation must explain how it is developing training programs that teach electrical workers to identify hazards that could ignite wildfires.*

Table 8-9, Table 8-10, and Table 8-11 are examples of the required information.

Table 8-9. Example of Workforce Planning, Asset Inspections

Worker Title	Minimum Qualifications for Target Role	Special Certification Requirements	Electrical Corporation % FTE Min Quals	Electrical Corporation % Special Certifications	Contractor % FTE Min Quals	Contractor % Special Certifications	Reference to Electrical Corporation Training/ Qualification Programs
Transmission Lineman	• *Journeyman Lineman having completed an accredited apprenticeship program* • *IBEW Journeyman Lineman status in good standing* • *Class A California driver's license*	• *QEW, Overhead and/or Underground Inspection Training*	*x%*	*x%*	*x%*	*x%*	
Thermographer	• *Part 107 drone license or must obtain within first year* • *Level I Infrared Certification or must obtain within first year*	• *QEW or Electrician*	*x%*	*x%*	*x%*	*x%*	

Table 8-10. Example of Workforce Planning, Grid Hardening

Worker Title	Minimum Qualifications for Target Role	Special Certification Requirements	Electrical Corporation % FTE Min Quals	Electrical Corporation % Special Certifications	Contractor % FTE Min Quals	Contractor % Special Certifications	Reference to Electrical Corporation Training/ Qualification Programs
Apprentice Lineman	• *Nine months' experience as Line Assistant* • *Valid California driver's license* • *Must have held previous position for at least nine months*	• *None*	*x%*	*NA*	*x%*	*NA*	
Electric Troubleshooter	• *Complete seven-week*	• *Journeyman Lineman*	*x%*	*x%*	*x%*	*x%*	*RETS Training*

	Relief Trouble Shooter (RETS) class and pass written and practical exams						

Table 8-11. Example of Workforce Planning, Risk Event Inspection

Worker Title	***Minimum Qualifications for Target Role***	***Special Certification Requirements***	***Electrical Corporation % FTE Min Quals***	***Electrical Corporation % Special Certifications***	***Contractor % FTE Min Quals***	***Contractor % Special Certifications***	***Reference to Electrical Corporation Training/ Qualification Programs***
Troubleshooter	*• Journeyman Lineman who completed an accredited apprenticeship program* *• IBEW Journeyman Lineman status in good standing* *• Complete seven-week RETS class and pass the associated written and practical exams*	*• QEW*	*x%*	*x%*	*x%*	*x%*	*RETS Training*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. Considering TBC's limited footprint with one transmission asset, TBC has a small staff that oversees its operations, including asset inspection and management, maintenance, system operation and initial emergency response. All TBC maintenance work, including asset inspections, is conducted by dedicated TBC operations personnel, that, by reason of training, experience, and instruction, are qualified to perform the task, with support from qualified contractors as needed. Operations personnel maintain and operate TBC facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations. Operators are trained for emergency scenarios and authorized to take precautionary measures such as reduction in power flow or initiating system shutdown when presented with system warnings or

instruction from the CAISO or requests from PG&E. Infrastructure assessment is conducted by TBC's operators and engineers who are charged with physically inspecting TBC's substation and all equipment thereon, inspecting underground cable vaults and assessing cable surveys. All TBC operations and engineering staff take proper care to ensure the safety of personnel and the public in performing maintenance, inspection, and repair duties. Given TBC's limited scope, TBC no plans to alter its work force.

Table 8- 9. Workforce Planning, Asset Inspections

Worker Title	Minimum Qualifications for Target Role	Special Certification Requirements	Electrical Corporation % FTE Min Quals	Electrical Corporation % Special Certifications	Contractor % FTE Min Quals	Contractor % Special Certifications	Reference to Electrical Corporation Training/ Qualification Programs
Maintenance Technician	• High school diploma, and 6 years relevant military or prior job experience in utility, transmission, or power generation industry	• None	100%	100%	N/A%	N/A%	

Table 8- 10. Workforce Planning, Grid Hardening

Worker Title	Minimum Qualifications for Target Role	Special Certification Requirements	Electrical Corporation % FTE Min Quals	Electrical Corporation % Special Certifications	Contractor % FTE Min Quals	Contractor % Special Certifications	Reference to Electrical Corporation Training/ Qualification Programs
Operations Engineer	• Bachelor's Degree in Engineering and 3 years' experience	• None	100%	100%	N/A%	N/A%	
Maintenance Technician	• High school diploma, and 6 years relevant military or prior job experience in utility, transmission, or power	• None	100%	100%	N/A%	N/A%	

	generation industry						

Table 8- 11. Workforce Planning, Risk Event Inspection

Worker Title	Minimum Qualifications for Target Role	Special Certification Requirements	Electrical Corporation % FTE Min Quals	Electrical Corporation % Special Certifications	Contractor % FTE Min Quals	Contractor % Special Certifications	Reference to Electrical Corporation Training/ Qualification Programs
Operations Engineer	• Bachelor's Degree in Engineering and 3 years' experience	• None	100%	100%	N/A%	N/A%	
Maintenance Technician	• High school diploma, and 6 years relevant military or prior job experience in utility, transmission, or power generation industry	• None	100%	100%	N/A%	N/A%	

8.2 Vegetation Management and Inspections

8.2.1 Overview

Instructions: *In accordance with Public Utilities Code section 8386(c)(9), each electrical corporation's WMP must include plans for vegetation management.*

In this section, the electrical corporation must identify objectives for the next 3- and 10-year periods, targets, and performance metrics related to the following vegetation management programmatic areas:

- *Vegetation inspections*
- *Vegetation and fuels management*
- *Vegetation management enterprise system*
- *Environmental compliance and permitting*
- *Quality assurance / quality control*
- *Open work orders*
- *Workforce panning*

8.2.1.1 Objectives

Instructions: *Each electrical corporation must summarize the objectives for its 3-year and 10-year plans for implementing and improving its vegetation management and inspections.[29] These summaries must include the following:*

- *Identification of which initiative(s) in the WMP the electrical corporation is implementing to achieve the stated objective, including Utility Initiative Tracking IDs*
- *Reference(s) to applicable codes, standards, and best practices/guidelines and an indication of whether the electrical corporation exceeds an applicable code, standard, or regulation*
- *Method of verifying achievement of each objective*
- *A completion date for when the electrical corporation will achieve the objective*
- *Reference(s) to the WMP section(s) or appendix, including page numbers, where the details of the objective(s) are documented and substantiated*
- *Reference(s) to the WMP section(s) or appendix, including page numbers, where the details of the objective(s) are documented and substantiated*

This information must be provided in Table 8-12 for the 3-year plan and Table 8-13 for the 10-year plan. Examples of the minimum acceptable level of information are provided below.

Table 8-12. Example of Vegetation Management Implementation Objectives (3-year plan)

Objectives for Three Years (2023–2025)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
Complete effectiveness of enhanced clearances study	Vegetation Clearances (VM-2)	GO 95, Rule 35, Tree Trimming Guidance	WMP reporting, report from 3rd party project manager	December 2025	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

Table 8-13. Example of Vegetation Management Implementation Objectives (10-year plan)

[29] Annual information included in this section must align with the QDR data.

Objectives for Three Years (2026–2032)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
Optimize vegetation inspection cycles based on risk mitigation efficacy	*All VM inspections (VM-3, VM-4, VM-5)*	*GO 95, Rule 35, Inspection Protocols for Vegetation in HFTD (Doc # XXXXX, version N)*	*Revised/updated vegetation inspection protocol with revised inspection schedule to account for risk analysis*	*2028*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. TBC's System utilizes no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under the NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC, that TBC has no requirement have a VMP. TBC does undertake weed abatement on its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Given the foregoing, TBC has no vegetation management objectives for the 2023-2025 WMP Cycle and beyond and therefore Table 8- 12 and Table 8- 13 are marked as "N/A" meaning "Not Applicable".

Table 8- 12. Vegetation Management Implementation Objectives (3-year plan)

Objectives for Three Years (2023–2025)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

Table 8- 13. Vegetation Management Implementation Objectives (10-year plan)

Objectives for Three Years (2026–2032)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
N/A					

8.2.1.2 Targets

Instructions: *Initiative targets are forward-looking quantifiable measurements of activities identified by each electrical corporation in its WMP. Electrical corporations will show progress toward completing targets in subsequent reports, including QDRs and WMP Updates.*

The electrical corporation must list all targets it will use to track progress on its vegetation management and inspections for the three years of the Base WMP. Energy Safety's Compliance Assurance Division and third parties must be able to track and audit each target.[30] *For each initiative target, the electrical corporation must provide the following:*

- *Utility Initiative Tracking IDs.*
- *Projected targets for each of the three years of the Base WMP and relevant units.*
- *Quarterly, rolling targets for 2023 and 2024 (inspections only).*
- *The expected "x% risk impact" For each of the three years of the Base WMP. The expected x% risk impact is the expected percentage risk reduction per year, as described in Section 7.2.2.2.*
- *Method of verifying target completion.*

[30] *Annual information included in this section must align with Table 1 of the QDR.*

The electrical corporation's targets must provide enough detail to effectively inform efforts to improve the performance (i.e., reduction in ignition probability or wildfire consequence) of the electrical corporation's vegetation management and inspections initiatives.

Table 8-14 and Table 8-15 provide examples of the minimum acceptable level of information.

Table 8-14. Example of Vegetation Management Initiative Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
Fuels management – Pole clearing beyond PRC 4292	VM-08	300 Poles brushed in non-SRA HFTD Tier 3 areas	1%	300 Poles brushed in non-SRA HFTD Tier 3 areas	1.2%	350 Poles brushed in non-SRA HFTD Tier 3 areas	1.2%	Work verification system, completed work orders, yearly internal audit, GIS Data Submission(s)

Table 8-15. Example of Vegetation Inspections Targets by Year

Initiative Activity	Tracking ID	Target End of Q2 2023 & Unit	Target End of Q3 2023 & Unit	End of Year Target 2023 & Unit	x% Risk Impact 2023	Target End of Q2 2024 & Unit	Target End of Q3 2024 & Unit	End of Year Target 2024 & Unit	x% Risk Impact 2024	Target 2025 & Unit	x% Risk Impact 2023	Method of Verification
Hazard tree inspections	VM-04	100 circuit miles inspected	130 circuit miles inspected	200 circuit miles inspected	3%	90 circuit miles inspected	120 circuit miles inspected	180 circuit miles inspected	2.6%	400 circuit miles inspected	3%	Inspection records, billing receipts, GIS Data Submission(s)

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. TBC's System utilizes no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no

requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Given the foregoing, TBC has no vegetation management initiative targets for the 2023-2025 WMP Cycle and beyond and therefore Tables 8-14 and 8-15 are marked "N/A" meaning "Not Applicable".

Table 8- 14. Vegetation Management Initiative Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
N/A								

Table 8- 15. Vegetation Inspections Targets by Year

Initiative Activity	Tracking ID	Target End of Q2 2023 & Unit	Target End of Q3 2023 & Unit	End of Year Target 2023 & Unit	x% Risk Impact 2023	Target End of Q2 2024 & Unit	Target End of Q3 2024 & Unit	End of Year Target 2024 & Unit	x% Risk Impact 2024	Target 2025 & Unit	x% Risk Impact 2023	Method of Verification
N/A												

8.2.1.3 Performance Metrics Identified by the Electrical Corporation

Instructions: *Performance metrics indicate the extent to which an electrical corporation's Wildfire Mitigation Plan is driving performance outcomes. The electrical corporation must:*

- *List the performance metrics the electrical corporation uses to evaluate the effectiveness of its vegetation management and inspections in reducing wildfire and PSPS risk*[31]

For each of these performance metrics listed, the electrical corporation must:

- *Report the electrical corporation's performance since 2020 (if previously collected)*
- *Project performance for 2023-2025*
- *List method of verification*

The electrical corporation must ensure that each metric's name and values are the same in its WMP reporting as its QDR reporting (specifically, QDR Table 2 and QDR Table 3). Metrics listed in this section that are the same as performance metrics required by Energy Safety and reported in QDR Table 2 (Performance Metrics)[32] *must match those reported in QDR Table 2. Metrics listed in this section that are not the same as any of the performance metrics identified by Energy Safety and reported in QDR Table 2 must match those reported in QDR Table 3.*

[31] *There may be overlap between the performance metrics the electrical corporation uses and performance metrics required by Energy Safety. The electrical corporation must list these overlapping metrics in this section in addition to any unique performance metrics it uses.*

[32] *The performance metrics identified by Energy Safety are included in Energy Safety's Data Guidelines.*

The electrical corporation must:

- *Summarize its self-identified performance metric(s) in tabular form*
- *Provide a brief narrative that explains trends in the metrics*

Table 8-16 provide are examples of the minimum acceptable level of information. The electrical corporation must provide a brief narrative that explains its trends.

Table 8-16. Example of Vegetation Management and Inspection Performance Metrics Results by Year

Performance Metrics	***2020***	***2021***	***2022***	***2023 Projected***	***2024 Projected***	***2025 Projected***	***Method of Verification (e.g., third-party evaluation, QDR)***
Vegetation-caused ignitions							
Vegetation-caused outages							
Open vegetation work orders							

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. TBC's System utilizes no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter

station. Given the foregoing, TBC has no vegetation management and inspection performance metrics for the 2023-2025 WMP Cycle and beyond and therefore Table 8- 16 is marked "NA" meaning "Not Applicable".

Table 8- 16. Vegetation Management and Inspection Performance Metrics Results by Year

Performance Metrics	2020	2021	2022	2023 Projected	2024 Projected	2025 Projected	Method of Verification (e.g., third-party evaluation, QDR)
N/A							

8.2.2 Vegetation Management Inspections

Instructions: *In this section, the electrical corporation must provide an overview of its procedures for vegetation management inspections.*

The electrical corporation must first summarize details regarding its vegetation management inspections in Table 8-17. The table must include the following:

- ***Type of inspection****: distribution, transmission, substation, etc.*
- ***Inspection program name:*** *Identify various inspection programs within the electrical corporation (e.g., routine, enhanced vegetation, high-risk species, and off-cycle)*
- ***Frequency or trigger****: Identify the frequency or triggers, such as inputs from the risk model. Indicate differences in frequency or trigger by HTFD Tier, if applicable*
- ***Method of inspection****: Identify the methods used to perform the inspection (e.g., patrol, detailed, sounding or root examination, aerial, and LiDAR)*
- ***Governing standards and operating procedures****: Identify the regulatory requirements and the electrical corporation's procedures for addressing them*

Table 8-17. Example of Vegetation Management Inspection Frequency, Method, and Criteria

Type	*Inspection Program*	*Frequency or Trigger (Note 1)*	*Method of Inspection (Note 2)*	*Governing Standards & Operating Procedures*
Transmission				
Distribution				
Substation				

Note 1: The electrical corporation must provide electrical corporation-specific risk-informed triggers used for vegetation managements.

Note 2: The electrical corporation must provide electrical corporation-specific definitions of the different methods of inspection.

The electrical corporation must then provide a narrative overview of each vegetation inspection program identified in the above table; Sections 8.2.2.1. provides instructions for the overviews. The sections should be numbered 8.2.2.1 to Section 8.2.2.n (i.e., each vegetation inspection program is detailed in its own section). The electrical corporation must include inspection programs it is discontinuing or has discontinued since the last WMP submission; in these cases, the electrical corporation must explain why the program is being discontinued or has been discontinued.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. TBC's System utilizes no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake routine weed abatement at its Pittsburg Converter Station, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Given the foregoing, TBC has no vegetation management inspection program but identifies its quarterly inspections in Table 8-17.

Table 8- 17. Vegetation Management Inspection Frequency, Method, and Criteria

Type	Inspection Program	Frequency or Trigger (Note 1)	Method of Inspection (Note 2)	Governing Standards & Operating Procedures
Substation	Vegetation Management	Scheduled (Quarterly)	Visual inspection	TBC-MP-001, Section 4.30

8.2.2.1 [Vegetation Management Inspections Program]

Instructions:
Process

In this section, the electrical corporation must provide an overview of the individual vegetation inspection program, including inspection criteria and the various inspection methods used for each inspection program.

Include relevant visuals and graphics depicting the workflow and decision-making process the electrical corporation uses for the inspection program (see the example in Figure 8-2).

Frequency or Triggers

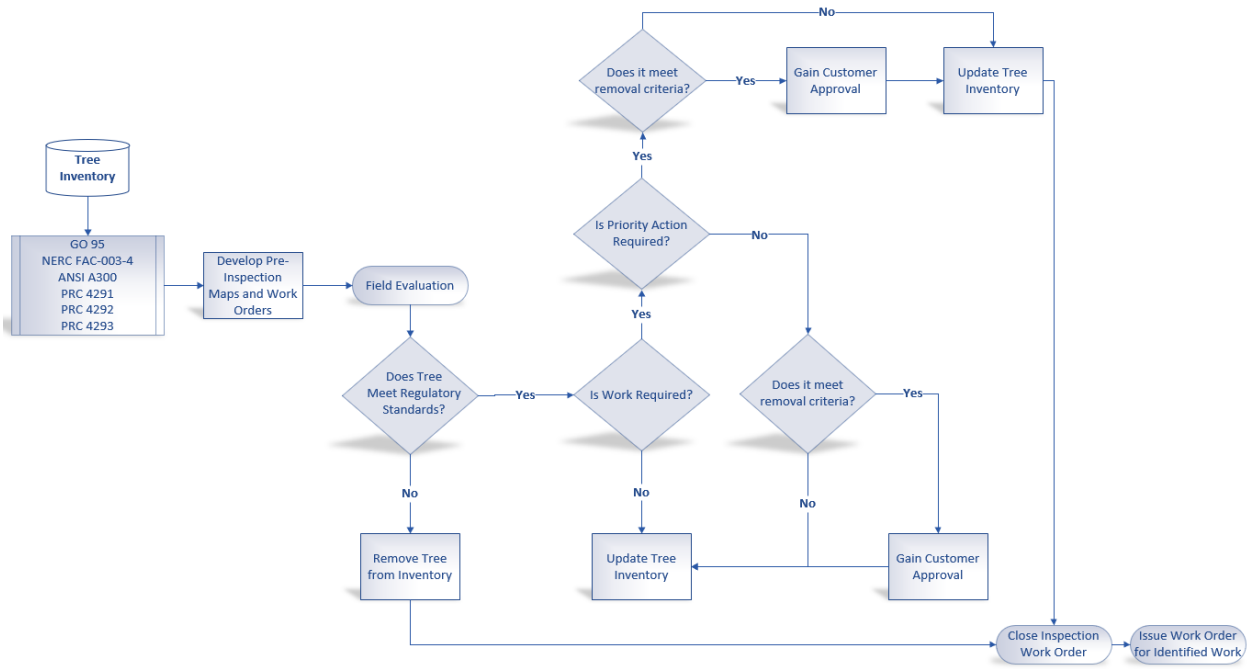
In this section, the electrical corporation must identify the frequency or triggers used in the inspection program, such as inputs from the risk model. It must also identify how the frequency or trigger might differ by HFTD Tier or other risk designation.
If the inspection program is based on a schedule, the electrical corporation must explain how it uses risk prioritization in the scheduling of the inspection program to target high-risk areas. If the electrical corporation does not use risk prioritization in the scheduling of the inspection program, it must explain why.

Accomplishments, Roadblocks, and Updates

In this section, the electrical corporation must discuss:

- *Noteworthy accomplishments for the inspection program since the last WMP submission*
- *Roadblocks the electrical corporation has encountered while implementing the inspection program and how the electrical corporation has addressed the roadblocks*
- *Changes/updates to the inspection program since the last WMP submission including known future plans (beyond the current year) and new/novel strategies the electrical corporation may implement in the next 5 years (e.g., references to and strategies from pilot projects and research)*

Figure 8-2. Example of Vegetation Management Inspection Overview



The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. TBC's System utilizes no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Given the foregoing, TBC does maintain a vegetation management inspection program.

8.2.3 Vegetation and Fuels Management

Instructions: *In this section, the electrical corporation must discuss the following mitigation initiatives associated with vegetation and fuels management:*

1. *Fuels management*
2. *Clearance*
3. *Fall-in mitigation*
4. *Substation defensible space*
5. *High-risk species*
6. *Fire-resilient right-of-way*
7. *Emergency response vegetation management*

In the following subsections, the electrical corporation must provide an overview of its vegetation and fuels management initiatives. These overviews should include figure(s) that depict the workflow and decision process used for vegetation and fuels management. Figure 8-3 provides an example of the appropriate level of detail for tree trimming and removal.

In addition to figure(s), the electrical corporation must provide a narrative overview of each vegetation and fuels management initiative. The discussion must include the following:

- ***Utility Initiative Tracking ID.***
- ***Overview of the initiative:*** *A brief description of the initiative including reference to related objectives and targets .*
- ***Governing standards and electrical corporation standard operating procedures:*** *Reference to the appropriate code and electrical corporation procedure. If any standard exceeds regulatory requirements, the electrical corporation must reference the document that the electrical corporation uses as a basis for exceeding the regulatory requirements.*

- ***Updates to the initiative:*** *Changes to the initiative since the last WMP submission and a brief explanation as to why those change were made. Discuss any planned improvements or updates to the initiative and the timeline for implementation.*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 (Elevated) HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. TBC's System utilizes no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station.

8.2.3.1 Pole Clearing

Instructions: *In this subsection, the electrical corporation must provide an overview of pole clearing activities, including:*

- *Pole clearing per Public Resources Code section 4292*
- *Pole clearing outside the requirements of Public Resources Code section 4292 (e.g., pole clearing performed outside of the State Responsibility Area)*

The Trans Bay System does not utilize overhead utility lines and thus pole clearing is not applicable to TBC's operations.

8.2.3.2 Wood and Slash Management

Instructions: *In this subsection, the electrical corporation must provide an overview of how it manages all downed wood and "slash" generated from vegetation management activities, including references to applicable regulations, codes, and standards.*

The Trans Bay System does not utilize overhead utility lines and thus wood and slash management is not applicable to TBC's operations.

8.2.3.3 Clearance

Instructions: *In this subsection, the electrical corporation must provide an overview of clearance activities, including:*

- *Clearances established in excess of the minimum clearances in Table 1 of GO 95*
- *The bases for the clearances established*

The Trans Bay System does not utilize overhead utility lines and thus clearance activities are not applicable to TBC's operations.

8.2.3.4 Fall-In Mitigation

Instructions: *In this subsection, the electrical corporation must provide an overview of its actions taken to identify and remove or otherwise remediate trees that pose a high risk of failure or fracture that could potentially strike electrical equipment (e.g., danger trees or hazard trees).*

The Trans Bay System does not utilize overhead utility lines and thus fall-in mitigation is not applicable to TBC's operations.

8.2.3.5 Substation Defensible Space

Instructions: *In this subsection, the electrical corporation must provide an overview of its actions taken to reduce ignition probability and wildfire consequence due to contact with substation equipment.*

The Trans Bay System does not utilize overhead utility lines. The Pittsburg converter station is proximate to vegetative fuels in the form of a five (5) acre area which contains various native and non-native species of trees, shrubs, and grasses but all cable infrastructure traversing the area is underground. In this area equipment derangement resulting from environmental or man-made events, not weather or fuel conditions, would be the primary driver for potential fire ignition. Additionally, the Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station.

8.2.3.6 High-Risk Species

Instructions: *In this subsection, the electrical corporation must provide an overview of its actions, such as trimming, removal, and replacement, taken to reduce the ignition probability and wildfire consequence attributable to high-risk species of vegetation.*

See TBC's responses to Section 8.2.3.5.

8.2.3.7 Fire-Resilient Right-of-Ways

Instructions: *In this subsection, the electrical corporation must provide an overview of its actions taken to promote vegetation communities that are sustainable, fire-resilient, and compatible with the use of the land as an electrical corporation right-of-way. It must also provide an overview of its actions to control vegetation that is incompatible with electrical equipment and with the use of the land as an electrical*

corporation right-of-way. This may include, but is not limited to, the following activities: the strategic use of herbicides, growth regulators, or other chemical controls; tree-replacement programs; promotion of native shrubs; prescribed fire; or fuel treatment activities not covered by another initiative.

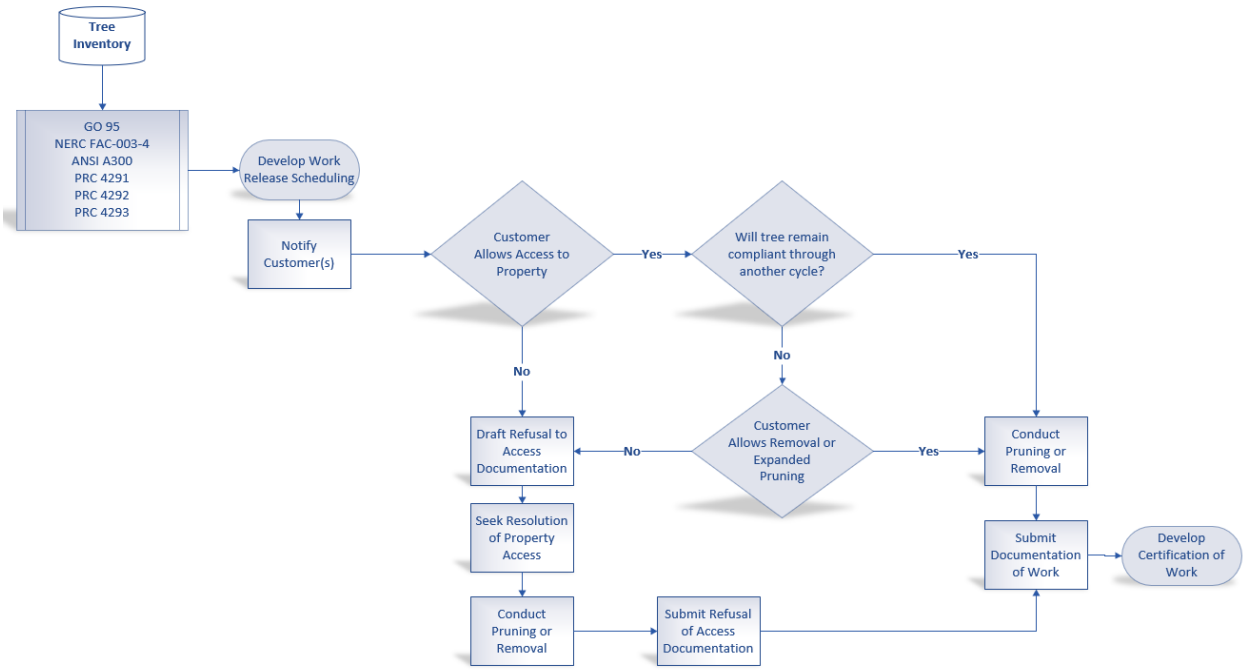
The Trans Bay System does not utilize overhead utility lines and therefore makes limited use of right-of-ways. TBC does maintain easements for the underground cable corridor. The Pittsburg converter station is proximate to vegetative fuels in the form of a five (5) acre area which contains various native and non-native species of trees, shrubs, and grasses but all cable infrastructure traversing the area is underground. In this area equipment derangement resulting from environmental or man-made events, not weather or fuel conditions, would be the primary driver for potential fire ignition. See TBC's response to Section 8.2.3.5.

8.2.3.8 Emergency Response Vegetation Management

Instructions: *In this subsection, the electrical corporation must provide an overview of the following emergency response vegetation management activities:*

- *Activities based on weather conditions:*
    - *Planning and execution of vegetation management activities, such as trimming or removal, executed based on and in advance of a Red Flag Warning or other weather condition forecast that indicates an elevated fire threat in terms of ignition probability and wildfire potential.*
- *Post-fire service restoration:*
    - *Vegetation management activities during post-fire service restoration, including, but not limited to, activities or protocols that differentiate post-fire vegetation management from programs described in other WMP initiatives; supporting documentation for the tool and/or standard the electrical corporation uses to assess the risk presented by vegetation after a fire; and how the electrical corporation includes fire-specific damage attributes in its assessment tool/standard. The description of such activities must differentiate between those emergency actions initiated to restore power while active fire suppression is ongoing and actions that occur following active fire suppression during the post-fire suppression repair and rehabilitation phases of fire protection operations.*

Figure 8-3. Example of Tree Trimming and Removal Workflow



The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. The submarine cable is fully submerged beneath the Bay Waters for approximately 53 miles and therefore has no fire-threat risk. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 (Elevated) HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. The Pittsburg converter station is proximate to vegetative fuels in the form of a five (5) acre area which contains various native and non-native species of trees, shrubs, and grasses but all cable infrastructure traversing the area is underground. In this area equipment derangement resulting from environmental or man-made events, not weather or fuel conditions, would be the primary driver for potential fire ignition. TBC's System also utilizes no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Given the foregoing, TBC does not engage in Emergency Response Vegetation Management.

8.2.4 Vegetation Management Enterprise System

Instructions: *In this section, the electrical corporation must provide an overview of inputs to, operation of, and support for a centralized vegetation management enterprise system updated based upon inspection results and management activities such as trimming and removal of vegetation. This overview must include discussion of:*

- *The electrical corporation's vegetation inventory and condition database(s).*
- *Describe the electrical corporation's internal documentation of its database(s).*
- *Integration with systems in other lines of business.*
- *Integration with the auditing system(s) (see Section 8.2.5, "Quality Assurance and Quality Control").*
- *Describe internal procedures for updating the enterprise system including database(s) and any planned updates.*
- *Any changes to the initiative since the last WMP submission and a brief explanation as to why those changes were made. Include any planned improvements or updates to the initiative and the timeline for implementation.*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. The System also does not utilize overhead lines. TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Based on the above and due to the limited scope and scale of operations, TBC does not employ a vegetation management enterprise system.

8.2.5 Quality Assurance and Quality Control

Instructions: *In this section, the electrical corporation must provide an outline of its quality assurance and quality control (QA/QC) activities for vegetation management. This overview must include:*

- *Reference to procedures documenting QA/QC activities.*
- *How the sample sizes are determined and how the electrical corporation ensures the samples are representative.*
- *Who performs QA/QC (internal or external, is there a dedicated team, etc.).*
- *Qualifications of the auditors.*
- *Documentation of findings and how the lessons learned from those findings are incorporated into trainings and/or procedures.*

- *Any changes to the procedures since the last WMP submission and a brief explanation as to why those changes were made. Include any planned improvements or updates to the initiative and the timeline for implementation.*
- *Tabular information:*
    - *Sample sizes*
    - *Type of QA/QC performed (e.g., desktop or field)*
    - *Resulting pass rates, starting in 2022*
    - *Yearly target pass rate for the 2023-2025 Base WMP cycle*

Table 8-18 provides an example of the appropriate level of detail.

Table 8-18. Example of Vegetation Management QA/QC Program

Activity Being Audited	***Sample Size***	***Type of Audit***	***Audit Results 2022***	***Yearly Target Pass Rate for 2023-2025***
Hazard Tree Patrol Inspections	*100% in HFTD Tiers 2 and 3*	*Field*	*92%*	*95%*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter station is surrounded by a twelve (12) foot concrete perimeter wall and is hardscaped with asphalt and rock/gravel. The System also does not utilize overhead lines. TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Based on the above and due to the limited scope and scale of operations, TBC does not employ a VMP and therefore does not have a vegetation management QA/QC Program. As a result Table 8- 18 is marked "N/A" meaning "Not Applicable".

Table 8- 18. Vegetation Management QA/QC Program

Activity Being Audited	**Sample Size**	**Type of Audit**	**Audit Results 2022**	**Yearly Target Pass Rate for 2023-2025**
N/A				

8.2.6 Open Work Orders

Instructions: *In this section, the electrical corporation must provide an overview of the procedures it uses to manage its open work orders resulting from vegetation management inspections that prescribe vegetation management activities. This overview must include a brief narrative that provides:*

- *Reference to procedures documenting the work order process.*
- *A description of how work orders are prioritized based on risk.*
- *A description of the plan for eliminating work order backlogs (i.e., open work orders that have passed remediation deadlines), if applicable.*
- *A discussion of trends with respect to open work orders.*

In addition, each electrical corporation must:

- *Graph open work orders over time as reported in the QDRs (Table 2, metrics 7.a and 7.b).*
- *Provide an aging report for work orders past due (Table 8-19 provides an example).*

Table 8-19: Example of Number of Past Due Vegetation Management Work Orders Categorized by Age

HTFD Area	*0-30 Days*	*31-90 Days*	*91-180 Days*	*181+ Days*
Non-HFTD				
HFTD Tier 2				
HFTD Tier 3				

TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CAISO maintenance requirements. TBC makes quarterly reports to WECC that TBC has no requirement have a VMP. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. Based on the above and due to the limited scope and scale of operations, TBC has no past due vegetation management work orders. In Table 8- 19 "N/A" means "Not Applicable" representing that TBC has no assets in HFTD areas.

Table 8- 19. Number of Past Due Vegetation Management Work Orders

HTFD Area	0-30 Days	31-90 Days	91-180 Days	181+ Days
Non-HFTD	0	0	0	0
HFTD Tier 2	N/A	N/A	N/A	N/A
HFTD Tier 3	N/A	N/A	N/A	N/A

8.2.7 Workforce Planning

Instructions: In this section, the electrical corporation must provide a brief overview of its recruiting practices for vegetation management personnel. It must also provide its worker qualifications and training practices for workers in the following target roles:

- Vegetation inspections
- Vegetation management projects

For each of the target roles listed above, the electrical corporation must:

- List all worker titles relevant to the target role.
- List and explain minimum qualifications for each worker title with an emphasis on qualifications relevant to vegetation management. Note if the job requirements include the following:
    - Special certification requirements, such as being an International Society of Arboriculture Certified Arborist with specialty certification as a Utility Specialist or a California-licensed Registered Professional Forester
    - Additional training on biological resources identification and protection (e.g., plant and animal species and habitats); and cultural prehistoric and historic resources identification and protection
- Report the percentage of electrical corporation and contractor full-time equivalents (FTEs) in target roles with specific job titles
- Report plans to improve qualifications of workers relevant to vegetation management. The electrical corporation must explain how it is developing more robust outreach and onboarding training programs for new electric workers to identify hazards that could ignite wildfires

Table 8-20 provides an example of the required information.

Table 8-20. Example of Vegetation Management Qualifications and Training

Worker Title	***Minimum Qualifications for Target Role***	***Special Certification Requirements***	***Electrical Corporation % FTE Min Quals***	***Electrical Corporation % Special Certifications***	***Contractor % FTE Min Quals***	***Contractor % Special Certifications***	***Reference to Electrical Corporation Training/ Qualification Programs***
Pre-inspector	*One year of arboriculture experience or degree in relevant field*	*Certified Arborist, as soon as eligible*	*x%*	*x%*	*x%*	*x%*	

TBC's facilities are in an urban/industrial environment and its transmission facilities are either buried or submerged beneath Bay Area waters. TBC's facilities utilize no overhead transmission lines. As a result, TBC does not have a VMP) and is not required to maintain a VMP under NERC Reliability Standards or

any CASIO maintenance requirements. TBC does undertake weed abatement at its converter stations, the cost of which is incorporated into landscape maintenance which is conducted by a contractor. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. As a result of the foregoing, Table 8- 20 is marked "N/A" meaning "Not Applicable".

Table 8- 20. Vegetation Management Qualifications and Training

Worker Title	Minimum Qualifications for Target Role	Special Certification Requirements	Electrical Corporation % FTE Min Quals	Electrical Corporation % Special Certifications	Contractor % FTE Min Quals	Contractor % Special Certifications	Reference to Electrical Corporation Training/ Qualification Programs
N/A							

8.3 Situational Awareness and Forecasting

8.3.1 Overview

Instructions: *In this section, the electrical corporation must identify objectives for the next 3- and 10-year periods, targets, and performance metrics related to the following situational awareness and forecasting programmatic areas:*

- *Environmental monitoring systems*
- *Grid monitoring systems*
- *Ignition detection systems*
- *Weather forecasting*
- *Ignition likelihood calculation*
- *Ignition consequence calculation*

8.3.1.1 Objectives

Instructions: *Each electrical corporation must summarize the objectives for its 3-year and 10-year plans for implementing and improving its situational awareness and forecasting.*[33] *These summaries must include the following:*

- *Identification of which initiative(s) in the WMP the electrical corporation is implementing to achieve the stated objective, including Utility Initiative Tracking IDs*
- *Reference(s) to applicable codes, standards, and best practices/guidelines and an indication of whether the electrical corporation exceeds an applicable code, standard, or regulation*
- *Method of verifying achievement of each objective*
- *A completion date for when the electrical corporation will achieve the objective*

[33] Annual information included in this section must align with the QDR data

- *Reference(s) to the WMP section(s) or appendix, including page numbers, where the details of the objective(s) are documented and substantiated*

This information must be provided in Table 8-21 for the 3-year plan and Table 8-22 for the 10-year plan. Examples of the minimum acceptable level of information are provided in Tables below.

Table 8-21. Example of Situational Awareness Initiative Objectives (3-year plan)

Objectives for Three Years (2023–2025)	***Applicable Initiative(s), Tracking ID(s)***	***Applicable Regulations, Codes, Standards, and Best Practices (See Note)***	***Method of Verification (i.e., program)***	***Completion Date***	***Reference (section & page #)***
Automate ignition detection using third-party software	*Ignition detection, SA-03*	*Wildfire Prevention Guide*	*Contract w/ third-party and active license for software*	*March 2025*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

Table 8-22. Example of Situational Awareness Initiative Objectives (10-year plan)

Objectives for Three Years (2023–2025)	***Applicable Initiative(s), Tracking ID(s)***	***Applicable Regulations, Codes, Standards, and Best Practices (See Note)***	***Method of Verification (i.e., program)***	***Completion Date***	***Reference (section & page #)***
Create 1-km resolution of weather data across grid	*Weather forecasting, SA-06*	*Weather Forecast Standard*	*Weather forecast outputs with 1-km resolution*	*December 2028*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. The Pittsburg converter Station is a hardscaped site with an inherent fire-hardened grid design, that also it does not utilize overhead lines. For situational awareness, TBC relies on its highly trained System Operators. TBC's System Operators, as part of the initial qualifications, are trained regarding the potential weather impacts on system operability and fire risks using available local news sources and monitoring of reliability messaging tools. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. TBC is also directly supported in situational awareness of local conditions through close coordination with CAISO as TBC's Balancing Authority and PG&E, TBC's only neighboring Transmission Operator since TBC operates completely within PG&E's service territory. Operations personnel also utilize the real-time cable monitoring system to monitor the underground cable as well as real-time oil gas monitoring to support tracking of transformer health. TBC employs a GIS that provides high accuracy geo-plots of all TBC facilities. This GIS also plots excavation notifications which helps to minimize the likelihood of derangement due to uncoordinated excavations along the cable route. The Pittsburg Converter Station walls are equipped with motion sensors and inward and outward facing cameras. In Q3 2022, TBC installed a weather station to enhance its situational awareness and weather condition monitoring. TBC also receives seven day weather forecasts with a wildfire risk index.

Given the foregoing, TBC has no currently planned situational awareness initiative objectives in the 2023-2025 WMP Cycle. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. Based on the foregoing Table 8- 21 is marked as N/A meaning "Not Applicable".

Table 8- 21. Situational Awareness Initiative Objectives (3-year plan)

Objectives for Three Years (2023–2025)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

TBC has no currently planned situational awareness initiative objectives for the Trans Bay System for the 2026-2032 time period. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. Based on the foregoing Table 8- 22 is marked as N/A meaning "Not Applicable".

Table 8- 22. Situational Awareness Initiative Objectives (10-year plan)

Objectives for Three Years (2026–2032)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

8.3.1.2 Targets

Instructions: *Initiative targets are forward-looking quantifiable measurements of activities identified by each electrical corporation in its WMP. Electrical corporations will show progress toward completing targets in subsequent reports, including QDRs and WMP Updates.*
The electrical corporation must list all targets it will use to track progress on its situational awareness and forecasting for the three years of the Base WMP. Energy Safety's Compliance Assurance Division and third parties must be able to track and audit each target.[34] *For each initiative target, the electrical corporation must provide the following:*

- *Utility Initiative Tracking IDs.*
- *Projected targets for each of the three years of the Base WMP and relevant units.*
- *The expected "x% risk impact" For each of the three years of the Base WMP. The expected x% risk impact is the expected percentage risk reduction per year, as described in Section 7.2.2.2.*
- *Method of verifying target completion.*

The electrical corporation's targets must provide enough detail to effectively inform efforts to improve the performance (i.e., reduction in ignition probability or wildfire consequence) of the electrical corporation's situational awareness and forecasting initiatives.

Table 8-23 provides an example of the minimum acceptable level of information.

Table 8-23. Example of Situational Awareness Initiative Targets by Year

[34] *Annual information included in this section must align with Table 1 of the QDR.*

Initiative Activity	*Tracking ID*	*2023 Target & Unit*	*x% Risk Impact 2023*	*2024 Target & Unit*	*x% Risk Impact 2024*	*2025 Target & Unit*	*x% Risk Impact 2025*	*Method of Verification*
Install thermal cameras	*SA-03*	*5 thermal cameras installed*	*0.5%*	*10 thermal cameras installed*	*1%*	*25 thermal cameras installed*	*2.5%*	*Completed work orders, GIS Data Submission(s)*

See TBC's response to Section 8.3.1.1. TBC's System Operators, as part of the initial qualifications, are trained regarding the potential weather impacts on system operability and fire risks using available local news sources and monitoring of reliability messaging tools. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording. During the 2020-2022 WMP cycle, TBC improved its situational awareness capabilities by added real-time cable monitoring, real-time transformer oil monitoring and a weather station. Given the foregoing, TBC has no current plans for changes to its situational awareness and forecasting capabilities in the 2023 - 2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. Therefore Table 8- 23 is marked "N/A" meaning "Not Applicable".

Table 8- 23. Situational Awareness Initiative Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
N/A								

8.3.1.3 Performance Metrics Identified by the Electrical Corporation

Instructions: *Performance metrics indicate the extent to which an electrical corporation's Wildfire Mitigation Plan is driving performance outcomes. Each electrical corporation must:*

- *List the performance metrics the electrical corporation uses to evaluate the effectiveness of its situational awareness and forecasting in reducing wildfire and PSPS risk*[35]

[35] *There may be overlap between the performance metrics the electrical corporation uses and performance metrics required by Energy Safety. The electrical corporation must list these overlapping metrics in this section in addition to any unique performance metrics it uses.*

For each of these performance metrics listed, the electrical corporation must:

- *Report the electrical corporation's performance since 2020 (if previously collected)*
- *Projected performance for 2023-2025*
- *List method of verification*

The electrical corporation must ensure that each metric's name and values are the same in its WMP reporting as its QDR reporting (specifically, QDR Table 2 and QDR Table 3). Metrics listed in this section that are the same as performance metrics required by Energy Safety and reported in QDR Table 2 (Performance Metrics)[36] must match those reported in QDR Table 2. Metrics listed in this section that are not the same as any of the performance metrics identified by Energy Safety and reported in QDR Table 2 must match those reported in QDR Table 3.

The electrical corporation must:

- *Summarize its self-identified performance metric(s) in tabular form*
- *Provide a brief narrative that explains trends in the metrics*

Table 8-24 provides an example of the minimum acceptable level of information.

[36] *The performance metrics identified by Energy Safety are included in Energy Safety's Data Guidelines.*

Table 8-24. Example of Situational Awareness and Forecasting Performance Metrics Results by Year

Performance Metrics	*2020*	*2021*	*2022*	*2023 Projected*	*2024 Projected*	*2025 Projected*	*Method of Verification (e.g., third-party evaluation, QDR)*

TBC began commercial operations of the Trans Bay System in November 2010. Since the start of commercial operations, TBC has had no instigation of ignition by utility equipment and no incidents of utility-equipment caused fire. TBC projects the trend of zero (0) utility-equipment instigated ignitions to continue through the 2023-2025 WMP cycle and beyond given (i)the fire-harden grid design of the Trans Bay System, (ii) site improvements in the 2020-2022 WMP cycle, (iii) enhanced situational awareness capabilities, (iv) enhanced grid design, (v) limited scope of operations and (vi) no assets sited in a HFTD. The metrics cited below are the same as performance metrics required by Energy Safety and reported in QDR Table 2 and Table 3.

Table 8- 24. Situational Awareness and Forecasting Performance Metrics Results by Year

Performance Metrics	**2020**	**2021**	**2022**	**2023 Projected**	**2024 Projected**	**2025 Projected**	**Method of Verification (e.g., third-party evaluation, QDR)**
Vegetation-caused ignitions	0	0	0	0	0	0	QDR
Vegetation-caused outages	0	0	0	0	0	0	QDR
Open vegetation work orders	0	0	0	0	0	0	QDR

Value of assets destroyed by utility-related ignitions, listed by asset type	0	0	0	0	0	0	QDR
Structures damaged or destroyed by utility-related ignitions	0	0	0	0	0	0	QDR
Acreage burned by utility-related ignitions	0	0	0	0	0	0	QDR
Fatalities resulting from utility wildfire mitigation initiatives	0	0	0	0	0	0	QDR
Number of utility-related ignitions	0	0	0	0	0	0	QDR
OSHA-reportable injuries from utility wildfire mitigation initiatives	0	0	0	0	0	0	QDR

8.3.2 Environmental Monitoring Systems

Instructions: *The electrical corporation must describe its systems and procedures for monitoring environmental conditions within its service territory. These observations should inform the electrical corporation's near-real-time risk assessment and weather forecast validation. The electrical corporation must document the following:*

- *Existing systems, technologies, and procedures*
- *How the need for additional systems is evaluated*
- *Implementation schedule for any planned additional systems*
- *How the efficacy of systems for reducing risk are monitored*

Reference the Utility Initiative Tracking ID where appropriate.

TBC's facilities are in an urban/industrial environment and its transmission facilities are either buried or submerged beneath Bay Area waters. TBC's facilities utilize no overhead transmission lines. As a result, TBC does not have a VMP and is not required to maintain a VMP under NERC Reliability Standards or any CASIO maintenance requirements. TBC makes quarterly reports to WECC, that TBC has no requirement have a VMP. TBC does undertake abatement of vegetative fuels on its converter stations at the cost of which is incorporated into landscape maintenance. TBC's Converter Maintenance Practices also includes a quarterly task item to conduct visual inspection of vegetation or weed growth around the converter station. TBC implemented additional wildfire hardening measures at the Trans Bay System between 2020 and 2022 to enhance situational awareness by a weather station, transformer oil gas monitoring, cable monitoring system and a transformer monitoring system. Given the foregoing, TBC has no current plans for changes to its environmental monitoring capabilities in the 2023-2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.2.1 Existing Systems, Technologies, and Procedures

Instructions: *The electrical corporation must report on the environmental monitoring systems and related technologies and procedures currently in use, highlighting any improvements made since the last WMP submission. At a minimum, the electrical corporation must discuss systems, technologies, and procedures related to the reporting of the following:*

- *Current weather conditions:*
  - *Air temperature*
  - *Relative humidity*
  - *Wind velocity (speed and direction)*
- *Fuel characteristics:*
  - *Seasonal trends in fuel moisture*

Each system must be summarized in Table 8-25. The electrical corporation must provide the following additional information for each system in the accompanying narrative:

- *Generalized location of the system / locations measured by the system (e.g., HTFD, entire service territory).*
- *Integration with the broader electrical corporation's system.*
- *How measurements from the system are verified.*
- *Frequency of maintenance.*
- *For intermittent systems (e.g., aerial imagery, line patrols), what triggers collection. This should include flow charts and equations as appropriate.*
- *For calculated quantities, how raw measurements are converted into calculated quantities. This should include flow charts and equations as appropriate.*

Table 8-25. Example of Environmental Monitoring Systems

System	***Measurement/ Observation***	***Frequency***	***Purpose and Integration***
Weather stations	*Steady wind velocity* *Gust wind velocity* *Air temperature* *Relative humidity*	*3,600 observations / hour*	*Improve weather forecasts through data assimilation* *Validate model*
Remote sensing fuel moistures	*Percentiles*	*Once a day*	*Calculate fuel moisture content*

See TBC's response to Section 8.3.2. TBC's facilities are in an urban/industrial environment and its transmission facilities are either buried or submerged beneath Bay Area waters. TBC's facilities utilize no overhead transmission lines. As a result environmental factors do not have significant impact on the Trans Bay System's operations. However, TBC utilizes a weather station and a wildfire risk index, Optos/Firecaster, for environmental monitoring and situational awareness.

Table 8- 25. Example of Environmental Monitoring Systems

System	**Measurement/ Observation**	**Frequency**	**Purpose and Integration**
Weather station	Temperature Wind speed Wind direction Soil moisture Soil temperature Air quality index	Real-time data (constant measurement)	Provide localized data validation Situational awareness
Optos/Firecaster	Wildfire Risk Index	Real-time	Data model to predict the likelihood of a wildfire occurring and spreading taking into account current

			weather conditions, seasonality, and locale (Urban, rural, suburban, mountain, etc.)

Figure TBC 8.3.2- 1. Weather Station at the Pittsburg Converter Station

8.3.2.2 Evaluation and Selection of New Systems

Instructions: *The electrical corporation must describe how it evaluates the need for additional environmental monitoring systems. This description must include:*

- *How the electrical corporation evaluates the impact of new systems on reducing risk (e.g., expected quantitative improvement in weather forecasting)*

- *How the electrical corporation evaluates the efficacy of new technologies*

These descriptions should include flow charts as appropriate.

TBC's facilities are in an urban/industrial environment and its transmission facilities are either buried or submerged beneath Bay Area waters. TBC's facilities utilize no overhead transmission lines. As a result environmental factors do not have significant impact on the Trans Bay System's operations. TBC implemented additional wildfire hardening measures at the Trans Bay System between 2020 and 2022 to enhance situational awareness by a weather station, transformer oil gas monitoring, cable monitoring system and a transformer monitoring system. Given the foregoing, TBC has no current plans for changes to its environmental monitoring capabilities in the 2023-2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.2.3 Planned Improvements

Instructions: *The electrical corporation must describe its planned improvements for its environmental monitoring systems.[37] This must include any plans for the following:*

- *Expansion of existing systems*
- *Establishment of new systems*

For each planned improvement, the electrical corporation must provide the following in Table 8-26:

- ***Description:*** *A description of the planned initiative activity*
- ***Impact:*** *Reference to and description of the impact of the initiative activity on each risk and risk component*
- ***Prioritization:*** *A description of the x% risk impact (see Section 8.1.1.2 for explanation)*
- ***Schedule:*** *A description of the planned schedule for implementation*

Table 8-26. Example of Planned Improvements to Environmental Monitoring Systems

System	*Description*	*Impact*	*x% Risk Impact*	*Implementation Schedule*

See TBC's responses to Sections 8.3.2.1 and 8.3.2.2. TBC deems its current capabilities sufficient to meet the needs of its facility's limited footprint and scale of operations. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. As a result, Table 8- 26 is marked "N/A" meaning "Not Applicable".

Table 8- 26. Planned Improvements to Environmental Monitoring Systems

[37] *Annual information included in this section must align with Tables 7 and 8 of the QDR.*

System	Description	Impact	x% Risk Impact	Implementation Schedule
N/A				

8.3.2.4 Evaluating Mitigation Initiatives

Instructions: *The electrical corporation must describe its procedures for the ongoing evaluation of the efficacy of its environmental monitoring program.*

See response to Section 8.3.2.2. The facility has hardscaped defensible space by design and utilizes no overhead lines which limits the impact of environmental factors on operations. TBC also added a weather station and improved situational capabilities.

To inform appropriate wildfire hardening initiatives, TBC uses the FMEA process and support from third-party site wildfire assessments. The FMEA considers the potential failures from each TBC Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. A third-party wildfire assessment was utilized to supplement the initial FMEA and provides independent evaluation/assessment of wildfire risk at the facility and opportunities for risk mitigation. TBC utilized the combined information to target mitigation initiatives that provided meaningful impact to reducing the likelihood of utility equipment instigating a fire and the promulgation and impact of a fire if one occurred. TBC updates the FMEA annually to ensure controls and processes are functioning as intended, review potential failure modes and effects of any newly added or changed equipment, and assess new opportunities for risk reduction driven by new technologies, best practices, and experience of affiliates, among other things. Given the limited scale and scope of the TBC current operations and that it operates outside of HFTDs, TBC has no current plans for changes to its environmental monitoring capabilities at in the 2023-2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.3 Grid Monitoring Systems

Instructions: *The electrical corporation must describe its systems and procedures used to monitor the operational conditions of its equipment. These observations should inform the electrical corporation's near-real-time risk assessment. The electrical corporation must document:*

- *Existing systems, technologies, and procedures*
- *Procedure used to evaluate the need for additional systems*
- *Implementation schedule for any planned additional systems*
- *How the efficacy of systems for reducing risk are monitored*

Reference the Utility Initiative Tracking ID where appropriate.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. TBC's System Operators, as part of the initial qualifications, are trained regarding the potential weather impacts on system operability and fire risks using available local news sources and monitoring of reliability messaging tools. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. TBC also performs weekly asset inspections which are conducted designated Operations personnel. The inspections include general checks and measurements, visual inspections, general housekeeping, and vegetation control. Operations personnel also utilize the real-time cable monitoring system to monitor the underground cable as well as real-time oil gas monitoring to support tracking of transformer health.

8.3.3.1 Existing Systems, Technologies, and Procedures

Instructions: *The electrical corporation must report on the grid system monitoring systems and related technologies and procedures currently in use, highlighting any improvements made since the last WMP submission. At a minimum, the electrical corporation must discuss systems, technologies, and procedures related to the detection of:*

- *Faults (e.g., fault anticipators, rapid earth fault current limiters, etc.)*
- *Failures*
- *Recloser operations*

Each system must be summarized in Table 8-27 below. The electrical corporation must provide the following information for each system in the accompanying narrative:

- *Location of the system / locations measured by the system*
- *Integration with the broader electrical corporation's system*
- *How measurements from the system are verified*
- *For intermittent systems (e.g., aerial imagery, line patrols), what triggers collection. This should include flow charts and equations as appropriate*
- *For calculated quantities, how raw measurements are converted to calculated quantities. This should include flow charts and equations as appropriate.*

Table 8-27. Example of Grid Operation Monitoring Systems

System	***Measurement/ Observation***	***Frequency***	***Purpose and Integration***
Line sensors	*• Electrical current • Electrical voltage*	*• 3,600 observations / hour*	*• Early fault detection*

	• *Waveform harmonics*		• *Distribution fault anticipator (DFA)*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System is a transmission-only system with no overhead lines and no distribution elements. Given its limited footprint and the size and scope of its operations, TBC does not utilize a grid management system. TBC's System Operators, as part of the initial qualifications, are trained regarding the potential weather impacts on system operability and fire risks using available local news sources and monitoring of reliability messaging tools. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers.

The nature of the AC/DC conversion system employed by TBC has control and protection features that "Block" transmission within microseconds of a fault detection and will initiate an Emergency Shut Off in milliseconds; significantly faster than traditional interrupting devices employed in other transmission systems. The Trans Bay System already possesses fault monitoring and detection capabilities that exceed that utilized in more traditional transmission systems.

Voltage and current measurement values are pre-processed in the C&P Measurement Systems and transmitted to the Converter Control and DC Protection systems. Other measured values and data from the process level are exchanged via the Field Bus system with de-centralized Bay Control Units. Converter related data from the Current Control System (CCS) and the Converter Control are exchanged via Control Bus, for e.g. power reference values, power limitations and control commands as well as status information. Status and control information from the CCS and Module Management System (MMS) are also communicated via Control LAN to the Monitoring and Diagnostics System (MDS). Filtered status information is sent from the MDS to the Converter Controls via SCADA LAN. These also include time tagged messages from the CCS and MMS systems.

These systems are implemented with independent redundancy concept. Two identical converter control and protection systems are provided with all input signals. The signals are fed to both systems which evaluate these continuously and generate the required control outputs. The standby (passive) controllers are updated by the active system with all relevant statuses and setting values. Plausibility checking and change over logic detect potential errors and initiate protective actions

TBC employs a GIS that provides high accuracy geo-plots of all TBC facilities. This system also plots excavation notifications which helps to minimize the likelihood of derangement due to uncoordinated

excavations all the cable route. In 2020, TBC implemented two (2) continuous monitoring sensors initiatives that provided operational risk mitigation. The first was a fiber-optic based cable monitoring system which allows TBC to monitor the cable for physical vibration, temperature, and abnormal electrical discharge at the cable terminations.

The cable monitoring system uses fiber optics to employ a technique to monitor and measure physical strain in glass fiber by detecting changes in the refractive index of the fiber caused by acoustic waves. This technique involves the use of an optical fiber that is sensitive to changes in strain or temperature. When an acoustic wave travels through the fiber, it causes the fiber to deform slightly, which in turn causes a change in the refractive index of the fiber. This change in refractive index can be detected and measured using optical sensors that are attached to the fiber.

The monitoring system can also detect and locate partial discharges at the cable terminations, which can be early indicators of potential faults or failures. By monitoring partial discharges continuously, the monitoring system can provide real-time alerts to system operators, allowing them to take corrective action before a fault or failure occurs. The monitoring system is inspected on a routine basis to ensure the measurement equipment is functioning properly. Additionally, TBC employs the use of independent partial discharge monitoring equipment which uses different technology to confirm the monitoring system is functioning properly.

The second was a transformer monitoring system which has real-time oil analysis to detect and prevent internal faults on the transformer, as well as partial discharge monitoring of the transformer bushings to detect bushing degradation that could lead to failure. This system provides potentially predictive data on transformer failure which has the potential for initiating an ignition event. In 2021, TBC implemented a transformer oil control system which provided new control and flow sensor on its main transformers. This system allows station personnel to have improved assess to oil flow indication and controls which allows for more accurate preventative maintenance. This system in conjunction with the transformer monitoring system, which was installed in 2020, provides enhanced data that can be utilized to assess transformer health and potentially predict transformer failure which has the potential for initiating an ignition event.

Table 8- 27. Grid Operation Monitoring Systems

System	Measurement/ Observation	Frequency	Purpose and Integration
Converter Control & Protection	Electrical Voltage AC Electrical Current AC Electrical Voltage DC Electrical Current DC	Converter Fast Telecontrol = 250 / second (250hz)	Converter Control & Protection Sequence of Event Recording

	AC Waveform Harmonics DC / Converter Harmonics	DC Protection = 500 / second (500hz)	Transmission System Control Transient Fault Recording Alarming
AC Line Protection	Electrical Current AC	16 samples/cycle (1kHZ)	AC Line Differential
Transformer Protection	Electrical Current AC	16 samples/cycle (1kHZ)	Transformer Differential
WinCC	Electrical Voltage AC Electrical Current AC Electrical Voltage DC Electrical Current DC Power (MW/MVAR) Temperature, Ambient Temperature, Coolant	10 times per second (10hz)	Process control and supervision Process data visualization Sequence of Event Recording display Alarming
TBC Trac	Marine Traffic AIS data feed USAN 811 Dig API	4 times per minute	Visualization of ships Visualization of construction excavation activity
Prysmian DAS/DTS	Fiber Optic Cable Light Refractive Index	DAS = 10khz DTS = 3 times per hour	DAS process visualizes kinetic energy in real time, to detect cable faults, derangement, or potential physical contact DTS process visualizes thermal energy in real time to calculate estimated ampacity and burial depth

Pry-Cam Grids	Electrical Current	PDM = once every 3 minutes	Detect and locate partial discharge activity and provide real time alerts.
Serveron TM8	Dissolved Gasses in Oil	DGA = 4 times / hour	Detect dissolved gasses in transformer oil. Provides alerts upon detection in excess of allowable thresholds

8.3.3.2 Evaluation and Selection of New Systems

Instructions: *The electrical corporation must describe how it evaluates the need for additional grid operation monitoring systems. This description must include:*

- *How the electrical corporation evaluates the impact of new systems on reducing risk (e.g., expected reduction in ignitions from failures, expected reduction in failures)*
- *How the electrical corporation evaluates the efficacy of new technologies*

These descriptions should include flow charts as appropriate.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System is a transmission-only system with no overhead lines and no distribution elements. Given its limited footprint and the size and scope of its operations, TBC does not utilize a grid management system. TBC's System Operators, as part of the initial qualifications, are trained regarding the potential weather impacts on system operability and fire risks using available local news sources and monitoring of reliability messaging tools. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. Additionally, as described in detail in Section 6 of this WMP, TBC uses the FMEA process to identify and mitigate wildfire-related risks at the Trans Bay System. TBC updates the FMEA annually to ensure controls and processes are functioning as intended, review potential failure modes and effects of any newly added or changed equipment, and assess new opportunities for risk reduction driven by new technologies, best practices, and experience of affiliates, among other things. Given the limited scale and scope of the TBC current operations, TBC has no current plans for changes to grid monitoring capabilities in the 2023-2025 WMP Cycle and

beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.3.3 Planned Improvements

Instructions: *The electrical corporation must describe its planned improvements in its grid operation monitoring systems. This must include any plans for the following:*

- *Expansion of existing systems*
- *Establishment of new systems*

For each planned improvement, the electrical corporation must provide the following in Table 8-28:

- *Description: A description of the planned initiative activity*
- *Impact: Reference to and description of the impact of the initiative activity on each risk and risk component*
- *Prioritization: A description of the x% risk impact (see Section 8.1.1.2 for explanation)*
- *Schedule: A description of the planned schedule for implementation*

Table 8-28. Example of Planning Improvements to Grid Operation Monitoring Systems

System	***Description***	***Impact***	***x% Risk Impact***	***Implementation Schedule***
Line sensors on distribution lines	*Installation of DFA sensors on circuit segments in distribution lines in HFTD*	*Early fault detection to prevent ignition from a line which had failure resulting from contact or equipment failure*	*80%*	*Pilot program, 2023–2025* *Analysis of pilot, 2025–2026* *Installation of systems, 2026–2029*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System is a transmission-only system with no overhead lines and no distribution elements. Given its limited footprint and the size and scope of its operations, TBC does not utilize a grid management system. TBC's System Operators, as part of the initial qualifications, are trained regarding the potential weather impacts on system operability and fire risks using available local news sources and monitoring of reliability messaging tools. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing

process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. Additionally, as described in detail in Section 6 of this WMP, TBC uses the FMEA process to identify and mitigate wildfire-related risks at the Trans Bay System. TBC updates the FMEA annually to ensure controls and processes are functioning as intended, review potential failure modes and effects of any newly added or changed equipment, and assess new opportunities for risk reduction driven by new technologies, best practices, and experience of affiliates, among other things. TBC implemented additional wildfire hardening measures at the Trans Bay System between 2020 and 2022 to enhance situational awareness by a weather station, transformer oil gas monitoring, cable monitoring system and a transformer monitoring system. Given the limited scale and scope of the TBC operations, TBC has no current plans for changes to its grid monitoring capabilities in the 2023-2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. As a result Table 8- 28 is marked "N/A" meaning "Not Applicable".

Table 8- 28. Planning Improvements to Grid Operation Monitoring Systems

System	Description	Impact	x% Risk Impact	Implementation Schedule
N/A				

8.3.3.4 Evaluating Mitigation Initiatives

Instructions: *The electrical corporation must describe its procedures for the ongoing evaluation of the efficacy of its grid operation monitoring program.*

To inform appropriate wildfire hardening initiatives, TBC uses the FMEA process and support from third-party site wildfire assessments. The FMEA considers the potential failures from each TBC Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. A third-party wildfire assessment was utilized to supplement the initial FMEA and provides independent evaluation/assessment of wildfire risk at the facility and opportunities for risk mitigation. TBC utilized the combined information to target mitigation initiatives that provided meaningful impact to reducing the likelihood of utility equipment instigating a fire and the promulgation and impact of a fire if one occurred. TBC updates the FMEA annually to ensure controls and processes are functioning as intended, review potential failure modes and effects of any newly added or changed equipment, and assess new opportunities for risk reduction driven by new technologies, best practices, and experience of affiliates, among other things. Given the limited scale and scope of the TBC operations, TBC has no current plans for changes to its grid monitoring capabilities in the 2023-2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.3.5 Enterprise System for Grid Monitoring

Instructions: *In this section, the electrical corporation must provide an overview of its enterprise system for grid monitoring. This overview must include discussion of:*

- *Any database(s) used for storage*
- *Describe the electrical corporation's internal documentation of its database(s)*
- *Integration with systems in other lines of business*
- *Describe any QA/QC or auditing of its system*
- *Describe internal processes for updating the enterprise system including database(s)*
- *Any changes to the initiative since the last WMP submission and a brief explanation as to why those changes were made. Include any planned improvements or updates to the initiative and the timeline for implementation*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System is a transmission-only system with no overhead lines and no distribution elements. Given its limited footprint and the size and scope of its operations, TBC does not utilize a grid management system. TBC's System Operators, as part of the initial qualifications, are trained regarding the potential weather impacts on system operability and fire risks using available local news sources and monitoring of reliability messaging tools. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. TBC's Operations Manager works with TBC's field operations personnel to review results of weekly inspections and identify any gaps or issues that need to be addressed to mitigate problems and reduce risk of utility-caused ignitions. This effort is also supported by TBC's Director Operations. This review also to ensures sustainment of efforts to identify any potential sources of ignition and near misses. Due to the limited scope and scale of operations, TBC currently does not employ an enterprise system for grid monitoring.

8.3.4 Ignition Detection Systems

Instructions: *The electrical corporation must describe its systems, technologies, and procedures used to detect ignitions within its service territory and gauge their size and growth rates.*
The electrical corporation must document the following:

- *Existing ignition detection sensors and systems*
- *Evaluation and selection of new ignition detection systems*
- *Planned integration of new ignition detection technologies*
- *Monitoring of mitigation improvements*

Reference the Utility Initiative Tracking ID where appropriate.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The eastern converter station is located in Pittsburg, CA which is adjacent to an area designated as a Tier 2 (Elevated) HFTD. All aboveground transmission infrastructure is fully contained within the walls of the system's converter stations. TBC utilizes the Siemens SIMATIC WinCC platform, a scalable and innovative process-visualization system with numerous high-performance functions for monitoring the HVDC Converter, and associated transmission system. WinCC offers complete functionality for complex visualization tasks, SCADA applications, and intelligent redundancy. The PC-based system acts as the human-machine interface for TBC's System Operators, providing process supervision and control, long term data archiving, trending, and Sequence of Events recording at the Primary and Backup Transmission Operations Control Centers. TBC is also directly supported in situational awareness of local conditions through close coordination with CAISO as TBC's Balancing Authority and PG&E, TBC's only neighboring Transmission Operator since TBC operates completely within PG&E's service territory. As previously indicated, weather, RFW days, and fire index have been assessed as having negligible impact on TBC's operational profile due to TBC's transmission path being completely underground or submerged.

The nature of the AC/DC conversion system employed by TBC has control and protection features that "Block" transmission within microseconds of a fault detection and will initiate an Emergency Shut Off in milliseconds; significantly faster than traditional interrupting devices employed in other transmission systems. The Trans Bay System already possesses fault monitoring and detection capabilities that exceed that utilized in more traditional transmission systems. The Pittsburg Converter Station is surrounded by a twelve (12) foot concrete perimeter wall that is equipped with motion sensors and inward and outward facing cameras. There are also local fire department approved fire lanes completely around the site perimeter inside the perimeter wall. Each site contains Knox boxes accessible to Emergency Services. The converter stations as also equipped with monitoring, detection, alarm, and suppression systems that have been implemented and maintained per applicable codes and statutes and are annually inspected and approved by the local fire department. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.4.1 Existing Ignition Detection Sensors and Systems

Instructions: *The electrical corporation must report on the sensors and systems, technologies, and procedures for ignition detection that are currently in use, highlighting any improvements made since the last WMP submission. At a minimum, the electrical corporation must document the deployment of each of the following:*

- *Early fire detection including, for example:*
  - *Satellite infrared imagery*
  - *High-definition video*
  - *Infrared cameras*
- *Fire growth potential software*

The electrical corporation must summarize each system in Table 8-29 below. It must provide the following additional information for each system in an accompanying narrative:

- *General location of detection sensors (e.g., HFTD or entire service territory)*
- *Resiliency of sensor communication pathways*
- *Integration of sensor data into machine learning or AI software*
- *Role of sensor data in risk response*
- *False positives filtering*
- *Time between detection and confirmation*
- *Security measures for network-based sensors*

Table 8-29. Example of Fire Detection Systems Currently Deployed

Detection System	***Capabilities***	***Companion Technologies***	***Contribution to Fire Detection and Confirmation***
Video cameras	*Real-time viewing of remote area to detect smoke and wildfires*	*Used with satellite imagery to verify fire detection*	*Video cameras allow fast and accurate detection or confirmation of wildfires and can help operators assess the scope of resource response needed.*

TBC Operations team monitors the asset 24/7 via the presence of the onsite operator who utilities the Siemens HMI to monitor the Trans Bay System through the facility's remote sensors and monitors and on-site cameras.

Table 8- 29. Fire Detection Systems Currently Deployed

Detection System	**Capabilities**	**Companion Technologies**	**Contribution to Fire Detection and Confirmation**
Site Video cameras	Real-time viewing of Pittsburg Converter Station and immediate surrounding area to detect smoke and fires	Used with weather station to verify fire detection and access to Optos/Firecaster wildfire risk notifications	Video cameras allow fast and accurate detection or confirmation of wildfires and can help operators assess

			the scope of resource response needed.
Optos/Firecaster	Real time tracking of wildfire conditions Fire growth potential prediction and modeling	Site Cameras	Data model to predict the likelihood of a wildfire occurring and spreading taking into account current weather conditions, seasonality, and locale (Urban, rural, suburban, mountain, etc.)

8.3.4.2 Evaluation and Selection of New Detection Systems

Instructions: *The electrical corporation must describe how it evaluates the need for additional ignition detection technologies. This description must include:*

- *How the electrical corporation evaluates the impact on new detection technologies on reducing and improving detection and response times*
- *How the electrical corporation evaluates the efficacy of new technologies*
- *The electrical corporation's budgeting process for new detection system purchases*

To inform appropriate wildfire hardening initiatives, TBC uses the FMEA process and support from third-party site wildfire assessments. The FMEA considers the potential failures from each TBC Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. A third-party wildfire assessment was utilized to supplement the initial FMEA and provides independent evaluation/assessment of wildfire risk at the facility and opportunities for risk mitigation. TBC utilized the combined information to target mitigation initiatives that provided meaningful impact to reducing the likelihood of utility equipment instigating a fire and the promulgation and impact of a fire if one occurred. TBC updates the FMEA annually to ensure controls and processes are functioning as intended, review potential failure modes and effects of any newly added or changed equipment, and assess new opportunities for risk reduction driven by new technologies, best practices, and experience of affiliates, among other things. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.4.3 Planned Integration of New Ignition Detection Technologies

Instructions: *The electrical corporation must provide an implementation schedule for new ignition detection and alarm system technologies. This must include any plans for the following:*

- *Integration of new systems into existing physical infrastructure*

- *Integration of new systems into existing data analysis*
- *Increases in budgets and staffing to support new systems*

For each new technology system, the electrical corporation must provide the following in Table 8-30:

- ***Description:** A description of the technology's capabilities*
- ***Impact:** A description of the impact the technology will have on each risk and risk component*
- ***Prioritization:** A description of the x% risk impact (see Section 8.1.1.2 for explanation)*
- ***Schedule:** A description of the planned schedule for implementation*

Table 8-30. Example of Planning Improvements to Fire Detection and Alarm Systems

System	***Description***	***Impact***	***x% Risk Impact***	***Implementation Schedule***
High-definition cameras	*Installation of high-definition cameras within the HFTD*	*Estimated reduction in average time to detection within HFTD from 4 hours to 1 hour*	*80%/10%*	*Installation of systems – 2024*

TBC Operations team monitors the asset 24/7 via the presence of the onsite operator who utilities the Siemens HMI to monitor the Trans Bay System through the facility's remote sensors and monitors and on-site cameras. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. As a result Table 8- 30 is marked "N/A" meaning "Not Applicable".

Table 8- 30. Planning Improvements to Fire Detection and Alarm Systems

System	**Description**	**Impact**	**x% Risk Impact**	**Implementation Schedule**
N/A				

8.3.4.4 Evaluating Mitigation Initiatives

***Instructions:** The electrical corporation must describe its procedures for the ongoing evaluation of the efficacy of its fire detection systems.*

To inform appropriate wildfire hardening initiatives, TBC uses the FMEA process and support from third-party site wildfire assessments. The FMEA considers the potential failures from each TBC Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. A

third-party wildfire assessment was utilized to supplement the initial FMEA and provides independent evaluation/assessment of wildfire risk at the facility and opportunities for risk mitigation. TBC utilized the combined information to target mitigation initiatives that provided meaningful impact to reducing the likelihood of utility equipment instigating a fire and the promulgation and impact of a fire if one occurred. TBC updates the FMEA annually to ensure controls and processes are functioning as intended, review potential failure modes and effects of any newly added or changed equipment, and assess new opportunities for risk reduction driven by new technologies, best practices, and experience of affiliates, among other things. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.3.4.5 Enterprise System for Ignition Detection

Instructions: *In this section, the electrical corporation must provide an overview of its enterprise system for ignition detection. This overview must include discussion of:*

- *Any database(s) used for storage.*
- *Describe the electrical corporation's internal documentation of its database(s).*
- *Integration with systems in other lines of business.*
- *Describe any QA/QC or auditing of its system.*
- *Describe internal processes for updating the enterprise system including database(s).*
- *Any changes to the initiative since the last WMP submission and a brief explanation as to why those changes were made. Include any planned improvements or updates to the initiative and the timeline for implementation.*

TBC Operations team monitors the asset 24/7 via the presence of the onsite operator who utilities the Siemens HMI to monitor the Trans Bay System through the facility's remote sensors and monitors and on-site cameras. TBC implemented additional wildfire hardening measures at the Trans Bay System between 2020 and 2022 to enhance situational awareness by a weather station, transformer oil gas monitoring, cable monitoring system and a transformer monitoring system. TBC's Operations Manager works with TBC's field operations personnel to review results of weekly inspections and identify any gaps or issues that need to be addressed to mitigate problems and reduce risk of utility-caused ignitions. This effort is also supported by TBC's Director Operations. This review also to ensures sustainment of efforts to identify any potential sources of ignition and near misses. Due to the limited scope and scale of operations, TBC currently does not employ an enterprise system for ignition detection.

8.3.5 Weather Forecasting

Instructions: *The electrical corporation must describe its systems and procedures used to forecast weather within its service territory. These forecasts should inform the electrical corporation's near-real-time-risk assessment and PSPS decision-making processes. The electrical corporation must document the following:*

- *Its existing modeling approach*
- *The known limitations of its existing approach*
- *Implementation schedule for any planned changes to the system*
- *How the efficacy of systems for reducing risk are monitored*

Reference the Utility Initiative Tracking ID where appropriate.

TBC is an ITO that has transmission-only assets and does not have a service territory or end-use customers. As noted on page 10 of Energy Safety's ITO Supplement, ITOs have significantly less infrastructure than large investor-owned utilities and SMJUs and do not have service territories. Energy Safety notes that ITOs' weather forecasting systems, processes, and procedures do not have to be informed by modeling. However, Energy Safety states that ITOs must describe their approach to forecasting the weather.

Based on the foregoing, TBC's WMP does not include Sections 8.3.5.1 through 8.3.5.5. Instead TBC provides the following information pursuant to Energy Safety's direction on page 10 of Energy Safety's ITO Supplement.

Although, weather conditions do not have material impact on TBC's operations and TBC does not have any asset in a HFTD, TBC enhanced its weather forecasting capabilities in Q4 2022 when it completed installation of its weather station. TBC receives twice daily forecast emails on wildfire risk conditions. Optos/Firecaster provides a 7 day outlook of a wildfire risk index.

8.3.6 Fire Potential Index

Instructions: *The electrical corporation must describe its process for calculating its fire potential index (FPI) or a similar a landscape scale index used as a proxy for assessing real-time risk of a wildfire under current and forecasted weather conditions. The electrical corporation must document the following:*

- *Its existing calculation approach and how its FPI is used in its operations*
- *The known limitations of its existing approach*
- *Implementation schedule for any planned changes to the system*

Reference the Utility Initiative Tracking ID where appropriate.

8.3.6.1 Existing Calculation Approach and Use

Instructions: *The electrical corporation must describe:*

- *How it calculates its own FPI or if uses an external source, such as the United States Geological Survey*[38]
- *How it uses its or an FPI in its operations*

Additionally, if the electrical corporation calculates its own FPI, it must provide tabular information regarding the features of its FPI. Table 8-32 provides a template for the required information.

[38] *United States Geological Survey Fire Danger Map and Data Products Web Page (accessed Oct. 27, 2022): https://firedanger.cr.usgs.gov/viewer/index.html.*

Table 8-32: Example of Fire Potential Features

Feature Group	Feature	Altitude	Description	Source	Update Cadence	Spatial Granularity	Temporal Granularity
Weather	Temperature	Surface	Temperature at the surface in Fahrenheit	Weather model	6x per day	1 km	Hourly
Fuel Moisture	Dead Fuel Moisture	Surface	Fuel moisture content	Weather model & third-party data set	Daily	2 km	Daily

In its decision on TBC's 2022 WMP, Energy Safety observed that TBC should evaluate adding a weather station to enhance its weather conditions monitoring capabilities. Although, weather conditions do not have material impact on TBC's operations and TBC does not have any asset in a HFTD, TBC took the recommendation as an opportunity to enhance its situational awareness. TBC does not use a fire potential index, however, TBC completed install of its weather station in Q4 2022 and also has access to the Firecaster Wildfire Risk Index (WRI). The Firecaster WRI uses multiple data sources to assess the relative risk of explosive wildfires. The index considers wildfire growth based on vegetation, weather and active wildfires as factors. The resulting WRI is displayed in the Optos user interface providing a scale of low, elevated, high and extreme risk of fire. The automated model produces visualizations that can be used internally for validation, refinement, and customer Q&A. Forecast emails are provided twice daily. TBC does not have any operations in a HFTD, wildlands or a wildland urban interface, however TBC intends to utilize the system to monitor conditions that may lead to brush/grassland fires in the area for situational awareness purposes.

Table 8- 31. Fire Potential Features

Feature Group	Feature	Altitude	Description	Source	Update Cadence	Spatial Granularity	Temporal Granularity
Weather	Temperature, Wind Speed, Wind Direction, Humidity, Rainfall	Surface	Weather forecast data from NOAA models	AerisWeather	2x daily	5km	hourly
Weather	Recent rainfall	Surface	Recent rainfall from weather stations	AerisWeather	Daily	5km	hourly

Fuel	Soil Moisture	Topsoil	Modeled soil moisture from NOAA models	NOAA	daily	0.25 degrees	Daily
Fuel	Vegetation Greenness	Surface	Observed NDVI from MODIS satellites	MODIS	14 days	500 meters	14 days
Fuel	Snow Cover	NOAA	Current snow cover	NOAA	Daily	~10km	Daily
Fires	Active Fire Hotspots	Surface	Active fire hotspots observed by NOAA20/VIIRS satellites	FIRMS	6-8 hours	~300 meters	hourly

8.3.6.2 Known Limitations of Existing Approach

Instructions: *The electrical corporation must describe any known limitations of current FPI calculation.*

Given the limited scale and scope of TBC's operations and having no operations in an HFTD, the current tool capabilities are deemed sufficient for the level of monitoring needed commensurate with the scale of operations. TBC has no planned improvements to its current capabilities.

8.3.6.3 Planned Improvements

Instructions: *The electrical corporation must describe its planned improvements for its FPI including a description of the improvement and the planned schedule for implementation.*

In its decision on TBC's 2022 WMP, Energy Safety observed that TBC should evaluate adding a weather station to enhance its weather conditions monitoring capabilities. Although, weather conditions do not have material impact on TBC's operations, TBC took the recommendation as an opportunity to enhance its situational awareness. TBC completed install of its weather station in Q4 2022. TBC receives twice daily forecast emails on wildfire risk conditions. TBC has no current plans for additional changes to weather station and fire risk tool in the 2023-2025 WMP Cycle. TBC deems its current capabilities sufficient to meet the needs of its facility's limited footprint and scale of operations as TBC does not have any operations in a HFTD, wildlands or a wildland urban interface. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed.

8.4 Emergency Preparedness

8.4.1 Overview

Instructions: *Each electrical corporation must develop and adopt an emergency preparedness[39] plan in compliance with the standards established by the CPUC pursuant to Public Utilities Code section 768.6(a). Wildfires and PSPS events introduce unique risk management challenges requiring the electrical corporation to evaluate, develop, and implement wildfire- and PSPS-specific emergency preparedness activities as part of a holistic emergency preparedness strategy.*

In this section, the electrical corporation must identify objectives for the next 3- and 10-year periods, targets, and performance metrics related to the following emergency preparedness programmatic areas:

- *Wildfire and PSPS emergency preparedness plan*
- *Collaboration and coordination with public safety partners*
- *Public notification and communication strategy*
- *Preparedness and planning for service restoration*
- *Customer support in wildfire and PSPS emergencies*
- *Learning after wildfire and PSPS events*

8.4.1.1 Objectives

Instructions: *Each electrical corporation must summarize the objectives for its 3-year and 10-year plans for implementing and improving its emergency preparedness.[40] These summaries must include the following:*

- *Identification of which initiative(s) in the WMP the electrical corporation is implementing to achieve the stated objective, including Utility Initiative Tracking IDs*
- *Reference(s) to applicable codes, standards, and best practices/guidelines and an indication of whether the electrical corporation exceeds an applicable code, standard, or regulation*
- *Method of verifying achievement of each objective*
- *A completion date for when the electrical corporation will achieve the objective*
- *Reference(s) to the WMP section(s) or appendix, including page numbers, where the details of the objective(s) are documented and substantiated*

This information must be provided in Table 8-33 for the 3-year plan and Table 8-34 for the 10-year plan. Examples of the minimum acceptable level of information are provided below.

Table 8-33. Example of Emergency Preparedness Initiative Objectives (3-year plan)

[39] *"Emergency and Disaster Preparedness" from Public Utilities Code section 768.6 has been shortened here to Emergency Preparedness.*

[40] *Annual information included in this section must align with the QDR data.*

Objectives for Three Years (2023–2025)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
Update workforce training for emergency response	*Emergency Preparedness Plan, EP-01*	*Emergency Readiness Training Portfolio; GO 166*	*Updated emergency response training curriculums; training records including pass rates*	*June 2024*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation and substantiation.

Table 8-34. Example of Emergency Preparedness Initiative Objectives (10-year plan)

Objectives for Ten Years (2026–2032)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
Increase granularity and customization of response plans	*Emergency Preparedness Plan, EP-01*	*Emergency Preparedness Plan*	*Existence of emergency plans based on region of service territory*	*January 2030*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

TBC maintains an Emergency Action Plan appropriate to the scale and scope of operations that comply with the California Public Utilities Code 768.6, Cal/OSHA - Title 8 Regulations, Chapter 4, Subchapter 7, Group 1, Article 2, §3220 Emergency Action Plans, and adheres to the practices specified in the National Fire Protection Association (NFPA) 850 Manual, Recommended Practices for Fire Protection for Electric

Generating Plants and High Voltage Direct Current converter stations. TBC has no defined "service area," no retail or distribution customers, significantly limiting the scope of disaster and emergency preparedness other than that of maintaining TBC's own infrastructure to meet obligations supporting the Bulk Electric System. This precludes the need for significant capability to conduct community outreach, or public awareness campaigns regarding TBC's emergency and disaster preparedness.

TBC's emergency preparedness planning and response is conducted in close coordination with CAISO and PG&E in addition to local emergency service providers appropriate to the limited scale and scope of TBC's operations. Relevant emergency operations procedures are routinely provided to CAISO and PG&E upon any update. Initial response and coordination to any emergency condition begins with the Trans Bay System Operator who has full authority and responsibility to act autonomously to coordinate and conduct an emergency shutdown of the Trans Bay System. TBC-OP-004 Emergency Operations and TBC-HS-200 Emergency Action plan provide clear guidance regarding required responses, communications, staff responsibilities, and key situational awareness capabilities to address the full range of foreseeable emergencies to include all those that could pose a fire risk. Given the foregoing, TBC has no current plans for changes to its emergency preparedness processes in the 2023-2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. Therefore Table 8- 32 and Table 8- 33 are marked "N/A" meaning "Not Applicable".

Table 8- 32. Emergency Preparedness Initiative Objectives (3-year plan)

Objectives for Three Years (2023–2025)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation and substantiation.

Table 8- 33. Emergency Preparedness Initiative Objectives (10-year plan)

Objectives for Ten Years (2026–2032)	Applicable Initiative(s), Tracking ID(s)	Applicable Regulations, Codes, Standards, and Best Practices (See Note)	Method of Verification (i.e., program)	Completion Date	Reference (section & page #)
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

8.4.1.2 Targets

Instructions: *Initiative targets are forward-looking quantifiable measurements of activities identified by each electrical corporation in its WMP. Electrical corporations will show progress toward completing targets in subsequent reports, including QDRs and WMP Updates.*

The electrical corporation must list all targets it will use to track progress on its emergency preparedness for the three years of the Base WMP. Energy Safety's Compliance Assurance Division and third parties must be able to track and audit each target.38 For each initiative target, the electrical corporation must provide the following:

- *Utility Initiative Tracking IDs.*
- *Projected targets for the three years of the Base WMP and relevant units.*
- *The expected "x% risk impact" for each of the three years of the Base WMP. The expected x% risk impact is the expected percentage risk reduction per year, as described in Section 7.2.2.2.*
- *Method of verifying target completion.*

The electrical corporation's targets must provide enough detail to effectively inform efforts to improve the performance (i.e., reduction in wildfire consequence) of the electrical corporation's emergency preparedness initiatives.

Table provides an example of the minimum acceptable level of information.

Table 8-35. Example of Emergency Preparedness Initiative Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
Conduct emergency drills	EP-03	4 emergency drills conducted	0.5%	4 drills	0.5%	4 drills	0.5%	After drill reports

In view of TBC's current limited footprint with one operational transmission asset, TBC has a small staff overseeing TBC operations, including dedicated on-site staff performing all operations work including restoration as well as a system operator that controls the asset 24/7 from the onsite NERC-certified control center. TBC's emergency preparedness planning and response is conducted in close coordination with CAISO and PG&E in addition to local emergency service providers appropriate to the limited scale and scope of TBC's operations. Relevant emergency operations procedures are routinely provided to CAISO and PG&E upon any update. Initial response and coordination to any emergency condition begins with the Trans Bay System Operator who has full authority and responsibility to act autonomously to

coordinate and conduct an emergency shutdown of the Trans Bay System. TBC-OP-004 Emergency Operations and TBC-HS-200 Emergency Action plan provide clear guidance regarding required responses, communications, staff responsibilities, and key situational awareness capabilities to address the full range of foreseeable emergencies to include all those that could pose a fire risk. TBC operations and engineering personnel are trained on all procedures relevant to emergency response, fire mitigation, and appropriate asset monitoring and protection protocols. These include specific procedures for Fire Prevention, Emergency Action, Emergency Operations, Fire System, and Asset Monitoring & protection. Given the foregoing, TBC has no current plans for changes to its emergency preparedness processes and therefore has no emergency preparedness initiative targets in the 2023-2025 WMP Cycle and beyond. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. As result Table 8- 34 is marked "N/A" meaning "Not Applicable".

Table 8- 34. Emergency Preparedness Initiative Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
N/A								

8.4.1.3 Performance Metrics identified by the Electrical Corporation

Instructions: *Performance metrics indicate the extent to which an electrical corporation's Wildfire Mitigation Plan is driving performance outcomes. Each electrical corporation must:*

- *List the performance metrics the electrical corporation uses to evaluate the effectiveness of its emergency preparedness in reducing wildfire and PSPS risk*[41]

For each of these performance metrics listed, the electrical corporation must:

- *Report the electrical corporation's performance since 2020 (if previously collected)*
- *Project performance for 2023-2025*
- *List method of verification*

The electrical corporation must ensure that each metric's name and values are the same in its WMP reporting as its QDR reporting (specifically, QDR Table 2 and QDR Table 3). Metrics listed in this section that are the same as performance metrics required by Energy Safety and reported in QDR Table 2 (Performance Metrics)[42] *must match those reported in QDR Table 2. Metrics listed in this section that*

[41] *There may be overlap between the performance metrics the electrical corporation uses and performance metrics required by Energy Safety. The electrical corporation must list these overlapping metrics in this section in addition to any unique performance metrics it uses.*

[42] *The performance metrics identified by Energy Safety are included in Energy Safety's Data Guidelines.*

are not the same as any of the performance metrics identified by Energy Safety and reported in QDR Table 2 must match those reported in QDR Table 3.

The electrical corporation must:

- *Summarize its self-identified performance metric(s) in tabular form*
- *Provide a brief narrative that explains trends in the metrics*

Table 8-36 provides an example of the minimum acceptable level of information.

Table 8-36. Example of Emergency Preparedness Performance Metrics Results by Year

Performance Metrics	*2020*	*2021*	*2022*	*2023 Projected*	*2024 Projected*	*2025 Projected*	*Method of Verification (e.g., third-party evaluation, QDR)*

TBC began commercial operations of the Trans Bay System in November 2010. Since the start of commercial operations, TBC has had no instigation of ignition by utility equipment and no incidents of utility-equipment caused fire. TBC projects the trend of zero (0) utility-equipment instigated ignitions to continue through the 2023-2025 WMP cycle and beyond given (i)the fire-harden grid design of the Trans Bay System, (ii) site improvements in the 2020-2022 WMP cycle, (iii) enhanced situational awareness capabilities, (iv) enhanced grid design, (v) limited scope of operations and (vi) no assets sited in a HFTD. The metrics cited below are the same as performance metrics required by Energy Safety and reported in QDR Table 2 and Table 3.

Table 8- 35. Emergency Preparedness Performance Metrics Results by Year

Performance Metrics	**2020**	**2021**	**2022**	**2023 Projected**	**2024 Projected**	**2025 Projected**	**Method of Verification (e.g., third-party evaluation, QDR)**
Vegetation-caused ignitions	0	0	0	0	0	0	QDR
Vegetation-caused outages	0	0	0	0	0	0	QDR

Open vegetation work orders	0	0	0	0	0	0	QDR
Number of reportable ignition incidents on RFW days	0	0	0	0	0	0	QDR
Value of assets destroyed by utility-related ignitions, listed by asset type	0	0	0	0	0	0	QDR
Structures damaged or destroyed by utility-related ignitions	0	0	0	0	0	0	QDR
Acreage burned by utility-related ignitions	0	0	0	0	0	0	QDR
Fatalities resulting from utility wildfire mitigation initiatives	0	0	0	0	0	0	QDR
Number of utility-related ignitions	0	0	0	0	0	0	QDR
OSHA-reportable injuries from utility wildfire mitigation initiatives	0	0	0	0	0	0	QDR

8.4.2 Emergency Preparedness Plan

Instructions: *In this section, the electrical corporation must provide an overview of how it has evaluated, developed, and integrated wildfire- and PSPS-specific emergency preparedness strategies, practices, policies, and procedures into its overall emergency plan based on the minimum standards described in GO 166. The electrical corporation must provide the title of its latest emergency preparedness report, the date of the report, and an indication of whether the plan complies with CPUC R. 15-06-009, D. 21-05-019, and GO 166. The overview must be no more than two paragraphs.*

In addition, the electrical corporation must provide a list of any other relevant electrical corporation documents that govern its wildfire and PSPS emergency preparedness planning for response and recovery efforts. This must be a bullet point list with document title, version (if applicable), and date. For example:

- *Electrical Corporation's Emergency Response Plan (ECERP), Third Edition, dated January 1, 2021*

Reference the Utility Initiative Tracking ID where appropriate.

Given the limited scope and scale of TBC's operations, and the fact that TBC does not have any assets in HFTDs, wildlands, or WUIs, TBC does not have emergency preparedness plans specifically for wildfire and PSPS situations. Instead TBC has general emergency plans which would be implemented in the event of any emergency, including a wildfire or PG&E-initiated PSPS event. TBC's emergency preparedness planning and response is conducted in close coordination with CAISO and PG&E in addition to local emergency service providers appropriate to the limited scale and scope of TBC's operations. Relevant emergency operations procedures are routinely provided to CAISO and PG&E upon any update.

Initial response and coordination to any emergency condition begins with the Trans Bay System Operator who has full authority and responsibility to act autonomously to coordinate and conduct an emergency shutdown of the Trans Bay System. TBC-OP-004 Emergency Operations and TBC-HS-200 Emergency Action plan provide clear guidance regarding required responses, communications, staff responsibilities, and key situational awareness capabilities to address the full range of foreseeable emergencies to include all those that could pose a fire risk.[43] The Trans Bay System is a transmission-only system that does not contain any distribution assets. The facility is also under the operational control of the CAISO and is maintained to CAISO maintenance standards. TBC cites to the following specific procedures:

- TBC-OP-004 Emergency Operations, Rev. 13.1, Effective July 1, 2021
- TBC-HS-200 Emergency Action Plan, Rev. 6, Effective December 2, 2020

[43] Both procedures are provided as confidential attachments to this WMP.

8.4.2.1 Overview of Wildfire and PSPS Emergency Preparedness

Instructions: *In this section of the WMP, the electrical corporation must provide an overview of its wildfire- and PSPS-specific emergency preparedness plan. At a minimum, the overview must describe the following:*

- *Purpose and scope of the plan.*
- *Overview of protocols, policies, and procedures for responding to and recovering from a wildfire or PSPS event (e.g., means and methods for assessing conditions, decision-making framework, prioritizations). This must include:*
  - *An operational flow diagram illustrating key components of its wildfire- and PSPS-specific emergency response procedures from the moment of activation to response, recovery, and restoration of service.*
  - *Separate overviews and operational flow diagrams for wildfires and PSPS events.*
- *Key personnel, qualifications, and training.*
- *Resource planning and allocation (e.g., staffing).*
- *Drills, simulations, and tabletop exercises.*
- *Coordination and collaboration with public safety partners (e.g., emergency planning, interoperable communications).*
- *Notification of and communication to customers during and after a wildfire or PSPS event.*
- *Improvements/updates made since the last WMP submission.*

The overview must be no more than six pages.

In addition, the electrical corporation must provide a table with a list of current gaps and limitations in evaluating, developing, and integrating wildfire- and PSPS-specific preparedness and planning features into its overall emergency preparedness plan(s). Where gaps or limitations exist, the electrical corporation must provide a remedial action plan and the timeline for resolving the gaps or limitations. Table 8-37 provides an example of the minimum level of content and detail required

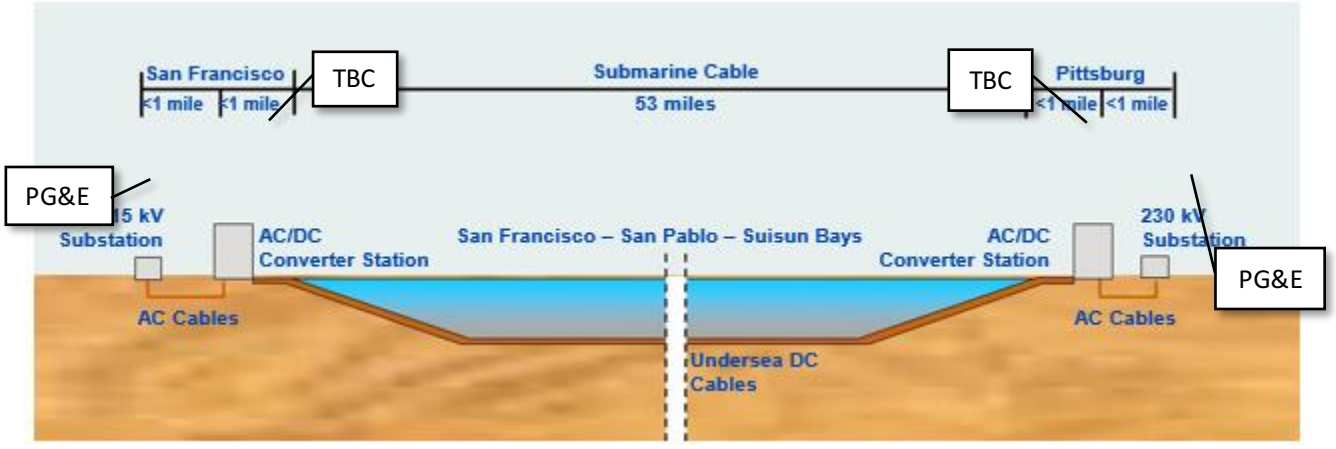
Table 8-37. Example of Key Gaps and Limitations in Integrating Wildfire- and PSPS-Specific Strategies into Emergency Plan

Gap or Limitation Subject	***Remedial Brief Description***	***Remedial Action Plan***
Limited feedback on wildfire-specific components of emergency plan	*Limited coordination with local-level public safety partners in the review and development of the wildfire-specific emergency preparedness plan*	***Strategy:*** *Establish a community advisory panel in collaboration with local government and non-governmental organizations.* • ***Target timeline:*** *Develop a process for establishing a community advisory panel, including policies and*

		procedures, by the end of 2023. Convene the advisory panel to review and provide feedback on the emergency preparedness plan for 50% of communities by end of 2024.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable, wholly sited in Non-HFTD areas. Given that TBC has no distribution system, no distribution or retail customers, and is already substantially hardened against wildfires, TBC reasonably anticipates no need to issue a PSPS. TBC's operational area is fully encompassed by PG&E's service territory with the TBC Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. The quantitative description of such a PSPS implementation for TBC is effectively binary, being either online or offline due to a PG&E issued PSPS whereby the Trans Bay System would not be energized and therefore poses minimal to no fire risk to the public.

Figure TBC 8.4.2- 1. Single Line Representation of the Trans Bay System



As shown in the Figure TBC 8.4.2- 1 above, the TBC system is encompassed within the PG&E 230 kV substation in Pittsburg and the PG&E 115kV substation in San Francisco (Potrero). Power flow is unidirectional from Pittsburg towards San Francisco. As such if power is shut off from the PG&E substation, no power can be transmitted across the Trans Bay System. Based on the assessment that (i)

PG&E would be the sole driver of PSPS impact in the limited TBC operational territory, (ii) the lack of any reasonably foreseeable need for TBC to issue a PSPS, and (iii) the fact that TBC has no assets in wildland or WUI or HFTDs, TBC does not maintain a specific wildfire or PSPS emergency preparedness plan.

However, as stated in Section 8.4.2 above, TBC's maintains a general emergency operations procedure and general emergency action plan which in combination provide guidance to employees on the necessary actions to take in an emergency scenario. TBC emergency action is conducted in close coordination with CAISO and PG&E, with as-needed support from local emergency service providers appropriate to the limited scale and scope of TBC's operations. Relevant emergency operations procedures are routinely provided to CAISO and PG&E upon any update.

TBC-OP-004 Emergency Operations (EOP) provides clear guidance to employees for operating the Trans Bay System in an emergency situation. The purpose of the EOP is to describe the TBC emergency plans that TBC Operating Personnel shall follow if there is a Bulk Electric System (BES) Emergency, TBC Facility Emergency, or a loss of Control Center Functionality. The scope of the EOP relates to emergency response and coordination with PG&E and the CAISO. The EOP identifies the roles and responsibilities of the onsite TBC Operator, the On-call Operator and Engineering team members.

At a high level, the EOP provides protocols for responding to two major types of events: a BES Emergency (EOP Section 5.1) and a Facility Emergency (EOP section 5.2), which has six potential event types. The 24/7 system operator monitors the Facility for any situation or condition that could disrupt normal operations or create any interruption to the bulk electric system. These situations or conditions include but are not limited to:

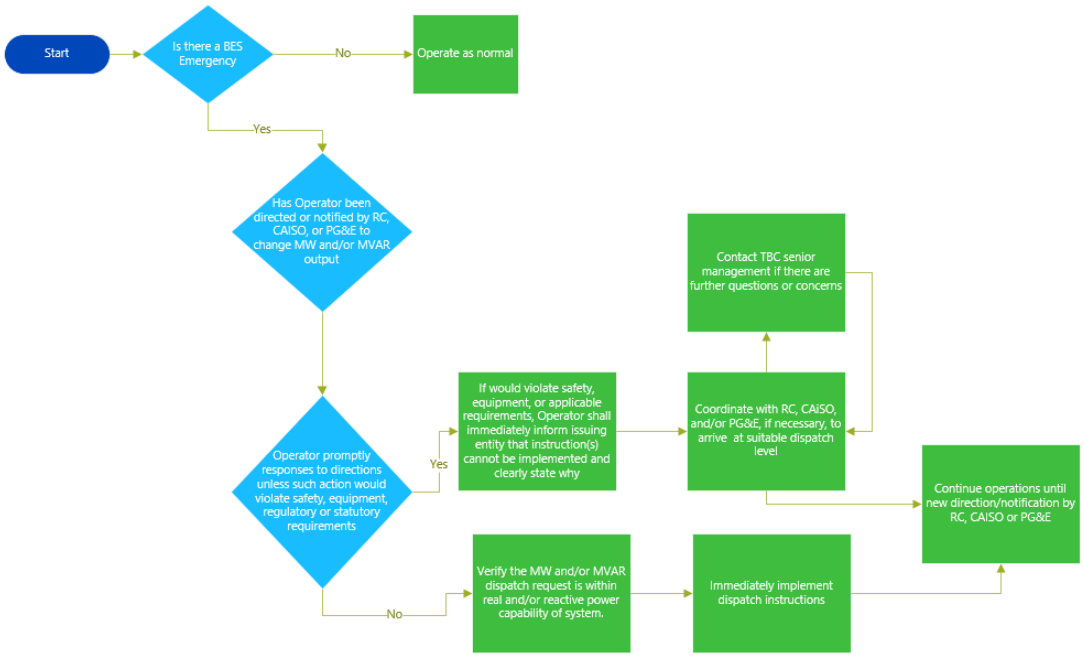
- Restricted Maintenance Operations
- Plans for Loss of Control Center
- Plans for Loss of Primary Backup Control Center
- Loss of Inter-Station Communications
- Loss of Telecommunications
- Loss of Interpersonal Communications
- Loss of Both Data exchange capabilities and Interpersonal Communication

Initial response and coordination to any emergency condition begins with the Trans Bay System Operator who has full authority and responsibility to act autonomously to coordinate and conduct an emergency shutdown of the Trans Bay System. EOP Section 4.1 requires the System Operator to "take immediate corrective actions to stop or mitigate the emergency, issue Operating Instructions, and if required, call for aid, take supplementary actions when able to do so,…[and to] use their experience during emergencies to mitigate possible loss of life or injury and damage to property or the surroundings".

Below is a basic diagram of TBC's response to a bulk electric system emergency event, which would include wildfire and PG&E-initiated PSPS event. TBC notes that with respect to maintenance operations,

in the event that a wildfire impacts TBC's operational area, the CAISO's restricted maintenance operations protocols are effective and may impact pre-scheduled outage work. See Section 5.1.1 in TBC-OP-004.

Figure TBC 8.4.2- 2. BES Emergency Operations Flow Chart



While TBC's EOP addresses emergency operation of the Trans Bay System, the purpose of TBC's Emergency Action Procedure (EAP) is to provide TBC employees and other personnel with a clear action plan if there is an emergency at either converter station site. The EAP covers emergency actions for all work areas and focuses on the protection of employees and others during emergencies. EAP Section 4.1 addresses the qualifications of the Emergency Response Team (ERT) compromised of a ER Coordinator, ERT Operations Lead, ERT Evacuation Lead, and ERT Team members. Each the duties of each role is delineated in the document. As in the EOP, in the EAP, the System Operator is tasked with performing necessary actions to mitigate any system disturbance that occurs. The nature of such disturbances is unpredictable, and the TBC Operator must use his or her best judgment when evaluating and responding to system emergencies. As such, Section 4.7.1 of the EAP includes emergency action procedures if immediate system shutdown is required.

After any system outage, including outage caused by wildfire or PG&E-initiated PSPS event, TBC would follow its standard Facility Startup and Shutdown Plan (FSS Plan) (TBC-OP-007) and/or System Restoration Plan (SR Plan) (TBC-OP-008) to restore service[44]. In most scenarios TBC would utilize its FSS

[44] Both procedures are provided as confidential attachments to this WMP.

Plan to restore service. The SR Plan would likely be triggered if there was a major system disturbance of the bulk electric system, e.g. system-wide blackout. See Section 8.4.5.1 for System Restoration.

Considering TBC's limited footprint with one transmission asset, TBC has a small staff of 8 personnel, who oversees its operations, including asset inspection and management, maintenance, system operation and initial emergency response. All TBC maintenance work, including asset inspections, is conducted by dedicated TBC operations personnel, that, by reason of training, experience, and instruction, are qualified to perform the task, with support from qualified contractors as needed. Operations personnel maintain and operate TBC's facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations. Operators are trained for emergency scenarios and authorized to take precautionary measures such as reduction in power flow or initiating system shutdown when presented with system warnings or instruction from the CAISO or requests from PG&E. Infrastructure assessment is conducted by TBC's operators and engineers who are charged with physically inspecting TBC's substation and all equipment thereon, inspecting underground cable vaults and assessing cable surveys. All TBC operations and engineering staff take proper care to ensure the safety of personnel and the public in performing maintenance, inspection, and repair duties.

As TBC does not maintain specific wildfire and PSPS plans due to its limited scope and scale of operations, it does not conduct specific wildfire and PSPS drills. TBC operations staff do participate in the CAISO's annual restoration drill, which simulates recovery of the CAISO managed transmission network after a significant system wide disruption.

Given that TBC does not have any retail customers is does not communication with the public but maintains communications and coordinates with the CAISO who has operational control of the Trans Bay System and PG&E who is the interconnecting utility in accordance with Section 4.3 of the FSS. For any fire incident that impacted TBC's Pittsburg Converter Station, TBC would contact and coordinate with the local Contra Costa Fire department.

Due to the limited scope and scale of operations, the footprint of the Trans Bay System, and the unlikelihood that TBC would ever issue a PSPS for the Pittsburg Converter Station and that TBC has not assets in wildlands or WUIs, TBC currently does not have an action to materially alter its preparedness plans. TBC will monitor the effectiveness of its currently emplaced processes, procedures, and capabilities and assess changes or enhancements as needed. As a result Table 8- 36 is marked "N/A" meaning "Not Applicable".

Table 8- 36. Key Gaps and Limitations in Integrating Wildfire- and PSPS-Specific into Emergency Plan

Gap or Limitation Subject	*Remedial Brief Description*	*Remedial Action Plan*

N/A		

8.4.2.2 Key Personnel, Qualifications, and Training

Instructions: *In this section, the electrical corporation must provide an overview of the key personnel constituting its emergency planning, preparedness, response, and recovery team(s) for wildfire and PSPS events. This includes identifying key roles and responsibilities, personnel resource planning (internal and external staffing needs), personnel qualifications, and required training programs.*

Personnel Qualifications

The electrical corporation must report on the various roles, responsibilities, and qualifications of electrical corporation and contract personnel tasked with wildfire emergency preparedness planning, preparedness, response, and recovery, and those tasked for PSPS-related events. This may include representatives from administration, information technology (IT), human resources, communications, electrical operations, facilities, and any other mission-critical units in the electrical corporation. As part of this section, the electrical corporation must provide a brief narrative describing its process for planning to meet its internal and external staffing needs for emergency preparedness planning, preparedness, response, and recovery related to wildfire and PSPS. The narrative must be no more than two to four pages.

Table 8-38 provides an example of the minimum level of content and detail required.

Table 8-38. Example of Emergency Preparedness Staffing and Qualifications

Role	***Incident Type***	***Responsibilities***	***Qualifications***	***No. of Dedicated Staff Required***	***No. of Dedicated Staff Provided***	***No. of Contract Workers Required***	***No. of Contract Workers Provided***
Program Director	*Wildfires*	*• Lead, oversee, and coordinate emergency preparedness department • Oversee all functions related to preventing, mitigating, responding to, and recovering from emergencies due to all relevant hazards for the electrical corporation*	*• Incident Command Certifications: ICS 100, 200, 300, 700, 800 • Master's in Disaster Risk Management • Minimum 15 years' experience in disaster risk management and/or emergency*	*1*	*1*	*NA*	*NA*

		• *Develop, maintain, and update the electrical corporation emergency preparedness plan with associated policies, practices, and procedures* • *Direct and manage emergency program managers and supervisors* • *Evaluate resources, equipment, and personnel available to respond to emergencies* • *Monitor program performance; recommend and implement modifications to systems and procedures* • *Develop and oversee the electrical corporation's emergency operations center; evaluate regular and emergency communication systems; make recommendations as appropriate*	*preparedness and planning*				
Grid Operations Manager	*Wildfires, PSPS*	• *Maintain facilities used during emergency operations*	*-*	*3*	*3*		
Public Information Officer	*Wildfires, PSPS*	• *Plan and host press conferences to announce major news or address crises*	• *Bachelor's degree in communications, public relations,*	*1*	*1*		

		• Prepare press releases, speeches, articles, social media posts, and other materials for public consumption • Develop strategies and procedures for working effectively with the media • Maintain good working relationships with media organizations • Collaborate with executive management and marketing team to ensure a cohesive public image • Work with various teams to organize and host public events and promotions • Speak directly to the public or media to address questions and represent the organization	journalism, or related field • Prior experience in a public relations role • Exceptional written and verbal communication skills • Strong understanding of the media, including social media • Organized and detail-oriented work ethic • Ability to travel on short notice • Great public speaking and interpersonal skills				
Utility Incident Commander	Wildfires, PSPS	• Leads emergency operations center • Serve as point of contact for all wildfire-related emergencies/disasters in conjunction with the Program Director • Command all emergency response functions at the field response level		1	1		
Public Safety	Wildfires, PSPS	• Develop relations with outside		3	3		

Partner Liaison		*organizations, including local, state, and federal fire suppression organizations, the state Office of Emergency Services, the county sheriff's department, the Red Cross, school districts, etc.; maintain close working relationships to ensure rapid and coherent response in emergency situations* *• Coordinate with relevant public safety partners in electrical corporation's service territory (e.g., fire, law enforcement, OES, CPUC, Energy Safety, Emergency Management Systems, public health departments, public works) to coordinate emergency preparedness, response and recovery plans, roles and responsibilities, etc.* *• Meet with public safety officials, private companies, and the general public to get recommendations regarding emergency response plans* *• Coordinate with local public safety partners to assess damage to communities*					

		• Coordinate getting assistance and supplies into impacted community *• Oversee and direct a variety of emergency-related community education programs, including disaster preparedness programs and AM radio classes*					
Trainer Officer	*Wildfires, PSPS*	*• Run training courses and disaster exercises for staff, volunteers, and local agencies to ensure an effective and coordinated response to an emergency*					

Personnel Training

The electrical corporation must report on its internal personnel training program(s) for wildfire and PSPS emergency events. This training must include, at a minimum, training on relevant policies, practices, and procedures before, during, and after a wildfire or PSPS event. The reporting must include, at a minimum:

- *The name of each training program*
- *A brief narrative on the purpose and scope of each program*
- *The type of training method*
- *The schedule and frequency of training programs*
- *The percentage of staff who have completed the most current training program*
- *How the electrical corporation tracks who has completed the training programs*

Table 8-39 provides an example of the minimum acceptable level of information.

External Contractor Training

The electrical corporation must report on its external contractor training program(s) for wildfire and PSPS emergency events. This training must include, at a minimum, training on relevant policies, practices, and procedures before, during, and after a wildfire or PSPS event. The reporting must include, at a minimum:

- *The name of each training program*
- *A brief narrative on the purpose and scope of each program*
- *The type of training method*
- *The schedule and frequency of training programs*
- *The percentage of contractors who have completed the most current training program*
- *How the electrical corporation tracks who has completed the training programs*

Table 8-39 provides an example of the minimum acceptable level of information.

Table 8-39. Example of Electrical Corporation Personnel Training Program

Training Topic	***Purpose and Scope***	***Training Method***	***Training Frequency***	***Position or Title of Personnel Required to Take Training***	***# Personnel Requiring Training***	***# Personnel Provided with Training***	***Form of Verification or Reference***
Introduction to the electrical corporation's emergency preparedness plan	*• The contents of emergency response plans, in particular those for wildfire- and PSPS-specific incidents* *• The electrical corporation's overall safety practices and those specific to wildfire and PSPS incidents* *• The organizational structure of how the electrical corporation responds to, manages, and*	*Online course, workshop, or in-person training*	*Annually*	*All staff*	*4,100*	*3,800*	*Training materials and training logs*

	recovers from incidents *• The electrical corporation's and public safety partners' roles and responsibilities before, during, and after a wildfire or PSPS incident* *• The electrical corporation's notification and activation protocols for wildfires and PSPS incidents*						
Threats, hazards, and protection actions							
Notification, warning, and communication procedures							
Emergency response procedures during a wildfire							
Emergency shutdown procedures							
Activating and deactivating mutual aid							

Practices, policies, and procedures for emergency response and service restoration for PSPS events							
Introduction to the electrical corporation's mutual aid agreement with aid partner	*• Familiarize aid partners with the concepts and actions in the mutual aid operations plan prior to implementation • Allow responding resources the opportunity to practice their procedures and responsibilities • Scope items include: o Contents of mutual aid operations plan, in particular those on wildfire- and PSPS-specific incidents o The electrical corporation's overall safety practices and those specific to wildfire and PSPS incidents o The organizational structure and*	*Online course, workshop, or in-person training*	*Annually*	*All potential mutual aid resources*	*150*	*135*	*Training materials and training logs*

	interoperability of how the mutual aid partners and resources collaborate and coordinate *o The electrical corporation's and public safety partners' roles and responsibilities before, during, and after a wildfire or PSPS incident* *o The electrical corporation's notification and activation protocols for wildfires and PSPS events*						

Table 8-40. Example of Contractor Training Program

Training Topic	***Purpose and Scope***	***Training Method***	***Training Frequency***	***Position or Title of Personnel Required to Take Training***	***# Contractors Requiring Training***	***# Contractors Completed Training***	***Form of Verification or Reference***
Introduction to the electrical corporation's mutual aid agreement with aid partner	*• Familiarize aid partners with the concepts and actions in the mutual aid operations plan prior to implementation*	*Online course, workshop, or in-person training*	*Annually*	*All potential mutual aid resources*	*150*	*135*	*Training materials and training logs*

	• *Allow responding resources the opportunity to practice their procedures and responsibilities* • *Scope items include:* ○ *Contents of mutual aid operations plan, in particular those on wildfire- and PSPS-specific incidents* ○ *The electrical corporation's overall safety practices and those specific to wildfire and PSPS incidents* ○ *The organizational structure and interoperability of how the mutual aid partners and resources collaborate and coordinate* ○ *The electrical corporation's and public safety partners' roles and responsibilities before, during, and after a*						

	wildfire or PSPS incident ○ *The electrical corporation's notification and activation protocols for wildfires and PSPS events*						

As noted in Section 8.4.2.1 above, due to TBC's limited scope and scale of operations, TBC does not maintain emergency preparedness plans specifically for wildfire and PSPS events. TBC anticipates that it will never be necessary to issue a PSPS. The Interconnecting Transmission Owner, PG&E, would be the main driver of a PSPS in the System's operational area. TBC, instead, has general emergency plans which would be implemented in the event of any emergency, including a wildfire or PG&E-initiated PSPS event. Considering TBC's limited footprint with one transmission asset, TBC has a small staff that oversees all aspects of its operations, including emergency response. As such it is the same staff that conducts regular operations and maintenance that responds to emergency events. All TBC operations and maintenance work, including asset inspections, is conducted by dedicated TBC operations personnel, that, by reason of training, experience, and instruction, are qualified to perform the task, with support from qualified contractors as needed. Operations personnel maintain and operate TBC's facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations. Operators are trained for emergency scenarios and authorized to take precautionary measures such as reduction in power flow or initiating system shutdown when presented with system warnings or instruction from the CAISO or requests from PG&E. Infrastructure assessment is conducted by TBC's operators and engineers who are charged with physically inspecting TBC's substation and all equipment thereon, inspecting underground cable vaults and assessing cable surveys. All TBC operations and engineering staff take proper care to ensure the safety of personnel and the public in performing maintenance, inspection, and repair duties. TBC emergency operations procedure (TBC-OP-004) identifies the roles and responsibilities of TBC's system operators and operations engineers in an emergency situation.

Table 8- 37. Emergency Preparedness Staffing and Qualifications

Role	Incident Type	Responsibilities	Qualifications	No. of Dedicated Staff Required	No. of Dedicated Staff Provided	No. of Contract Workers Required	No. of Contract Workers Provided
System Operator	Any off normal condition	On-site primary point of contact for any event affecting the Facility	NERC qualified system operator	1	5	NA	NA

On-call System Operator	Any off normal condition	Responsible for providing additional technical support to the On-site operator or staffing the back-up control center if required	NERC qualified system operator	1	5 (same staff members as above)	NA	NA
On-call Engineer	Any off normal condition	Responsible for providing additional technical/engineering support to the On-site operator and On-call Operator		1	1	NA	NA
Operations Manager	Any off normal condition	Oversees Operations team and has authority over the scope and content of the Facility's procedures	NERC qualified system operator	1	1	NA	NA
TBC Director Operations	Any off normal condition	Executive leadership and oversight of Facility operations		1	1	NA	NA

TBC actively maintains a procedure base that provides formal documentation detailing operational response and supporting information to circumstances that present a fire risk or could lead to equipment derangement that could pose the same risk. TBC operations and engineering personnel are trained on all procedures relevant to emergency response, fire mitigation, and appropriate asset monitoring and protection protocols upon onboarding. These include specific procedures for Fire Prevention, Emergency Action, Emergency Operations, Fire System, and Asset Monitoring & Protection. Due the limited size and scope of TBC's operations, and that it does not have any distribution assets or retail customers, or operations in a HFTD, TBC does not have an internal training program specifically in connection with wildfire or PSPS events. Therefore Table 8- 38 is marked "N/A" meaning "Not Applicable"

Table 8- 38. Electrical Corporation Personnel Training Program

Training Topic	Purpose and Scope	Training Method	Training Frequency	Position or Title of Personnel Required to Take Training	# Personnel Requiring Training	# Personnel Provided with Training	Form of Verification or Reference
N/A							

Due the limited size and scope of TBC's operations, and that it does not have any distribution assets or retail customers, or operations in a HFTD, TBC does not have a contractor training program specifically in connection with wildfire or PSPS events. Therefore Table 8- 39 is marked "N/A" meaning "Not Applicable".

Table 8- 39. Contractor Training Program

Training Topic	Purpose and Scope	Training Method	Training Frequency	Position or Title of Personnel Required to Take Training	# Contractors Requiring Training	# Contractors Completed Training	Form of Verification or Reference
N/A							

8.4.2.3 Drills, Simulations, and Tabletop Exercises

Instructions: *Discussion-based and operational-based exercises enhance knowledge of plans, allow personnel to improve their own performance, and identify opportunities to improve capabilities to respond to real wildfire emergency events and PSPS events. Exercises also provide a method to evaluate an electrical corporation's emergency preparedness plan and identify planning and/or procedural deficiencies.*

Internal Exercises

The electrical corporation must report on its program(s) for conducting internal discussion-based and operations-based exercises for both wildfire and PSPS emergency events. This must include, at a minimum:

- *The types of discussion-based exercises (e.g., seminars, workshops, tabletop exercises, games) and operations-based exercises (e.g., drills, functional exercises, full-scale exercises)*
- *The purpose of the exercises*
- *The schedule and frequency of exercise programs*
- *The percentage of staff who have completed/participated in exercises*
- *How the electrical corporation tracks who has completed the exercises*

Table 8-41 provides an example of the minimum acceptable level of information.

External Exercises

The electrical corporation must report on its program(s) for conducting external discussion-based and operations-based exercises for both wildfire and PSPS emergency events. This must include, at a minimum:

- *The types of discussion-based exercises (e.g., seminars, workshops, tabletop exercises, games) and operations-based exercises (e.g., drills, functional exercises, full-scale exercises)*
- *The schedule and frequency of exercise programs*
- *The percentage of public safety partners who have participated in these exercises*
- *How the electrical corporation tracks who has completed the exercises*

Table 8-41 provides an example of the minimum acceptable level of information.

Table 8-41. Example of Internal Drill, Simulation, and Tabletop Exercise Program

Category	***Exercise Title and Type***	***Purpose***	***Exercise Frequency***	***Position of Title of Personnel Required to Participate***	***Personnel Required***	***Personnel Completed***	***Form of Verification or Reference***
Discussion-based	*PSPS event tabletop exercise*	*• Provide electrical corporation a way to determine its readiness to respond to a PSPS event* *• Clarify gaps or problems with existing policies and plans* *• Help administration and staff understand their roles during a PSPS event.* *• Serve as a training tool* *• Help identify needs for other resources* *• Serve as a tool for modifying and improving existing PSPS plans based on*	*Annually*	*• Program Director of Emergency Planning* *• Grid Operations Program Manager and supervisors* *• Emergency Operations Center Supervisor* *• Public Information Officer*	*10*	*10*	*Exercise scoping materials and completion logs*

		the lessons learned during the exercise					
Operations-based	*Wildfire emergency drill*		*Annually (before September 1)*	*• Program Director of Emergency Planning • Grid Operations Program Manager and supervisors • Emergency Operations Center Supervisor and staff • Public Information Officer • Electrical corporation fire chief*	*20*	*19*	*Exercise scoping materials and completion logs*

Table 8-42. Example of External Drill, Simulation, and Tabletop Exercise Program

Category	***Exercise Title and Type***	***Purpose***	***Exercise Frequency***	***Position of Title of Personnel Required to Participate***	***Personnel Required***	***Personnel Completed***	***Form of Verification or Reference***
Discussion-based	*PSPS event tabletop exercise*	*• Provide electrical corporation and public safety partners a way to determine their readiness to respond and recover from a PSPS event*	*Annually*	*• Program Director of Emergency Planning • Grid Operations Program Manager and supervisors*	*20*	*18*	*Exercise scoping materials and completion logs*

		• *Clarify gaps or problems with existing MAAs and MOAs, policies, and plans* • *Help electrical corporation and public safety partners understand their roles during a PSPS event* • *Serve as a training tool* • *Help identify needs for other resources* • *Serve as a tool for modifying and improving existing PSPS coordination and emergency response plans based on the lessons learned during the exercise*		• *Emergency Operations Center Supervisor* • *Fire chief(s) or liaison* • *Police, sheriff, and CHP chief(s) or liaisons* • *County Health liaison* • *American Red Cross liaison* • *Emergency Operations Supervisor(s) for relevant city/county jurisdictions*			
Operations-based	*Wildfire emergency drill*		*Annually (before September 1)*	• *Program Director of Emergency Planning* • *Grid Operations Program Manager and supervisors* • *Emergency Operations Center Supervisor*	*20*	*19*	*Exercise scoping materials and completion logs*

				• *Electrical corporation fire chief and fire marshal* • *Fire chief(s) or liaison* • *Police, sheriff, and CHP chiefs or liaisons*			

In view of TBC's current limited footprint with one operational transmission asset and no assets in a HFTD, TBC only conducts an internal fire drill.

Table 8- 40. Internal Drill, Simulation, and Tabletop Exercise Program

Category	Exercise Title and Type	Purpose	Exercise Frequency	Position of Title of Personnel Required to Participate	Personnel Required	Personnel Completed	Form of Verification or Reference
Operations-based	Fire emergency drill	Maintain staff familiarity with processes and procedures in response to a wildfire event[45]	Annually	• Systems Operators • Operations Manager	7	7	Completion log and pictorial evidence

As a result of TBC's limited footprint TBC does not conduct external fire drills. Therefore Table 8- 41 is marked "N/A" meaning "Not Applicable"

Table 8- 41. External Drill, Simulation, and Tabletop Exercise Program

Category	Exercise Title and Type	Purpose	Exercise Frequency	Position of Title of Personnel Required to Participate	Personnel Required	Personnel Completed	Form of Verification or Reference
N/A							

[45] Non-operations employees participate in the annual fire emergency drill for situational awareness and employee safety purposes but do not have an active role in system shutdown in event of emergency.

8.4.2.4 Schedule for Updating and Revising Plan

Instructions: *The electrical corporation must provide a log of the updates to its emergency preparedness plan since 2019 and the date of its next planned update.*

Updates should occur every two years, per R. 15-06-009 and D. 21-05-019. For each update, the electrical corporation must provide the following:

- *Year of updated plan*
- *Revision type (e.g., addition, modification, elimination)*
- *Component modified (e.g., communications, training, drills/exercises, protocols/ procedures, MOAs)*
- *A brief description of the lesson learned that informed the revision*
- *A brief description of the specific addition, modification, or elimination*

Table 8-43 provides an example of the minimum acceptable level of information.

Table 8-43. Example of Wildfire-Specific Updates to the Emergency Preparedness Plan

ID #	Year of Updated Plan	Revision Type	Lesson Learned	Revision Description	Reference Section
1	2022	Addition	Statutory change due to CPUC R. 15-06-009, D. 21-05-019	Updated plan to comply with California Standardized Emergency Management Systems (SEMS) per GO 166	Sections 3–8, pp. xx–yy
2	2022	Modification	In a public survey administered after the three-day PSPS on MM/DD/YYYY, numerous customers complained of not being able to visually	An additional data layer was added to the interactive PSPS customer interface portal. At least three days in advance of a planned event, this identifies the exact date	Section X, p. 15

			understand which neighborhoods were going to be impacted and when the power was planned to be out and then restored. The electrical corporation website only provided tabulated information.	*and time of the planned PSPS, the estimated time of planned power restoration, and specific neighborhoods that will be impacted.*	

TBC's only operation asset, the Trans Bay System, entered operations in Q3 2010. The nature of the operations of the Trans Bay System has not materially changed since the start of commercial operations. Based on TBC's limited footprint, scope of operations, and completed initiatives in the 2020-2022 WMP cycle, and having no assets in a HFTD, TBC does not have any plans to materially alter its Emergency Operations in the 2023-2025 WMP Cycle. As a result Table 8- 42 is marked "N/A" meaning "Not Applicable".

Table 8- 42. Wildfire-Specific Updates to the Emergency Preparedness Plan

ID #	Year of Updated Plan	Revision Type	Lesson Learned	Revision Description	Reference Section
N/A					

8.4.3 External Collaboration and Coordination

8.4.3.1 Emergency Planning

Instructions: *In this section, the electrical corporation must provide a high-level description of its wildfire and PSPS emergency preparedness coordination with relevant public safety partners at state, county, city, and tribal levels within its service territory. The electrical corporation must indicate if its coordination efforts follow California's SEMS or, where relevant for multi-jurisdictional electrical corporations (e.g., PacifiCorp), the Federal Emergency Management Agency (FEMA) National Incident Management Systems (NIMS), as permitted by GO 166. The description must be no more than a page.*

In addition, the electrical corporation must provide the following information in tabular form, with no more than one page of information in the main body of the WMP and a full table, if needed, in an appendix:

- *List of relevant state, city, county, and tribal agencies within the electrical corporation's service territory and key point(s) of contact, with associated contact information. Where necessary, contact information can be redacted for the public version of the WMP.*
- *For each agency, whether the agency has provided consultation and/or verbal or written comments in preparation of the most current wildfire- and PSPS-specific emergency preparedness plan. If so, the electrical corporation should provide the date, time, and location of the meeting at which the agency's feedback was received.*
- *For each agency, whether it has an MOA with the electrical corporation on wildfire and/or PSPS emergency preparedness, response, and recovery activities. The electrical corporation must provide a brief summary of the MOA, including the agreed role(s) and responsibilities of the external agency before, during, and after a wildfire or PSPS emergency.*
- *In a separate table, a list of current gaps and limitations in the electrical corporation's existing collaboration efforts with relevant state, county, city, and tribal agencies within its territory. Where gaps or limitations exist, the electrical corporation must indicate the remedial action plan and the timeline for resolving the gaps or limitations.*
- *For all requested information, a form of verification that can be provided upon request for compliance assurance.*

The electrical corporation must reference the Utility Initiative Tracking ID where appropriate.

Table 8-44 and Table 8-45 provide examples of the minimum level of content and detail required.

Table 8-44. Example of State and Local Agency Collaboration(s)

Name of State or Local Agency	***Point of Contact and Information***	***Emergency Preparedness Plan Collaboration – Last Version of Plan Agency Collaborated***	***Emergency Preparedness Plan Collaboration – Collaborative Role***	***Memorandum of Agreement (MOA)?***	***Brief Description of MOA***
Local Municipal Fire Department	*John Doe, Fire Marshal John.Doe@city.gov*	*2022 Version (06/2021)*	*Attended a virtual meeting on 02/02/2022 at 1 pm PDT*	*Yes*	*Wildfire incidents:* *• Before* *• During* *• After*

			Provided written comments		*PSPS events:* • *Before* • *During* • *After*

Table 8-45. Example of Key Gaps and Limitations in Collaboration Activities with State and Local Agencies

Gap or Limitation Subject	***Remedial Brief Description***	***Remedial Action Plan***
Limited feedback on wildfire and PSPS emergency plan	*Less than 10% of the state and local government stakeholders have been able to provide feedback and collaborate on review, development, and/or improvement of the emergency preparedness plan.*	***Strategy:*** *Convene a 1.5-day workshop with relevant state and local agencies to review the key elements of the electrical corporation's wildfire- and PSPS-specific emergency preparedness plan. Solicit verbal and written comments from the stakeholders. Assign a government liaison to conduct follow-up meetings to obtain and discuss any comments, proposed modifications, additions, etc.* ***Target timeline****: Develop workshop scoping plan by June 2023 and convene workshop by end of 2023. Aim to host workshops with 50% of government stakeholders by end of 2025.*

Given the limited scope and scale of TBC's operations, and the fact that TBC does not have any assets in HFTDs, wildlands, or WUIs, TBC does not have emergency preparedness plans specifically for wildfire and PSPS situations. Instead TBC has general emergency plans which would be implemented in the event of any emergency, including a wildfire or PG&E-initiated PSPS event. TBC's emergency preparedness planning and response is conducted in close coordination with CAISO and PG&E in addition to local emergency service providers appropriate to the limited scale and scope of TBC's operations. Based on the limited scale of TBC's operations and the lack of retail/direct customers, TBC's emergency plans do not follow California's Standardized Emergency Management Systems. However, TBC maintains that its Emergency Action and Emergency Operations procedures are sufficient for the limited size and scope of its operations.

TBC does not serve end-use customers, have a traditional service territory or a distribution system. Given that TBC has no distribution system, no distribution or retail customers, and is already substantially

hardened against wildfires, TBC reasonably anticipates no future need to issue a PSPS. TBC's operational territory is fully encompassed by PG&E service territory with TBC's Pittsburg converter station, the facility presenting the greatest risk to proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg 230kv Substation (PG&E Substation) which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. As result, TBC does not engage the public and further does not anticipate engaging with the public regarding PSPS. The Trans Bay System is also under the operational control of the CAISO, as TBC transmits energy over its line per CAISO dispatch orders. Based on the nature of its operations, TBC does have a protocol for engaging with critical stakeholders (e.g., CAISO, PG&E, local fire agencies, etc.) regarding any potential emergency event, which would include wildfire or PG&E-initiated PSPS event, as detailed in TBC's Emergency Operations Plan and Emergency Action Plan. Critical stakeholders are identified below in Table 8- 43. TBC notes that certain contact information is being provided confidentially.

Table 8- 43. State and Local Agency Collaboration(s)

Name of State or Local Agency	Point of Contact and Information	Emergency Preparedness Plan Collaboration – Last Version of Plan Agency Collaborated	Emergency Preparedness Plan Collaboration – Collaborative Role	Memorandum of Agreement (MOA)?	Brief Description of MOA
CAISO – Emergency Response Coordinator (ERC) – Event Reporting	erc@caiso.com	N/A	N/A	No	N/A
CAISO - Real Time Desk	Confidential	N/A	N/A	No	N/A
PG&E Transmission Vacaville Grid Control Center (GCC) Real-Time	Confidential	N/A	N/A	No	N/A
PG&E Outage Coordination	Confidential	N/A	N/A	No	N/A

Contra Costa Fire Department	(925) 941-3300 (Non-emergency) 911 (Emergency)	N/A	N/A	No	N/A

Given the limited scale of TBC's operations, TBC maintains that its Emergency Action and Emergency Operations procedures are sufficient for the limited size and scope of its operations. Based on the foregoing, Table 8- 44 is marked "N/A" meaning "Not Applicable".

Table 8- 44. Key Gaps and Limitations in Collaboration Activities with State and Local Agencies

Gap or Limitation Subject	Remedial Brief Description	Remedial Action Plan
N/A		

8.4.3.2 Communication and Strategy with Public Partners

Instructions: *The electrical corporation must describe at a high level its communication strategy to inform external public safety partners and other interconnected electrical corporation partners of wildfire, PSPS, and re-energization events as required by GO 166 and Public Utilities Code section 768.6. This must include a brief description of the policies, practices, and procedures the electrical corporation adopts to establish appropriate communication protocols with public safety partners for both wildfire- and PSPS-specific incidents to ensure timely, accurate, and complete communications. The electrical corporation must refer to its emergency preparedness plan as needed to provide more detail. The narrative must be no more than two pages.*

As each public safety partner will have its own unique communication protocols, procedures, and systems, the electrical corporation must coordinate with each entity individually. The electrical corporation must summarize the following information in tabulated format:

- *All relevant public safety partner groups (e.g., fire, law enforcement, OES, municipal governments, Energy Safety, CPUC, other electrical corporations) at every level of administration (state, county, city, or tribe) as needed.*
- *The names of individual public safety entities.*
- *For each entity, the point of contact for emergency communications coordination, and the contact information. Information may be redacted as needed.*
- *Key protocols for ensuring the necessary level of voice and data communications (e.g., interoperability channels, methods for information exchange, format for each data typology, communication capabilities, data management systems, backup systems, common alerting protocols, messaging), and associated references in the emergency plan for more details.*
- *Frequency of prearranged communication review and updates.*
- *Date of last discussion-based or operations-based exercise(s) on public safety partner communication.*

In a separate table, the electrical corporation must list the current gaps and limitations in its public safety partner communication strategy coordination. Where gaps or limitations exist, the electrical corporation must indicate the remedial action plan and the timeline for resolving the gaps or limitations. For all requested information, the electrical corporation must indicate a form of verification that can be provided upon request for compliance assurance.

Table 8-46 and Table 8-47 provide examples of the minimum level of content and detail required.

Table 8-46. Example of High-Level Communication Protocols, Procedures, and Systems with Public Safety Partners

Public Safety Partner Group	***Name of Entity***	***Point of Contact and Information***	***Key Protocols***	***Frequency of Prearranged Communication Review and Update***	***Communication Exercise(s): Date of Last Completed***	***Communication Exercise(s): Date of Planned Next***
Fire	*Local County Fire Department*	*Jane Smith, Unit Manager Jane.Smith@county.org*	*• Communication capabilities (e.g., staffing, resources, technologies)* *• Methods for information exchange* *• Format for each data typology* *• Data management strategy* *• Backup systems* *• Common alerting protocols* *• Messaging* *• Refer to Sections x, y, and z in electrical corporation's Emergency Preparedness Plan and to the MOA entitled "xxxxx," dated MM/DD/YYYY.*	*Annually (April)*	*Tabletop exercise, 04/02/2022 at 1 pm PDT*	*Workshop, 04/02/2023 at 2 pm PDT*

Table 8-47. Example of Key Gaps and Limitations in Communication Coordination with Public Safety Partners

Gap or Limitation Subject	***Remedial Brief Description***	***Remedial Action Plan***
Limited feedback on wildfire and PSPS emergency plan	*Less than 10% of the state and local government stakeholders have been able to provide feedback and collaborate on review, development, and/or improvement of the emergency preparedness plan.*	***Strategy:*** *Convene a 1.5-day workshop with relevant state and local agencies to review the key elements of the electrical corporation's wildfire- and PSPS-specific emergency preparedness plan. Solicit verbal and written comments from the stakeholders. Assign a government liaison to conduct follow-up meetings to obtain and discuss any comments, proposed modifications, additions, etc.* ***Target timeline****: Develop workshop scoping plan by June 2023 and convene workshop by end of 2023. Aim to host workshops with 50% of government stakeholders by end of 2025.*
Uncertainty of emergency communications being received by government agencies	*More than 50% of the partner government agencies have independent and different communication systems and associated protocols. Consistency and timing of notification and receipt notification is not standardized.*	***Strategy:*** *Create an integrated, multi-channel communication system that provides for immediate notification of an event through text, email, or broadcast with secondary communication to confirm receipt. Assess current notification systems and communications protocols at the electrical corporation's monitoring center and create priority communication*

		matrices that support the most resilient channels for sending emergency alert messages. Create a survey to be sent to all responding stakeholders to collect information on their communications capabilities and preferences. Align the electrical corporation's capabilities with each responding stakeholder and then create operating standards for dispatchers and responders to follow. ***Target timeline**: Complete assessment of current systems and protocols by end of first quarter 2023. Create survey to be sent to all responding stakeholders by end of second quarter 2023. Complete alignment and testing by end of first quarter 2024.*

TBC does not serve end-use customers, have a traditional service territory or a distribution system. TBC's operational territory is fully encompassed by PG&E service territory with TBC's Pittsburg converter station, the TBC facility presenting the greatest risk to proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Therefore, TBC reasonably anticipates no need to issue a PSPS. TBC does not engage the public and further does not anticipate engaging with the public regarding PSPS. Regarding energization, the Trans Bay System is under the operational control of the CAISO and is interconnected with PG&E's Pittsburg and Potrero Substations. As such TBC does have protocols for engaging with the CAISO and PG&E for any reenergization event or potential emergency event which follow CAISO, PG&E and NERC COMM standards for communicating with neighboring entities. As discussed in Section 8.4.2 and 8.4.2.1, TBC's Emergency Operations Plan and Emergency Action Plan detail communication protocols for emergency events. In event of fire, given that all TBC above ground assets reside within its station walls, and the Pittsburg facility is within 10 minutes driving distance from two county fire stations, TBC would contact the local Contra Costa fire department for support services. Table 8- 45 is completed based on the aforementioned information. Fields marked as

"N/A" mean "Not Available" because TBC does not participate in specific wildfire and/or PSPS communication exercises.

Table 8- 45. High-Level Communication Protocols, Procedures, and Systems with Public Safety Partners

Public Safety Partner Group	Name of Entity	Point of Contact and Information	Key Protocols	Frequency of Prearranged Communication Review and Update	Communication Exercise(s): Date of Last Completed	Communication Exercise(s): Date of Planned Next
Event Reporting	CAISO – Emergency Response Coordinator (ERC) – Event Reporting	erc@caiso.com	• CAISO communication protocols • NERC communication standards	N/A	N/A	N/A
Energy Dispatch	CAISO - Real Time Desk	Confidential	• CAISO communication protocols • NERC communication standards	N/A	N/A	N/A
Notification of PSPS issuance	PG&E Transmission Vacaville Grid Control Center (GCC) Real-Time	Confidential	• CAISO communication protocols • NERC communication standards • PG&E O-67 TBC Operating Protocol, "Notification of Significant Events" Section	N/A	N/A	N/A

Outage Coordination	PG&E Outage Coordination	Confidential	• CAISO communication protocols • NERC communication standards • PG&E O-67 TBC Operating Protocol, "Notification of Significant Events" Section	N/A	N/A	N/A
Fire	Contra Costa Fire Department	(925) 941-3300 (Non-emergency) 911 (Emergency)	N/A	N/A	N/A	N/A

Given the limited scale of TBC's operations, TBC maintains that its Emergency Action and Emergency Operations procedures are sufficient for the limited size and scope of its operations. Based on the foregoing, Table 8- 46 is marked "N/A" meaning "Not Applicable".

Table 8- 46. Key Gaps and Limitations in Communication Coordination

Gap or Limitation Subject	Remedial Brief Description	Remedial Action Plan
N/A		

8.4.3.3 Mutual Aid Agreements

Instructions: *In this section, the electrical corporation must provide a brief overview of the Mutual Aid Agreements (MAA) it has entered into regarding wildfire emergencies and/or disasters, as well as PSPS events. The overview narrative must be no more than one page.*
In addition, the electrical corporation must provide the following wildfire emergency information in tabulated format:

- *List of entities with which the electrical corporation has entered into an MAA*
- *Scope of the MAA*
- *Resources available from the MAA partner*

Table 8-48 provides an example of the minimum level of content and detail required.

Table 8-48. Example of High-Level Mutual Aid Agreement for Resources During a Wildfire or De-Energization Incident

Mutual Aid Partner	*Scope of Mutual Aid Agreement*	*Available Resources from Mutual Aid Partner*

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable, wholly sited outside of any HFTDs. Based on the limited footprint and scope of TBC's operations, TBC does not have any mutual aid agreements for resources during a wildfire or de-energization incident. Instead TBC relies on its operations and engineering staff, vendors who are contracted to provided maintenance/outage support and allowed enterprise-level corporate resources and support services through an affiliate support services agreement(s). As a result Table 8-47 is marked "N/A" meaning "Not Applicable".

Table 8- 47. High-Level Mutual Aid Agreement for Resources During a Wildfire or De-Energization Incident

Mutual Aid Partner	Scope of Mutual Aid Agreement	Available Resources from Mutual Aid Partner
N/A		

8.4.4 Public Emergency Communication Strategy

Instructions: *The electrical corporation must describe at a high level its comprehensive communication strategy to inform essential customers and other stakeholder groups of wildfires, outages due to wildfires, and PSPS and service restoration, as required by Public Utilities Code section 768.6. This should include a discussion of the policies, practices, and procedures the electrical corporation adopts to establish appropriate communication protocols to ensure timely, accurate, and complete communications. The electrical corporation may refer to its Public Utilities Code section 768.6 emergency preparedness plan to provide more detail. The narrative must be no more than one page.*

In the following sections, the electrical corporation must provide an overview of the following components of an effective and comprehensive communication strategy:

- *Protocols for emergency communications*
- *Messaging*
- *Current gaps and limitations*

Reference the Utility Initiative Tracking ID where appropriate.

TBC does not serve end-use customers, have a traditional service territory or a distribution system. TBC's operations area is fully encompassed by PG&E service territory with TBC's Pittsburg converter station, the TBC facility presenting the greatest risk to proximate vegetative fuels, interconnected to the nearby

PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operations area. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. However, TBC has developed a protocol for communication and coordination with its primary stakeholders, including the CAISO and Interconnecting Transmission Owner, local fire agencies, etc. TBC's President or designee would be the lead in implementing this communications protocol during an emergency. TBC also maintains its WMP filings and related information on its website which is publicly available at the following link: https://www.transbaycable.com/wildfire-safety.html.

8.4.4.1 Protocols for Emergency Communications

Instructions: *The electrical corporation must identify the relevant stakeholder groups in its service territory and describe the protocols, practices, and procedures used to provide notification of wildfires, outages due to wildfires and PSPS, and service restoration before, during, and after each incident type. Stakeholder groups include, but are not limited to, the general public, priority essential services, AFN populations, populations with limited English proficiency, tribes, and people in remote areas. The narrative must include a brief discussion of the decision-making process and use of best practices to ensure timely, accurate, and complete communications. The narrative must be no more than one page.*

The electrical corporation must also provide, in tabular form, details of the following:

- *Communication methods*
- *Message receipt verification mechanisms*

Table 8-49 provides an example of the minimum level of content and detail required.

Table 8-49. Example of Protocols for Emergency Communication to Stakeholder Groups

Stakeholder Group	***Event Type***	***Method(s) for Communicating***	***Means to Verify Message Receipt***
General public	*Wildfire*		
General public	*Wildfire-related outage*		
General public	*PSPS-related outage*		
General public	*Restoration of service*		
Priority essential services	*Wildfire*		

Priority essential services	*Wildfire-related outage*		
Priority essential services	*PSPS-related outage*		
Priority essential services	*Restoration of service*		
AFN populations			
Populations with limited English proficiency			
Tribes			
People in remote areas			

See TBC's response to Section 8.4.4. TBC does not serve end-use customers, have a traditional service territory or a distribution system. Additionally, based on the limited scale and scope of the Trans Bay System, TBC believes that it will never be necessary to issue a PSPS. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. However, TBC has developed a protocol for communication and coordination with its primary stakeholders, including the CAISO and Interconnecting Transmission Owner, local fire agencies, etc. TBC's President or designee would be the lead in implementing this communications protocol during an emergency.

Table 8- 48. Protocols for Emergency Communication to Stakeholder Groups

Stakeholder Group	Event Type	Method(s) for Communicating	Means to Verify Message Receipt
Priority essential services	Wildfire	Telephone Email	Realtime response Reply message
Priority essential services	Wildfire-related outage	Telephone Email	Realtime response Reply message
Priority essential services	PSPS-related outage	Telephone Email	Realtime response Reply message

Priority essential services	Restoration of service	Telephone Email	Realtime response Reply message
Interconnecting Utility	Wildfire	Telephone Email	Realtime response Reply message
Interconnecting Utility	Wildfire-related outage	Telephone Email	Realtime response Reply message
Interconnecting Utility	PSPS-related outage	Telephone Email	Realtime response Reply message
Interconnecting Utility	Restoration of service	Telephone Email	Realtime response Reply message
CAISO	Wildfire	Telephone Email	Realtime response Reply message
CAISO	Wildfire-related outage	Telephone Email	Realtime response Reply message
CAISO	PSPS-related outage	Telephone Email	Realtime response Reply message
CAISO	Restoration of service	Telephone Email	Realtime response Reply message

8.4.4.2 Messaging

Instructions: *In this section, the electrical corporation must describe its procedures for developing effective messaging to reach the largest percentage of stakeholders in its service territory before, during, and after a wildfire, an outage due to wildfire, or a PSPS event.*
In addition, the electrical corporation must provide an overview of the development of the following aspects of its communication messaging strategy:

- *Features to maximize accessibility of the messaging (e.g., font size, color contrast analyzer)*
- *Alert and notification schedules*
- *Translation of notifications*
- *Messaging tone and language*

- *Key components and order of messaging content (e.g., hazard, location, time)*

The narrative must be no more than one page.

See TBC's response to Section 8.4.4. TBC does not serve end-use customers, have a traditional service territory or a distribution system. Additionally, based on the limited scale and scope of the Trans Bay System, TBC believes that it will never be necessary to issue a PSPS. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency.

8.4.4.3 Current Gaps and Limitations

Instructions: *In tabulated format, the electrical corporation must provide a list of current gaps and limitations in its public communication strategy. Where gaps or limitations exist, the electrical corporation must indicate the remedial action plan and the timeline for resolving the gaps or limitations. For all requested information, the electrical corporation should indicate a form of verification that can be provided upon request for compliance assurance. Table 8-50 provides an example of the minimum level of content and detail required.*

Table 8-50. Example of Key Gaps and Limitations in Public Emergency Communication Strategy

Gap or Limitation Subject	***Remedial Brief Description***	***Remedial Action Plan***
Limited feedback on wildfire and PSPS emergency plan	*Less than 10% of the state and local government stakeholders have been able to provide feedback and collaborate on review, development, and/or improvement of the emergency preparedness plan.*	***Strategy:*** *Convene a 1.5-day workshop with relevant state and local agencies to review the key elements of the electrical corporation's wildfire- and PSPS-specific emergency preparedness plan. Solicit verbal and written comments from the stakeholders. Assign a government liaison to conduct follow-up meetings to obtain and discuss any comments, proposed modifications, additions, etc.* ***Target timeline****: Develop workshop scoping plan by June 2023 and convene workshop by end of 2023. Aim to host workshops with 50% of government stakeholders by end of 2025.*

See TBC's response to Section 8.4.4. TBC does not serve end-use customers, have a traditional service territory or a distribution system. Additionally, based on the limited scale and scope of the Trans Bay System, TBC believes that it will never be necessary to issue a PSPS. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. As a result Table 8- 49 is marked "N/A" meaning "Not Applicable".

Table 8- 49. Key Gaps and Limitations in Public Emergency Communication Strategy

Gap or Limitation Subject	Remedial Brief Description	Remedial Action Plan
N/A		

8.4.5 Preparedness and Planning for Service Restoration

8.4.5.1 Overview of Service Restoration

Instructions: *In this section of the WMP, the electrical corporation must provide an overview of its plan to restore service after an outage due to a wildfire or PSPS event. At a minimum, the overview must include a brief description of the following:*

- *Purpose and scope of the restoration plan.*
- *Overview of protocols, policies, and procedures for service restoration (e.g., means and methods for assessing conditions, decision-making framework, prioritizations, degree of customization). This must include:*
  - *An operational flow diagram illustrating key components of the service restoration procedures from the moment of the incident to response, recovery, and restoration of service.*
- *Resource planning and allocation (e.g., staffing, equipment).*
- *Drills, simulations, and tabletop exercises.*
- *Coordination and collaboration with public safety partners (e.g., interoperable communications).*
- *Notification of and communication to customers during and after a wildfire- or PSPS-related outage.*

The electrical corporation may refer to its Public Utilities Code section 768.6 emergency preparedness plan to provide more detail. Where the electrical corporation has already reported the requested information in another section of the WMP, it must provide a cross-reference with a hyperlink to that section. The overview must be no more than one page.

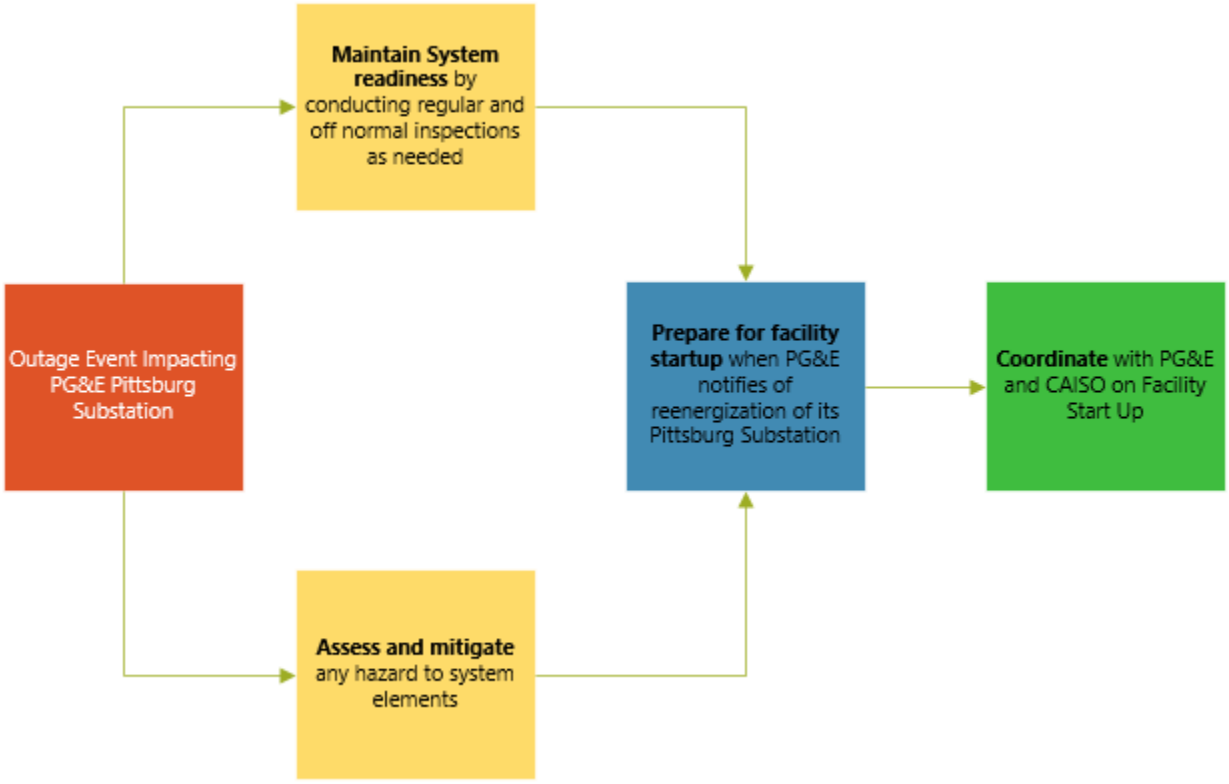
Reference the Utility Initiative Tracking ID where appropriate.

As noted in Section 8.4.2.1 above, due to TBC's limited scope and scale of operations, TBC does not maintain emergency preparedness plans specifically for wildfire and PSPS events. As such, TBC also does not maintain plans for restoration of service after an outage specifically due to a wildfire or PSPS. Instead TBC would follow its standard Facility Startup and Shutdown Plan (FSS Plan) (TBC-OP-007) and System Restoration Plan (SR Plan) (TBC-OP-008) to restore service in the event of an outage caused by wildfire or PG&E-initiated PSPS event. In most scenarios TBC would utilize its FSS Plan to restore service. The SR Plan would likely be triggered if there was a major system disturbance of the bulk electric system, e.g. system-wide blackout, with the goal being to bring the grid back online.

The FSS Plan's purpose is provide a repeatable procedure for the safe startup of the Trans Bay System. The scope is to prepare the system to receive and execute commercial dispatch instructions from the CAISO and reactive dispatch instructions from PG&E. This includes completion of pre-start up system checks and coordination of switching and energization activities with PG&E operations counterparts to energize the AC and DC cables so the Trans Bay System is ready to transmit (See FFS Plan Section 4.3). Given that the Trans Bay System is under the operational control of the CAISO and is interconnected to PG&E at both ends, TBC's restoration process is closely coordinated with the CAISO and PG&E.

TBC anticipates that it will never be necessary to issue a PSPS. The Interconnecting Transmission Owner, PG&E, would be the main driver of a PSPS in the Trans Bay System's operational area. Any PSPS issued by PG&E that impacted its Pittsburg Substation to the extent that TBC's interconnection would be de-energized would automatically take the Trans Bay System offline. TBC would reenergize once power to its interconnection was restored. The figure below reflects the key components of the service restoration procedures from the start of the incident to response, recovery, and restoration of service.

Figure TBC 8.4.5- 1. Service Restoration Flow Diagram



Considering TBC's limited footprint with one transmission asset, TBC has a small staff of 8 personnel, who oversees all aspects of its operations, including emergency response. As such it is the same staff that conducts regular operations and maintenance that responds to emergency events. Initial response and coordination to any emergency condition begins with the TBC System Operator who has full authority and responsibility to act autonomously to coordinate and conduct an emergency shutdown of the Trans Bay System in accordance with TBC-OP-004 Emergency Operations. The System Operator is supported by an on-call operator and on-call engineer outside normal work hours, and the Director Operations, Operations Manager, On-shift Operations & Maintenance Technician and Senior Engineer during normal work hours. Additional off-duty Operations & Maintenance Technicians would be called in as needed.

As TBC does not maintain specific wildfire and PSPS plans due to its limited scope and scale of operations, it does not conduct specific wildfire and PSPS drills. TBC operations staff do participate in the CAISO's annual restoration drill, which simulates recovery of the CAISO managed transmission network after a significant system wide disruption.

Given that TBC does not have any retail customers is does not communication with the public but maintains communications and coordinates with the CAISO who has operational control of the Trans Bay System and PG&E who is the interconnecting utility in accordance with Section 4.3 of the FSS. For any fire incident that impacted TBC's Pittsburg Converter Station, TBC would contact and coordinate with the local Contra Costa Fire department.

8.4.5.2 Planning and Allocation of Resources

Instructions: *The electrical corporation must briefly describe its methods for planning appropriate resources (e.g., equipment, specialized workers), and allocating those resources to assure the safety of the public during service restoration.*

In addition, the electrical corporation must provide an overview of its plans for contingency measures regarding the resources required to respond to an increased number of reports concerning unsafe conditions and expedite a response to a wildfire- or PSPS-related power outage.
This must include a brief narrative on how the electrical corporation:

- *Uses weather reports to pre-position manpower and equipment before anticipated severe weather that could result in an outage*
- *Sets priorities*
- *Facilitates internal and external communications*
- *Restores service*

The narrative for this section must be no more than two pages.

As noted in Section 8.4.5.1, TBC does not maintain service restoration plans specific to wildfire or PSPS. Instead, TBC would follow its standard FSS Plan (TBC-OP-007) to restore service in the event of an outage

caused by wildfire or PG&E-initiated PSPS event. Given the limited scale and scope of TBC's operations, its onsite team provide sufficient resources to insure the safe startup of the Trans Bay system. The FSS Plan requires coordination with the CAISO and PG&E before the Trans Bay System is ready for commercial dispatch. Additionally, the System cannot transmit power until, the CAISO provides dispatch instructions.

Considering TBC's limited footprint with one transmission asset, and the nature of its underground assets, weather does not have material impact on TBC operations. As such, TBC does not use weather reports to pre-position manpower or equipment before anticipated server weather. The Trans Bay System is monitored 24/7 by an on-site System Operator. The System Operator has full authority and responsibility to act autonomously to coordinate and conduct an emergency shutdown of the Trans Bay System in accordance with TBC-OP-004 Emergency Operations. The System Operator is supported by an on-call operator and on-call engineer outside normal work hours, and the Director Operations, Operations Manager, On-shift Operations & Maintenance Technician and Senior Engineer during normal work hours. Additional off-duty Operations & Maintenance Technicians would be called in as needed. Most of TBC's critical spares are stored onsite at its Pittsburg Converter Station with the remainder at its Potrero Converter Station. Based on TBC's limited footprint the only priority would be to maintain the Trans Bay System in a state of readiness to be able to reenergize when notified by the CASIO and/or PG&E.

TBC's FSS Plan requires coordination with PG&E and the CAISO to commence and complete start-up (See FSS Plan Section 4.3), and would be the procedure followed to start up the Trans Bay System following any outage, including an event of wildfire or PSPS.

8.4.5.3 Drills, Simulations, and Tabletop Exercises

Instructions: *Discussion-based and operational-based exercises enhance knowledge of plans, allow personnel to improve their own performance, and identify opportunities to improve capabilities to respond to wildfire- and PSPS-related service outages. Exercises also provide a method to evaluate an electrical corporation's emergency preparedness plan and identify planning and/or procedural deficiencies.*

Internal Exercises

The electrical corporation must report on its program(s) for conducting internal discussion-based and operations-based exercises for service restoration. This must include, at a minimum:

- *The types of discussion-based exercises (e.g., seminars, workshops, tabletop exercises, games) and operations-based exercises (e.g., drills, functional exercises, full-scale exercises)*
- *The purpose of the exercises*
- *The schedule and frequency of exercise programs*
- *The percentage of staff who have completed/participated in exercises*
- *How the electrical corporation tracks who has completed the exercises*

Table 8-51 provides an example of the minimum acceptable level of information.

External Exercises

The electrical corporation must report on its program(s) for conducting external discussion-based and operations-based exercises for service restoration due to wildfire. This must include, at a minimum:

- *The types of discussion-based exercises (e.g., seminars, workshops, tabletop exercises, games) and operations-based exercises (e.g., drills, functional exercises, full-scale exercises)*
- *The schedule and frequency of exercise programs*
- *The percentage of public safety partners who have participated in these exercises*
- *How the electrical corporation tracks who has completed the exercises*

Table 8-52 provides an example of the minimum acceptable level of information.

Table 8-51. Example of Internal Drill, Simulation, and Tabletop Exercise Program for Service Restoration

Category	***Exercise Title and Type***	***Purpose***	***Exercise Frequency***	***Position of Title of Personnel Required to Participate***	***Personnel Required***	***Personnel Completed***	***Form of Verification or Reference***
Discussion-based	*PSPS event tabletop exercise*	*• Provide electrical corporation a way to determine its readiness to respond to a PSPS event* *• Clarify gaps or problems with existing policies and plans* *• Help administration and staff understand their roles during a PSPS event.* *• Serve as a training tool*	*Annually*	*• Program Director of Emergency Planning* *• Grid Operations Program Manager and supervisors* *• Emergency Operations Center Supervisor* *• Public Information Officer*	*10*	*10*	*Exercise scoping materials and completion logs*

		• Help identify needs for other resources • Serve as a tool for modifying and improving existing PSPS plans based on the lessons learned during the exercise					
Operations-based	Wildfire emergency drill		Annually (before September 1)	• Program Director of Emergency Planning • Grid Operations Program Manager and supervisors • Emergency Operations Center Supervisor and staff • Public Information Officer • Electrical corporation fire chief	20	19	Exercise scoping materials and completion logs

Table 8-52. Example of External Drill, Simulation, and Tabletop Exercise Program for Service Restoration

Category	Exercise Title and Type	Purpose	Exercise Frequency	Position of Title of Personnel Required to Participate	Personnel Required	Personnel Completed	Form of Verification or Reference

Discussion-based	*PSPS event tabletop exercise*	*• Provide electrical corporation and public safety partners a way to determine their readiness to respond and recover from a PSPS event* *• Clarify gaps or problems with existing MAAs and MOAs, policies, and plans* *• Help electrical corporation and public safety partners understand their roles during a PSPS event* *• Serve as a training tool* *• Help identify needs for other resources* *• Serve as a tool for modifying and improving existing PSPS coordination and emergency response plans based on the lessons learned during the exercise*	*Annually*	*• Program Director of Emergency Planning* *• Grid Operations Program Manager and supervisors* *• Emergency Operations Center Supervisor* *• Fire chief(s) or liaison* *• Police, sheriff, and CHP chief(s) or liaisons* *• County Health liaison* *• American Red Cross liaison* *• Emergency Operations Supervisor(s) for relevant city/county jurisdictions*	*20*	*18*	*Exercise scoping materials and completion logs*
Operations-based	*Wildfire emergency drill*		*Annually (before September 1)*	*• Program Director of Emergency Planning*	*20*	*19*	*Exercise scoping materials and*

				• *Grid Operations Program Manager and supervisors* • *Emergency Operations Center Supervisor* • *Electrical corporation fire chief and fire marshal* • *Fire chief(s) or liaison* • *Police, sheriff, and CHP chiefs or liaisons*			*completion logs*

As a result of TBC's limited footprint, location outside HFTDs and , TBC does not conduct specific internal exercises for service restoration due to wildfire. Therefore Table 8- 50 is marked "N/A" meaning "Not Applicable".

Table 8- 50. Internal Drill, Simulation, and Tabletop Exercise Program for Service Restoration

Category	Exercise Title and Type	Purpose	Exercise Frequency	Position of Title of Personnel Required to Participate	Personnel Required	Personnel Completed	Form of Verification or Reference
N/A							

As a result of TBC's limited footprint, location outside HFTDs and , TBC does not conduct specific external exercises for service restoration due to wildfire. Therefore Table 8- 51 is marked "N/A" meaning "Not Applicable".

Table 8- 51. External Drill, Simulation, and Tabletop Exercise Program for Service Restoration

Category	Exercise Title and Type	Purpose	Exercise Frequency	Position of Title of Personnel Required to Participate	Personnel Required	Personnel Completed	Form of Verification or Reference
N/A							

8.4.6 Customer Support in Wildfire and PSPS Emergencies

Instructions: *In this section of the WMP, the electrical corporation must provide an overview of its programs, systems, and protocols to support residential and non-residential customers in wildfire emergencies and PSPS events. The overview for each emergency service must be no more than one page. At a minimum, the overview must cover the following customer emergency services, per Public Utilities Code section 8386(c)(21):*

- *Outage reporting*
- *Support for low-income customers*
- *Billing adjustments*
- *Deposit waivers*
- *Extended payment plans*
- *Suspension of disconnection and nonpayment fees*
- *Repair processing and timing*
- *List and description of community assistance locations and services*
- *Medical Baseline support services*
- *Access to electrical corporation representatives*

Reference the Utility Initiative Tracking ID where appropriate.

As noted on page 11 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(21)[46]. However, beyond that, reporting requirements associated with Section 8.4.6 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include Customer Support in Wildfire and PSPS Emergencies information for Section 8.4.6. Instead TBC provides the following information pursuant to Energy Safety's direction on page 11 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)(21)

[46] *(21) "Protocols for compliance with requirements adopted by the commission regarding activities to support customers during and after a wildfire, outage reporting, support for low-income customers, billing adjustments, deposit waivers, extended payment plans, suspension of disconnection and nonpayment fees, repair processing and timing, access to electrical corporation representatives, and emergency communications."*

TBC does not serve end-use customers, have a traditional service territory or a distribution system. Additionally, based on the limited scale and scope of the Trans Bay System, TBC anticipates that it will seldom, if ever, be necessary to issue a PSPS. The Interconnecting Transmission Owner, PG&E, would be the main driver of a PSPS in TBC's operational area. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. TBC will reassess its current approach in the event of a change in its operations which necessitates engagement of and/or outreach to customers.

8.5 Community Outreach and Engagement

8.5.1 Overview

Instructions: *In accordance with California Public Utilities Code section 8386(c)(19)(B) each electrical corporation must provide its plans for community outreach and engagement before, during, and after a wildfire. The electrical corporation must also provide its plans for outreach and engagement related to PSPS, outages from protective equipment and device settings, and vegetation management.*

In this section, the electrical corporation must identify objectives for the next 3- and 10-year periods, targets, and performance metrics related to the following community outreach and engagement mitigation initiatives:

- *Public outreach and education awareness for wildfires, PSPS, outages from protective equipment and device settings, and vegetation management*
- *Public engagement in the WMP decision-making process*
- *Engagement with AFN populations, local governments, and tribal communities*
- *Collaboration on local wildfire mitigation and planning*
- *Best practice sharing with other electrical corporations from within and outside of California*

TBC does not serve end-use customers, have a traditional service territory or a distribution system. TBC's operations area is fully encompassed by PG&E service territory with TBC's Pittsburg converter station, the TBC facility presenting the greatest risk to proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operations area. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. However, TBC has developed a protocol for communication and coordination with its primary stakeholders, including the CAISO and Interconnecting Transmission Owner. TBC's President or designee would be the lead in implementing this communications protocol during an emergency. Given the above, TBC does not have an objectives, plans, targets or performance metrics related to community outreach or engagement for the 2023-2025 WMP cycle and beyond. TBC will reassess its current community outreach and engagement outlook in the event of a change in its operations which necessitates engagement of and/or outreach to customers.

8.5.1.1 Objectives

Instructions: *Each electrical corporation must summarize the objectives for its 3-year and 10-year plans for implementing and improving its community outreach and engagement.41 These summaries must include the following:*

- *Identification of which initiative(s) in the WMP the electrical corporation is implementing to achieve the stated objective, including Utility Initiative Tracking IDs*
- *Reference(s) to applicable codes, standards, and best practices/guidelines and an indication of whether the electrical corporation exceeds an applicable code, standard, or regulation*
- *Method of verifying achievement of each objective*
- *A completion date for when the electrical corporation will achieve the objective*
- *Reference(s) to the WMP section(s) or appendix, including page numbers, where the details of the objective(s) are documented and substantiated*

This information must be provided in Table 8-53 for the 3-year plan and Table 8-54 for the 10-year plan. Examples of the minimum acceptable level of information are provided below.

Table 8-53. Example of Community Outreach and Engagement Initiative Objectives (3-year plan)

Objectives for Three Years (2023–2025)	***Applicable Initiative(s), Tracking ID(s)***	***Applicable Regulations, Codes, Standards, and Best Practices (See Note)***	***Method of Verification (i.e., program)***	***Completion Date***	***Reference (section & page #)***
Assess and resolve any customer issues identified through mobile application within 1 week	*Public outreach and engagement, PE-01*	*Customer support guidance document*	*Records of open and closed customer tickets including dates*	*May 2024*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation and substantiation.

Table 8-54. Example of Community Outreach and Engagement Initiative Objectives (10-year plan)

Objectives for Ten Years (2026–2032)	*Applicable Initiative(s), Tracking ID(s)*	*Applicable Regulations, Codes, Standards, and Best Practices (See Note)*	*Method of Verification (i.e., program)*	*Completion Date*	*Reference (section & page #)*
Formalize mechanism to share lessons learned among peers in and outside the state	*Best practice sharing, CO-01*	*Guidance document for sharing data and information externally*	*Documented instances of collaboration between the electrical corporation and outside entities, including agendas, meeting minutes, and participant lists*	*June 2026*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

See TBC's responses to Section 8.5.1. TBC does not serve end-use customers, have a traditional service territory or a distribution system. Additionally, based on the limited scale and scope of the Trans Bay System, at this time, TBC believes that it will seldom, if ever, be necessary to issue a PSPS. The Interconnecting Transmission Owner, PG&E, would be the main driver of a PSPS in TBC's operational area. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. TBC has no current community outreach and engagement objectives in the 2023-2025 WMP Cycle and beyond. TBC will reassess its current community outreach and engagement outlook in the event of a change in its operations which necessitates engagement of and/or outreach to customers. As a result Table 8- 52 and Table 8- 53 are marked "N/A" meaning "Not Applicable".

Table 8- 52. Community Outreach and Engagement Initiative Objectives (3-year plan)

Objectives for Three Years (2023–2025)	**Applicable Initiative(s), Tracking ID(s)**	**Applicable Regulations, Codes, Standards, and Best**	**Method of Verification (i.e., program)**	**Completion Date**	**Reference (section & page #)**

		Practices (See Note)			
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation and substantiation.

Table 8- 53. Community Outreach and Engagement Initiative Objectives (10-year plan)

Objectives for Ten Years (2026–2032)	**Applicable Initiative(s), Tracking ID(s)**	**Applicable Regulations, Codes, Standards, and Best Practices (See Note)**	**Method of Verification (i.e., program)**	**Completion Date**	**Reference (section & page #)**
N/A					

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

8.5.1.2 Targets

***Instructions*:** *Initiative targets are forward-looking quantifiable measurements of activities identified by each electrical corporation in its WMP. Electrical corporations will show progress toward completing targets in subsequent reports, including QDRs and WMP Updates.*

The electrical corporation must list all targets it will use to track progress on its community outreach and engagement for the three years of its Base WMP. Energy Safety's Compliance Assurance Division and third parties must be able to track and audit each target.[47] *For each initiative target, the electrical corporation must provide the following:*

- *Utility Initiative Tracking IDs.*
- *Projected targets for each of the three years of the Base WMP and relevant units.*
- *Quarterly, rolling targets for 2023 and 2024 (PSPS outreach only).*
- *The expected "x% risk impact" for each of the three years of the Base WMP. The expected x% risk impact is the expected percentage risk reduction per year, as described in Section 7.2.2.2.*
- *Method of verifying target completion.*

The electrical corporation's targets must provide enough detail to effectively inform efforts to improve the performance (i.e., reduction in ignition probability or wildfire consequence) of the electrical corporation's community outreach and engagement initiatives.

[47] *Annual information included in this section must align with Tables 1 and 12 of the QDR.*

Table 8-55 and Table 8-56 provide examples of the minimum acceptable level of information.

Table 8-55. Example of Community Outreach and Engagement Initiative Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
Hire additional customer support	*PO-02*	*2 additional supervisors hired*	*0.01%*	*4 additional agents hired*	*0.01%*	*3 additional agents hired*	*0.01%*	*Hiring records and number of positions in workforce tracking platform showing before and after results*

Table 8-56. Example of PSPS Outreach and Engagement Initiative Targets by Year

Initiative Activity	Tracking ID	Target End of Q2 2023 & Unit	Target End of Q3 2023 & Unit	End of Year Target 2023 & Unit	x% Risk Impact 2023	Target End of Q2 2024 & Unit	Target End of Q3 2024 & Unit	End of Year Target 2024 & Unit	x% Risk Impact 2024	Target 2025 & Unit	x% Risk Impact 2023	Method of Verification
Hold public meetings in high PSPS risk areas	*PO-03*	*1 meeting*	*10 meetings*	*12 meetings*	*0.05%*	*3 meetings*	*15 meetings*	*20 meetings*	*0.1%*	*20 meetings*	*0.1%*	*Meeting agendas, meeting materials and attendance records*

TBC does not serve end-use customers, have a traditional service territory or a distribution system. Additionally, based on the limited scale and scope of the Trans Bay System, at this time, TBC believes that it will seldom, if ever, be necessary to issue a PSPS. The Interconnecting Transmission Owner, PG&E, would be the main driver of a PSPS in TBC's operational area. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. TBC has no current community outreach and engagement objectives in the 2023-2025 WMP Cycle and beyond and therefore has no initiative targets. TBC will reassess its current community outreach and engagement outlook in the event of a change in its operations which necessitates engagement of and/or outreach to customers. As a result Table 8- 53 and
Table 8- 54 are marked "N/A" meaning "Not Applicable".

Table 8- 54. Community Outreach and Engagement Initiative Targets by Year

Initiative Activity	Tracking ID	2023 Target & Unit	x% Risk Impact 2023	2024 Target & Unit	x% Risk Impact 2024	2025 Target & Unit	x% Risk Impact 2025	Method of Verification
N/A								

Table 8- 55. PSPS Outreach and Engagement Initiative Targets by Year

Initiative Activity	Tracking ID	Target End of Q2 2023 & Unit	Target End of Q3 2023 & Unit	End of Year Target 2023 & Unit	x% Risk Impact 2023	Target End of Q2 2024 & Unit	Target End of Q3 2024 & Unit	End of Year Target 2024 & Unit	x% Risk Impact 2024	Target 2025 & Unit	x% Risk Impact 2023	Method of Verification
N/A												

8.5.1.3 Performance Metrics Identified by the Electrical Corporation

***Instructions*:** *Performance metrics indicate the extent to which an electrical corporation's Wildfire Mitigation Plan is driving performance outcomes. Each electrical corporation must:*

- *List the performance metrics the electrical corporation uses to evaluate the effectiveness of its community outreach and engagement in reducing wildfire and PSPS risk*[48]

For each of those performance metrics listed, the electrical corporation must:

- *Report the electrical corporation's performance since 2020 (if previously collected)*
- *Project performance for 2023-2025*
- *List method of verification*

The electrical corporation must ensure that each metric's name and values are the same in its WMP reporting as its QDR reporting (specifically, QDR Table 2 and QDR Table 3). Metrics listed in this section that are the same as performance metrics required by Energy Safety and reported in QDR Table 2 (Performance Metrics)[49] *must match those reported in QDR Table 2. Metrics listed in this section that are not the same as any of the performance metrics identified by Energy Safety and reported in QDR Table 2 must match those reported in QDR Table 3.*

The electrical corporation must:

- *Summarize its self-identified performance metric(s) in tabular form*
- *Provide a brief narrative that explains trends in the metrics*

[48] *There may be overlap between the performance metrics the electrical corporation uses and performance metrics required by Energy Safety. The electrical corporation must list these overlapping metrics in this section in addition to any unique performance metrics it uses.*

[49] *The performance metrics identified by Energy Safety are included in Energy Safety's Data Guidelines.*

Table 8-57 provides an example of the minimum acceptable level of information.

Table 8-57. Example of Community Outreach and Engagement Performance Metrics Results by Year

Performance Metrics	*2020*	*2021*	*2022*	*2023 Projected*	*2024 Projected*	*2025 Projected*	*Method of Verification (e.g., third-party evaluation, QDR)*

TBC does not serve end-use customers, have a traditional service territory or a distribution system. Additionally, based on the limited scale and scope of the Trans Bay System, at this time, TBC believes that it will seldom, if ever, be necessary to issue a PSPS. The Interconnecting Transmission Owner, PG&E, would be the main driver of a PSPS in TBC's operational area. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. TBC has no current community outreach and engagement objectives in the 2023-2025 WMP Cycle and beyond and therefore has no performance metrics. TBC will reassess its current community outreach and engagement outlook in the event of a change in its operations which necessitates engagement of and/or outreach to customers. As a result Table 8- 56 is marked "N/A" meaning "Not Applicable".

Table 8- 56. Community Outreach and Engagement Performance Metrics Results by Year

Performance Metrics	2020	2021	2022	2023 Projected	2024 Projected	2025 Projected	Method of Verification (e.g., third-party evaluation, QDR)
N/A							

8.5.2 Public Outreach and Education Awareness Program

***Instructions*:** *The electrical corporation must provide a high-level overview of its public outreach and education awareness program(s) for wildfires; outages due to wildfires, PSPS events, and protective equipment and device settings; service restoration before, during, and after the incidents (as required by Public Utilities Code section 8386[c][19][B]); and vegetation management. This includes outreach efforts in English, Spanish, Chinese (including Cantonese, Mandarin, and other Chinese languages), Tagalog, and Vietnamese, as well as Korean and Russian where those languages are prevalent within the service territory.*

At a minimum, the overview must include the following:

- *A description of the purpose and scope of the program(s).*
- *References to the Utility Initiative Tracking ID where appropriate.*
- *A brief narrative followed by a tabulated list of all the different target communities it is trying to reach across the electrical corporation's service territory. The target communities list must include AFN and other vulnerable or marginalized populations, but they may also include other target*

populations, such as communities in different geographic locations (e.g., urban areas, rural areas), age groups, language and ethnic groups, transient populations, or Medical Baseline customers. In addition, the electrical corporation must summarize the interests or concerns each community may have before, during, or after a wildfire or PSPS event to help inform outreach and education awareness needs. Table 8-58 provides an example of the minimum acceptable level of information.

- *A tabulated list of community partners the electrical corporation is working with or intends to work with to support its community outreach and education programs. Table 8-59 provides an example of the minimum acceptable level of information.*
- *A table of the various outreach and education awareness programs (i.e., campaigns, informal education, grant programs, participatory learning) that the electrical corporation implements before, during, and after wildfire, vegetation management, and PSPS events, including efforts to engage with partners in developing and exercising these programs. In addition, the electrical corporation must describe how it implements its overall program, including staff and volunteer needs, other resource needs, method for implementation (e.g., industry best practice, latest research in methods for risk communication, social marketing), long-term monitoring and evaluation of each program's success, need for improvement, etc. The narrative for this section is limited to two to three pages. The electrical corporation must also provide the information on its outreach and education awareness programs in tabulated format. Table 8-58 provides an example of the minimum acceptable level of information.*

Table 8-58. Example of a List of Target Communities

Target Community	***Interests or Concerns Before, During, and After Wildfire and PSPS events***
Populations with limited English proficiency	*Limited access to understand electrical corporation wildfire hazards and risks, specific actions that can be taken to reduce risk, and awareness of emergency services, resources, etc.*
People in remote areas	*[Electrical corporation to add description here]*
Elderly	*[Electrical corporation to add description here]*
People with limited technology	*[Electrical corporation to add description here]*

Table 8-59. Example of a List of Community Partners

Community Partners	*County*	*City*
Regional Fire Safe Council	*Local County*	*Local City*
Emergency Relief Organization	*Local County*	*Local City*
Local City Government	*Local County*	*Local City*

Table 8-60. Example of Community Outreach and Education Programs

Core Activity	*Event Type*	*Period of Application (Before, During, After Incident)*	*Name of Outreach or Education Program*	*Description of Program*	*Target Audience*	*Reference/ Link*
Website information	*Wildfire*	*Before*	*General Wildfire Safety*	*[Electrical corporation to insert description]*	*General public*	*http://www.corporation.com/wildfire-safety*
Website information	*PSPS*	*Before*	*Public Safety Power Shutoff*	*[Electrical corporation to insert description]*	*General public*	
Website information	*Wildfire*	*Before*	*Wildfire Safety Advancements*	*[Electrical corporation to insert description]*	*General public*	
Website information	*Vegetation Management*	*Before*	*Pre-inspection Notification*	*[Electrical corporation to insert description]*	*Customers along inspection route*	
Website information	*Wildfire and PSPS*	*Before*	*Community Resources*	*This website provides customers and the general public with locations of community resource centers throughout the service territory to provide support to customers affected by PSPS.*	*General public*	
Safety webinars	*Wildfire*	*Before*	*Community Wildfire Safety Program*	*These virtual gatherings allow community members to learn more about wildfire safety and emergency preparedness, meet with electrical*	*General public, AFN population, limited English proficiency (LEP) population*	

				corporation representatives, ask questions, and share feedback. Webinars are available in English, Spanish, Chinese, and Tagalog, as well as accessible versions for AFN customers, blind/low vision customers, deaf/hard of hearing customers, etc.		

As noted on page 12 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(19)(B)[50]. However, beyond that, reporting requirements associated with Section 8.5.2 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include a Public Outreach and Education Awareness Program for Section 8.5.2. Instead TBC provides the following information pursuant to Energy Safety's direction on page 12 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)19(B)

TBC does not serve end-use customers, have a traditional service territory or a distribution system. TBC's operations area is fully encompassed by PG&E service territory with TBC's Pittsburg converter station, the TBC facility presenting the greatest risk to proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operations area. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. However, TBC has developed a protocol for communication and coordination with its primary stakeholders, including the CAISO and Interconnecting Transmission Owner, local fire agencies, etc. TBC's President or designee would be the lead in implementing this communications protocol during an emergency. TBC also maintains its WMP filings and related information on its website which is publicly available at the following link: https://www.transbaycable.com/wildfire-safety.html.

[50] *(19)(B) "Plans for community outreach and public awareness before, during, and after a wildfire, including language notification in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the commission based on the United States Census data."*

8.5.3 Engagement with Access and Functional Needs Populations

***Instructions*:** *In this section, the electrical corporation must provide an overview of its process for understanding, evaluating, designing, and implementing wildfire and PSPS risk mitigation strategies, policies, and procedures specific to AFN customers across its territory. The electrical corporation must also report, at a minimum, on the following:*

- *Summary of key AFN demographics, distribution, and percentage of total customer base.*
- *Evaluation of the specific challenges and needs during a wildfire or PSPS event of the electrical corporation's AFN customer base.*
- *Plans to address specific needs of the AFN customer base throughout the service territory specific to the unique threats that wildfires and PSPS events may pose for those populations before, during, and after the incidents. This should include high-level strategies, policies, programs, and procedures for outreach, engagement in the development and implementation of the AFN-specific risk mitigation strategies, and ongoing feedback practices.*

Reference the Utility Initiative Tracking ID where appropriate.

As noted on page 13 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(19)(B). However, beyond that, reporting requirements associated with Section 8.5.3 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include information regarding the Engagement with Access and Functional Needs Populations for Section 8.5.3. Instead TBC provides the following information pursuant to Energy Safety's direction on page 13 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)19(B)

See TBC's Response to 8.5.2.

8.5.4 Collaboration on Local Wildfire Mitigation Planning

Instructions: *In this section, the electrical corporation must provide a high-level overview of its plans, programs, and/or policies for collaborating with communities on local wildfire mitigation planning (e.g., wildfire safety elements in general plans, community wildfire protection plans, local multi-hazard mitigation plans) within its service territory. The narrative must be no more than one page.*

In addition, the electrical corporation must provide the following information in tabular form, providing no more than one page of tabulated information in the main body of the WMP and the full table in an Appendix as needed.

- *List of county, city, and tribal agencies and non-governmental organizations (e.g., nonprofits, fire safe councils) within the service territory with which the electrical corporation has collaborated*

or intends to collaborate on local wildfire mitigation planning efforts (i.e., non-wildfire emergency planning activities)

- *For each entity, the local wildfire mitigation planning program/plan/document, level of collaboration (e.g., meeting attendance, verbal or written comments), and date the electrical corporation provided its last feedback. Table 8-61 provides an example of the minimum acceptable level of information. Reference the Utility Initiative Tracking ID where appropriate.*

- *In a separate table, the electrical corporation must provide a list of current gaps and limitations in its collaboration efforts with local partners on local wildfire planning efforts. Where gaps or limitations exist, the electrical corporation must indicate proposed means and methods to increase collaborative efforts. Table 8-62 provides an example of the minimum acceptable level of information.*

Table 8-61. Example of Collaboration in Local Wildfire Mitigation Planning

Name of County, City, or Tribal Agency or Civil Society Organization (e.g., nongovernmental organization, fire safe council)	***Program, Plan, or Document***	***Last Version of Collaboration***	***Level of Collaboration***
Local County Resource Management Agency	*Local County General Plan, Safety Element, Wildfires*	*2022 version (06/2021)*	*Attended a virtual meeting on 02/02/2022 at 1 pm PDT Provided verbal comments and input*
Local Fire Safe Council	*Structural hardening grant program*	*2021/2022*	*Financier*
Local County Resource Conservation District	*Chipper program*	*Planned for 12/2023*	*Financier*
Local Tribal Agency	*Tribal Government Wildfire Safety Plan*	*2022 version (06/2021)*	*Attended a virtual meeting on 02/02/2022 at 1 pm PDT Provided verbal comments and input*

Table 8-62. Example of Key Gaps and Limitations in Collaborating on Local Wildfire Mitigation Planning

Subject of Gap or Limitation	*Brief Description of Gap or Limitation*	*Strategy for Improvement*
Low collaboration requests	*Less than 5% of local government and civil society stakeholder groups seek collaboration activities.*	***Strategy:** Create web content notifying the public, local government, and civil society organizations of the electrical corporation's resources to provide support on local wildfire mitigation planning efforts. Assign a local wildfire planning liaison to be available as needed for local planning efforts.* ***Target timeline**: Develop and post web content by May 2023 and hire two local wildfire planning liaisons by March 2023.*

TBC is an ITO that has transmission-only assets and does not have a service territory. The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. The System's western converter station is in San Francisco, a fully developed and urbanized area with minimal wildfire-threat risk. TBC does not serve end-use customers, have a traditional service territory or a distribution system. TBC's Pittsburg Converter Station is near to but not in, a Tier 2 HFTD. The station itself is in a suburban/urban environment and does not directly border any wildlands or WUIs. Based on TBC's limited footprint and operations, TBC does not collaborate with any communities, or other parties, on local wildfire mitigation planning. TBC does maintain communications with the CAISO, who has operation control of the Trans Bay System and PG&E, who is the interconnecting utility. In the event of a fire, TBC would contact the local Contra Costa Fire Department for support. TBC has previously provided the local fire department with a site map, location of oil filled equipment, what to expect when arriving on site and TBC emergency procedures.

Based on the foregoing, TBC identifies the parties with whom it communicates with in Table 8-61 but marks the categories for collaboration as "N/A" meaning "Not Applicable" since TBC does not participate in any local wildfire mitigation planning.

Table 8-61. Collaboration in Local Wildfire Mitigation Planning

Name of County, City, or Tribal Agency or Civil Society Organization (e.g., nongovernmental organization, fire safe council)	**Program, Plan, or Document**	**Last Version of Collaboration**	**Level of Collaboration**
CASIO	N/A	N/A	N/A
PG&E	N/A	N/A	N/A

Contra Costa Fire Department	N/A	N/A	N/A

Given TBC's limited footprint and scale of operations, and location of assets outside of any HFTDs, TBC does not have any plans to participate in local wildfire mitigation planning. As a result Table 8-62 is marked "N/A" meaning "Not Applicable".

Table 8-62. Key Gaps and Limitations in Collaborating on Local Wildfire Mitigation Planning

Subject of Gap or Limitation	Brief Description of Gap or Limitation	Strategy for Improvement
N/A		

8.5.5 Best Practice Sharing with Other Electrical Corporations

Instructions: *In this section, the electrical corporation must provide a high-level overview of its policy for sharing best practices and collaborating with other electrical corporations on technical and programmatic aspects of its WMP program. The narrative must be no more than one page.*

In addition, the electrical corporation must provide a list in tabular form of relevant electrical corporations and other entities it has shared or collaborated, or intends to continue to share or collaborate or begin sharing or collaborating, with on best practices for technical or programmatic aspects of its WMP program.

For each entity, the best practice subject, date(s) of collaboration, whether the collaboration is technical or programmatic, list of electrical corporation partners, a description of the best practice sharing/collaborative activity with a reference, and any outcomes from that sharing or activity.

Reference the Utility Initiative Tracking ID where appropriate.

The overview and table must be no longer than two pages in the main body of the WMP. The full table can be included as an appendix as needed.

Table 8-63 provides an example of the minimum acceptable level of information.

Table 8-63. Example of Best Practice Sharing with Other Electrical Corporations

Best Practice Subject	*Dates of Collaboration (YYYY–YYYY)*	*Technical or Programmatic*	*Electrical Corporation Partner(s)*	*Description of Best Practice Sharing or Collaborating*	*Outcome*

Covered conductor effectiveness	*2020–Current*	*Technical*	*PGE, SCE, SDGE, Liberty, PacifiCorp, BVES*	*The IOUs commissioned a joint study to assess the effectiveness and reliability of covered conductors (CCs) for overhead distribution system hardening. The aim is to develop consistent criteria and measurements for evaluating effectiveness of CCs. Refer to the report entitled "Effectiveness of Covered Conductors: Failure Mode Identification and Literature Review," dated December 22, 2021, for more details.*	*Ongoing* *• CCs are a mature technology (in use since the 1970s) and have the potential to mitigate several safety, reliability, and wildfire risks inherent to bare conductors. This is due to the reduced vulnerability to arcing/faults afforded by the multi-layered polymeric insulating sheath material.* *• Of the 10 hazards that affect bare conductors, CCs have the potential to mitigate six (tree/vegetation contact, wind-induced contact, third-party damage, animal-related damage, public/worker impact, and moisture).* *• Laboratory studies and field experience have shown that CCs largely mitigated arcing due to external contact.* *• Several CC-specific failure modes exist that require operators to consider additional personnel training, augmented installation practices, and adoption of new mitigation strategies (e.g., additional lightning arrestors, conductor washing programs).*

The Trans Bay System consists of a single transmission system in which the main transmission element is a submarine cable. As such many of the substantial and warranted efforts undertaken by utilities whose service territories include distribution systems and customers and encompass wildlands and WUIs are not specifically applicable to TBC. TBC does not have a formal process on sharing best practices with its affiliates, but shares information on an ad hoc basis as various capital improvements are developed that may have applicable fire risk reduction benefits. TBC reviews and shares fire risk reduction best practices and information with its affiliates across its corporate enterprise particularly, Horizon West Transmission ("HWT"), which is a similarly situated transmission-only utility in California. HWT's experiences are invaluable as it is sited in a Tier 3 HFTD in San Diego, California. TBC also leverages the operational experience and best practices from other affiliates which manage wildfire risk and other weather related risks across the United States, particularly in the Southwest, Midwest and Southeast. As TBC does not have a formal process/program for best practice sharing it does not specifically document such occurrences. As a result, there no specific information which can be included in Table 8-63 and therefore the table is marked as N/A meaning "Not Applicable".

Table 8-63. Best Practice Sharing with Other Electrical Corporations

Best Practice Subject	Dates of Collaboration (YYYY–YYYY)	Technical or Programmatic	Electrical Corporation Partner(s)	Description of Best Practice Sharing or Collaborating	Outcome
N/A					

PUBLIC SAFETY POWER SHUTOFF

9.1 Overview

Instructions: *In Sections 9.1–9.5 of the WMP,[51] the electrical corporation must:*

9

- *Provide a high-level overview of key PSPS statistics*
- *Identify circuits that have been frequently de-energized and provide measures for how the electrical corporation will reduce the need for, and impact of, future PSPS implementation on those circuits*
- *Describe expectations for how the electrical corporation's PSPS program will evolve over the next 3 and 10 years*
- *Describe any lessons learned for PSPS events occurring since the electrical corporation's last WMP submission*
- *Describe the electrical corporation's protocols for PSPS implementation*

9.1.1 Key PSPS Statistics

Instructions: *In this section, the electrical corporation must include a summary table of PSPS event data. These data must be calculated from the same source used in the GIS data submission (i.e., they should be internally consistent). If it is not possible to provide these data from the same source, the electrical corporation must explain why. Table 9-1 provides an example of the minimum acceptable level of information for a summary of PSPS event data.*

Table 9-1. Example of PSPS Event Statistics

	No. of Events	***Total Circuits De-energized***	***Total Customers[52] Impacted***	***Total Customer Minutes of Interruption***
[Beginning in first year of PSPS implementation by the electrical corporation]				
2020				

[51] *Annual information included in the following sections must align with Table 10 of the QDR.*

[52] *Here, "customers" is customer accounts. The electrical corporation may use electric meters as a proxy for customers.*

2021				
2022				

TBC is a transmission-only utility and does not own, operate, or maintain electric distribution facilities. The Trans Bay System does not include distribution reclosers. Additionally, TBC has never deployed a PSPS since it commenced operations. TBC's operational area is fully encompassed by PG&E's service territory with the TBC Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. The quantitative description of such a PSPS implementation for the System is effectively binary, the System being either online or offline due to a PG&E issued PSPS whereby the Trans Bay System would not be energized and therefore poses minimal to no fire risk to the public. TBC is an ITO and has no retail/direct customers. As noted on page 13 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(8). However, beyond that, reporting requirements associated with Section 9.1.1 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include Key PSPS Statistics for Section 9.1.1. Instead TBC provides the following information pursuant to Energy Safety's direction on page 13 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)8

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. No portion of the System is sited in a HFTD. Since the beginning of its commercial operations, TBC has not deenergized any circuits to mitigate the risk of wildfire.

9.1.2 Identification of Frequently De-energized Circuits

Instructions: *Public Utilities Code section 8386(c)(8) requires the "[i]dentification of circuits that have frequently been de-energized pursuant to a PSPS event to mitigate the risk from wildfire and the measures taken, or planned to be taken, by the electrical corporation to reduce the need for, and impact of, future PSPS of those circuits, including, but not limited to, the estimated annual decline in circuit PSPS and PSPS impact on customers, and replacing, hardening, or undergrounding any portion of the circuit or of upstream transmission or distribution lines." To comply, the electrical corporation is required to populate Table 9-2 and provide a map showing the frequently de-energized circuits.*

The map must show the following:

- *All circuits listed in Table 9-2, colored or weighted by frequency of PSPS*
- *HFTD Tiers 2 and 3 contour overlay*

Examples of the minimum acceptable level of information are provided in Table 9-2.

Table 9-2. Example of Frequently De-energized Circuits

Entry #	***Circuit ID***	***Name of Circuit***	***Dates of Outages***	***Number of Customers Served by Circuit***	***Number of Customers Affected***	***Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit***
1	*157*	*Panama*	*Dec 2–4, 2021* *Dec 7–9, 2022* *Dec 23–24, 2022*	*1,500*	*1,220 600 500*	*• 34.26 miles of overhead hardening completed; 33 miles in scope for 2022/2023* *• Eight SCADA (supervisory control and data acquisition) sectionalizing devices added or replaced*
2	*1215*	*Costa*	*Oct 27, 2018* *Nov 12–14, 2020* *Dec 2–4, 2021* *Jan 28–29, 2022*	*1,200*	*300 250 542 600*	*• 0.78 miles of overhead hardening completed* *• Backup resiliency programs that have benefited 18 customers*

Note: Once populated, if this table is longer than two pages, the electrical corporation must append the table.

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. No portion of the System is sited in an HFTD. Since the beginning of its commercial operations, TBC has not deenergized any circuits to mitigate the risk of wildfire. As a result TBC has no frequently de-energized circuits to identify and Table 9- 1 is marked “N/A” meaning “Not Applicable”.

Table 9- 1. Frequently De-energized Circuits

Entry #	Circuit ID	Name of Circuit	Dates of Outages	Number of Customers Served by Circuit	Number of Customers Affected	Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit
N/A						

9.1.3 Objectives

Instructions: *Each electrical corporation must summarize the objectives for its 3-year and 10-year plans to reduce the scale, scope, and frequency of PSPS events.47 These summaries must include the following:*

- *Identification of which initiative(s) in the WMP the electrical corporation is implementing to achieve the stated objective, including Utility Initiative Tracking IDs*
- *Reference(s) to applicable codes, standards, and best practices/guidelines and an indication of whether the electrical corporation exceeds an applicable code, standard, or regulation*
- *Method of verifying achievement of each objective*
- *A completion date for when the electrical corporation will achieve the objective*
- *Reference(s) to the WMP section(s) or appendix, including page numbers, where the details of the objective(s) are documented and substantiated*

This information must be provided in Table 9-3. Example of PSPS Objectives (3-year plan) for the 3-year plan and Table 9-4. Example of PSPS Objectives (10-year plan) for the 10-year plan. Examples of the minimum acceptable level of information are provided below.

Table 9-3. Example of PSPS Objectives (3-year plan)

Objectives for Three Years (2023–2025)	***Applicable Initiative(s) & Tracking ID(s)***	***Applicable Regulations, Codes, Standards, and Best Practices (See Note)***	***Method of Verification (i.e., program)***	***Completion Date***	***Reference (section & page #)***
Automate PSPS notifications to customers	*Communication strategy for PSPS, PSPS-02*	*CPUC's PSPS guidelines and rules*	*Contract with communications firm to automate notifications; demonstration of*	*September 2023*	

			automated process; post-event reports		

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

Table 9-4. Example of PSPS Objectives (10-year plan)

Objectives for Three Years (2023–2025)	***Applicable Initiative(s) & Tracking ID(s)***	***Applicable Regulations, Codes, Standards, and Best Practices (See Note)***	***Method of Verification (i.e., program)***	***Completion Date***	***Reference (section & page #)***
Eliminate use of PSPS	*Protocols on PSPS, PSPS-01*	*CPUC's PSPS guidelines and rules*	*Statement from executive officers; revised operational protocols*	*September 2030*	

Note: An asterisk indicates that the electrical corporation exceeds a particular code, regulation, standard, or best practice. The electrical corporation must provide a reference to the appendix section and page providing further documentation, justification, and substantiation.

TBC is a transmission-only utility and does not own, operate, or maintain electric distribution facilities. The Trans Bay System does not include distribution reclosers. Additionally, TBC has never deployed a PSPS since it commenced operations. TBC's operational area is fully encompassed by PG&E's service territory with the TBC Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. The quantitative description of such a PSPS implementation for the System is effectively binary, the System being either online or offline due to a PG&E issued PSPS whereby the Trans Bay System would not be energized and therefore poses minimal to no fire risk to the public. TBC is an ITO and has no retail/direct customers. As noted on page 14 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(8). However, beyond that, reporting requirements associated with Section 9.1.3 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include Objectives for Section 9.1.3. Instead TBC provides the following information pursuant to Energy Safety's direction on page 14 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)8

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. No portion of the System is sited in a HFTD. Since the beginning of its commercial operations, TBC has not deenergized any circuits to mitigate the risk of wildfire.

9.1.4 Targets

Instructions: *Initiative targets are forward-looking quantifiable measurements of activities identified by each electrical corporation in its WMP. Electrical corporations will show progress toward completing targets in subsequent reports, including QDRs and WMP Updates.*

The electrical corporation must list all targets it uses to track progress on reducing the scope, scale, and frequency of PSPS for the three years of the Base WMP. Energy Safety's Compliance Assurance Division and third parties must be able to track and audit each target.[53] For each initiative target, the electrical corporation must provide the following:

- *Utility Initiative Tracking IDs.*
- *Projected targets for the three years of the Base WMP and relevant units.*
- *The expected "x% risk impact" for each of the three years of the Base WMP. The expected x% risk impact is the expected percentage risk reduction per year, as described in Section 7.2.2.2.*
- *Method of verifying target completion.*

The electrical corporation's targets must provide enough detail to effectively inform efforts to improve the performance of the electrical corporation's initiatives aimed at reducing the scope, scale, and frequency of its PSPS events.

Table 9-5 is an example of the minimum acceptable level of information.

Table 9-5. Example of PSPS Targets

Initiative Activity	***Tracking ID***	***2023 Target & Unit***	***x% Risk Impact 2023***	***2024 Target & Unit***	***x% Risk Impact 2024***	***2025 Target & Unit***	***x% Risk Impact 2025***	***Method of Verification***
Install sectionalizing devices	*PSPS-05*	*10 sectionalizing devices installed*	*2%*	*5 sectionalizing devices installed*	*1%*	*5 sectionalizing devices installed*	*1%*	*Completed work orders, GIS Data Submissions*

[53] *Annual information included in this section must align with Tables 1 and 12 of the QDR.*

TBC is a transmission-only utility and does not own, operate, or maintain electric distribution facilities. The Trans Bay System does not include distribution reclosers. Additionally, TBC has never deployed a PSPS since it commenced operations. TBC's operational area is fully encompassed by PG&E's service territory with the TBC Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. The quantitative description of such a PSPS implementation for the System is effectively binary, the System being either online or offline due to a PG&E issued PSPS whereby the Trans Bay System would not be energized and therefore poses minimal to no fire risk to the public. TBC is an ITO and has no retail/direct customers. As noted on page 14 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(8). However, beyond that, reporting requirements associated with Section 9.1.4 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include Targets for Section 9.1.4. Instead TBC provides the following information pursuant to Energy Safety's direction on page 14 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)8

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. No portion of the System is sited in a HFTD. Since the beginning of its commercial operations, TBC has not deenergized any circuits to mitigate the risk of wildfire.

9.1.5 Performance Metrics Identified by the Electrical Corporations

Instructions: *Performance metrics indicate the extent to which an electrical corporation's Wildfire Mitigation Plan is driving performance outcomes. Each electrical corporation must:*

- *List the performance metrics the electrical corporation uses to evaluate the effectiveness of reducing reliance on PSPS*[54]

For each of these performance metrics listed, the electrical corporation must:

- *Report the electrical corporation's performance since 2020 (if previously collected)*
- *Project performance for 2023-2025*
- *List method of verification*

[54] *There may be overlap between the performance metrics the electrical corporation uses and performance metrics required by Energy Safety. The electrical corporation must list these overlapping metrics in this section in addition to any unique performance metrics it uses.*

The electrical corporation must ensure that each metric's name and values are the same in its WMP reporting as its QDR reporting (specifically, QDR Table 2 and QDR Table 3). Metrics listed in this section that are the same as performance metrics required by Energy Safety and reported in QDR Table 2 (Performance Metrics)[55] must match those reported in QDR Table 2. Metrics listed in this section that are not the same as any of the performance metrics identified by Energy Safety and reported in QDR Table 2 must match those reported in QDR Table 3.
The electrical corporation must:

- *Summarize its self-identified performance metric(s) in tabular form*
- *Provide a brief narrative that explains trends in the metrics*

Table 9-6 provides an example of the minimum acceptable level of information.

In addition to the table, the electrical corporation must provide a narrative (two pages maximum) explaining its method for determining its projected performance on these metrics (e.g., PSPS consequence modeling, retrospective analysis).

Table 9-6. Example of PSPS Performance Metrics Results by Year

Performance Metrics	***2020***	***2021***	***2022***	***2023 Projected***	***2024 Projected***	***2025 Projected***	***Method of Verification (e.g., third-party evaluation, QDR)***
Percentage of impacted customers notified at least 24 hours before a PSPS event							
Numbers of circuits de-energized							

[55] *The performance metrics identified by Energy Safety are included in Energy Safety's Data Guidelines.*

Numbers of customers impacted							

TBC is a transmission-only utility and does not own, operate, or maintain electric distribution facilities. The Trans Bay System does not include distribution reclosers. Additionally, TBC has never deployed a PSPS since it commenced operations. TBC's operational area is fully encompassed by PG&E's service territory with the TBC Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. The quantitative description of such a PSPS implementation for the System is effectively binary, the System being either online or offline due to a PG&E issued PSPS whereby the Trans Bay System would not be energized and therefore poses minimal to no fire risk to the public. TBC is an ITO and has no retail/direct customers. As noted on page 14 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(8). However, beyond that, reporting requirements associated with Section 9.1.5 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include Performance Metrics for Section 9.1.5. Instead TBC provides the following information pursuant to Energy Safety's direction on page 14 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)8

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. No portion of the System is sited in a HFTD. Since the beginning of its commercial operations, TBC has not deenergized any circuits to mitigate the risk of wildfire.

9.2 Protocols on Public Safety Power Shut-off

Instructions: *The electrical corporation must describe its protocols on PSPS implementation including:*

- *Risk thresholds (e.g., wind speed, FPI, etc.) and decision-making process that determine the need for a PSPS. Where the electrical corporation provides this information in another section of the WMP, it must provide a cross-reference here rather than duplicating responses.*
- *Method used to compare and evaluate the relative consequences of PSPS and wildfires.*
- *Outline of the strategic decision-making process for initiating a PSPS (e.g., a decision tree). Where the electrical corporation provides this information in another section of the WMP, it must provide a cross-reference here rather than duplicating responses.*

- *Protocols for mitigating the public safety impacts of PSPS, including impacts on first responders, health care facilities, operators of telecommunications infrastructure, and water electrical corporations/agencies.*

TBC has never issued a PSPS. Given that TBC has no distribution system, no distribution or retail customers, and is already substantially hardened against wildfires, TBC reasonably anticipates no need to issue a PSPS. The Trans Bay System is sited wholly in the CAISO's transmission network and is under the operational control of the CAISO. TBC's operational area is fully encompassed by PG&E's service territory with TBC's Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. The quantitative description of such a PSPS implementation for TBC is effectively binary, being either online or offline due to a PG&E issued PSPS whereby the Trans Bay System would not be energized and therefore poses minimal to no fire risk to the public (See Figure TBC 8.4.2- 1 for single line description of TBC system). As a result TBC does not have PSPS protocols. Additionally, all TBC's assets are in Non-HFTD areas outside of wildlands or WUIs. TBC's Pittsburg station is in a full urban environment and the cable is underground in any areas outside the station. Based on the foregoing, TBC does not evaluate or compare consequences of PSPS and wildfires because it does not issue PSPSs.

If a PG&E issued as PSPS, TBC would follow any request by PG&E or the CAISO to come offline and would await instructions to reenergize. The Trans Bay System would be reenergized per TBC's FSS Plan in coordination with PG&E and the CAISO as discussed in Section 8.4.5.1.

9.3 Communication of Strategy for PSPS

Instructions: *In Section 8.4.4 of the WMP, the electrical corporation must discuss all public communication strategies for wildfires, outages due to wildfires and PSPS, and service restoration. Thus, in this section, the electrical corporation is only required to provide a cross-reference to Section 8.4.4 and any other section of the WMP providing details of the emergency public communication strategy for PSPS implementation.*

As explained above, as a transmission-only utility, TBC does not serve end-use customers or have a traditional service territory. Therefore, TBC does not anticipate providing customer support or engaging with communities during an emergency. However, TBC does have a protocol for engaging with other critical stakeholders (e.g., CAISO, Interconnecting Transmission Owners, local fire agencies, etc.) regarding any potential emergency event, including a PSPS event, as detailed in TBC's Emergency Operations Plan and Emergency Action Plan.

9.4 Key Personnel, Qualifications, and Training for PSPS

Instructions: *In Section 8.4.2.2 of the WMP, the electrical corporation must discuss all key personnel planning, qualifications, and training for wildfires, outages due to wildfires, and PSPS, and service restoration. Thus, in this section, the electrical corporation is only required to provide a cross-reference to Section 8.4.2.2 and any other section of the WMP providing details of key personnel, qualifications, and training for PSPS implementation.*

As explained above, as a transmission-only utility, TBC does not serve end-use customers, have a distribution system or a traditional service territory. TBC's operational area is fully encompassed by PG&E's service territory with TBC's Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. As such TBC personnel are not trained for PSPS specific activities as TBC is not in a position to issue PSPSs. However in the event that PG&E issued a PSPS, PG&E would communicate the event to CAISO and TBC if the PSPS impacted the CAISO transmission network. TBC would respond accordingly per its regular shutdown procedures or emergency procedures as required by the situation. As noted in TBC's response in Section 8.4.2.2, TBC's operations staff are fully trained and qualified to operation and maintain the Trans Bay System which includes facility start up and shutdown. See also Section 8.4.2.1 for TBC's discussion of its Emergency Operations Plan and Section 8.4.5.1 for discussion of its Service Restoration.

9.5 Planning and Allocation of Resources for Service Restoration due to PSPS

Instructions: *In Section 8.4.5.2 of the WMP, the electrical corporation must address planning of appropriate resources (e.g., equipment, specialized workers) and allocation of those resources to assure the safety of the public during service restoration. Thus, in this section, the electrical corporation is only required to provide a cross-reference to Section 8.4.5.2 and any other section of the WMP providing details of resource planning for PSPS implementation.*

TBC has never issued a PSPS. Given that TBC has no distribution system, no distribution or retail customers, and is already substantially hardened against wildfires, TBC reasonably anticipates no future need to issue a PSPS. TBC's operational area is fully encompassed by PG&E's service territory with TBC's Pittsburg converter station, the TBC facility presenting the greatest risk being proximate vegetative fuels, interconnected to the nearby PG&E Pittsburg Substation which has comparable or greater wildfire risk profile. TBC expects that PG&E doctrine regarding PSPS that impacts the PG&E Pittsburg Substation would be the prevailing driver of any PSPS impacts on TBC's operational area. Any PSPS issued by PG&E

that impacted the Pittsburg Substation to the extent that TBC's interconnection would be de-energized would take the Trans Bay System offline. The quantitative description of such a PSPS implementation for TBC is effectively binary, being either online or offline due to a PG&E issued PSPS whereby the Trans Bay System would not be energized and therefore poses minimal to no fire risk to the public. TBC is an ITO and has no retail/direct customers. As noted on page 15 of Energy Safety's ITO Supplement, ITOs do not have end-use customers. Energy Safety notes that ITOs must comply with Public Utilities Code section 8386(c)(16)[56]. However, beyond that, reporting requirements associated with Section 9.5 of the 2023-2025 WMP Technical Guidelines are inapplicable to ITOs.

Based on the foregoing, TBC's WMP does not include Planning and Allocation of Resources for Service Restoration due to PSPS for Section 9.1.5. Instead TBC provides the following information pursuant to Energy Safety's direction on page 15 of Energy Safety's ITO Supplement.

Compliance with Public Utilities Code sections 8386(c)16

The Trans Bay System is a 400MW HVDC consisting of two converter stations connected by an approximate 53-mile submarine cable. No portion of the System is sited in a HFTD. Considering TBC's limited footprint with one transmission asset, TBC has a small staff that oversees its operations, including asset inspection and management, maintenance, system operation and initial emergency response. All TBC maintenance work, including asset inspections, is conducted by dedicated TBC operations personnel, that, by reason of training, experience, and instruction, are qualified to perform the task, with support from qualified contractors as needed. Operations personnel maintain and operate TBC's facilities in accordance with good utility practice, sound engineering judgment, the guidelines as outlined in applicable NERC reliability standards, laws, and regulations. Operators are trained for emergency scenarios and authorized to take precautionary measures such as reduction in power flow or initiating system shutdown when presented with system warnings or instruction from the CAISO or requests from PG&E.

Regarding service restoration after PSPS, as noted in Section 9.2, TBC believes that it would never be in a position to issue a PSPS as it is within the PG&E service territory and PG&E would be the main driver of any PSPS in the TBC's operating area. TBC's emergency preparedness planning and response is conducted in close coordination with CAISO and PG&E in addition to local emergency service providers appropriate to the limited scale and scope of TBC's operations. Relevant emergency operations procedures are routinely provided to CAISO and PG&E upon any update.

Initial response and coordination to any emergency condition begins with the TBC's System Operator who has full authority and responsibility to act autonomously to coordinate and conduct an emergency shutdown of the Trans Bay System. TBC-OP-004 Emergency Operations and TBC-HS-200 Emergency

[56] (16) "A showing that the electrical corporation has an adequately sized and trained workforce to promptly restore service after a major event, taking into account employees of other utilities pursuant to mutual aid agreements and employees of entities that have entered into contracts with the electrical corporation."

Action plan provide clear guidance regarding required responses, communications, staff responsibilities, and key situational awareness capabilities to address the full range of foreseeable emergencies to include all those that could pose a fire risk. See also Section 8.4.5.1 and 8.4.5.2 for TBC's discussion on service restoration.

LESSONS LEARNED

Instructions: *An electrical corporation must use lessons learned to drive continuous improvement in its WMP. Electrical corporations must include lessons learned due to ongoing monitoring and evaluation initiatives, collaboration with other electrical corporations and industry experts, and feedback from* **10** *Energy Safety and other regulators.*

The electrical corporation must provide a summary of new lessons learned since its most recent WMP submission, and any ongoing improvements to address existing lessons learned. This must include a brief narrative describing the new key lessons learned and a status update on any ongoing improvements due to existing lessons learned. The narrative should be limited to two pages.

The electrical corporation must also provide a summary of how it continuously monitors and evaluates its wildfire mitigation efforts to identify lessons learned. This must include various policies, programs, and procedures for incorporating feedback to make improvements.

Lessons learned can be divided into the three main categories: (1) internal monitoring and evaluation, (2) external collaboration with other electrical corporations, and (3) feedback from Energy Safety or other authoritative bodies. The following are examples of specific potential sources of lessons learned:

- *Internal monitoring and evaluation initiatives:*
  - *Tracking of risk events*
  - *Findings from root cause analyses and after-action reviews*
  - *Drills and exercises*
  - *Feedback from community engagement*
  - *PSPS events*
- *Feedback from Energy Safety or other authoritative bodies:*
  - *Areas for continued improvement identified by Energy Safety in the previous WMP evaluation period*
  - *Findings from wildfire investigations*
  - *Findings from Energy Safety Compliance Division assessments*
- *Collaborations with other electrical corporations*

In addition to the above potential sources of lessons learned, the electric corporation must detail lessons learned from any and each catastrophic wildfire ignited by its facilities or equipment in the past 20 years, as listed in Section 5.3.2. The electric corporation must also detail specific mitigation measures implemented as a result of these lessons learned and demonstrate how the mitigation measures are being integrated into the electric corporation's wildfire mitigation strategy.

For each lesson learned, the electrical corporation must identify the following in Table 10-1:

- *Year the lesson learned was identified*

- *Subject of the lesson learned*
- *Specific type or source of lesson learned (as identified in the bullet lists above)*
- *Brief description of the lesson learned that informed improvement to the WMP*
- *Brief description of the proposed improvement to the WMP and which initiative(s) or activity(s) the electrical corporation intends to add or modify*
- *Estimated timeline for implementing the proposed improvement*
- *Reference to the documentation that describes and substantiates the need for improvement including:*
    - *Where relevant, a hyperlinked section and page number in the appendix of the WMP*
    - *Where relevant, the title of the report, date of report, and link to the electrical corporation web page where the report can be downloaded*
    - *If any lessons learned were derived from quantifiable data, visual/graphical representations of these lessons learned in the supporting documentation*

Table 10-1 provides an example of the minimum acceptable level of information.

Table 10-1. Example of Lessons Learned

ID #	***Year of Lesson Learned***	***Subject***	***Type or Source of Lesson Learned***	***Description of Lesson Learned***	***Proposed WMP Improvement***	***Timeline for Implementation***	***Reference***
1	*2020*	*Collaboration with other electrical corporations*	*Risk modeling working group*	*Wildfire risk models need to establish standard weather and vegetative coverage scenarios, as well as extreme-event conditions, for design purposes and long-term contingency planning.*	*Continue ongoing engagement in wildfire risk modeling working group. Commission research at leading research and academic institutes to help inform standard key assumptions as the basis for long-term design of capital improvements and wildfire risk mitigation initiatives, as well as contingency planning for unexpected, extreme events and/or potential changes to environmental settings and other assumptions due to climate change.*	*Ongoing Concept design by 12/2022 Detailed design by 2025 Draft report by 2026 Final report by 2027*	*Weblink to wildfire risk modeling working group and summary report Weblink to electrical corporation's proposed research*

2	*2022*	*Feedback from Energy Safety*	*Area of continuous improvement*	*Fire risk models need updated ignition and consequence data; covered conductor research needs to be provided.*	*Cooperate and share best practices with agencies outside California. Increase efforts to disseminate data and update risk models to include actual ignition and consequence data and incorporation of fire suppression. Distribute benchmarking surveys to understand current state of covered conductor.*	*Operationalized by 12/2023*	*Title of covered conductor analysis report, dated MM/DD/YYYY; title of risk model analysis report, dated MM/DD/YYYY*

TBC's operations consists of a single transmission system in which the main transmission element is a submarine cable, as such many of the substantial and warranted efforts undertaken by utilities whose service territories include distribution customers and encompass wildlands and WUIs are not specifically applicable to TBC. However, TBC has identified that its Pittsburg converter station and connected underground transmission elements are located in a medium density urban area adjacent to a Tier 2 HFTD. TBC's Pittsburg substation infrastructure is also proximate to vegetative fuels. TBC is aware of at least two incidents in the past 5 years where dry conditions and winds have instigated a brush/grassland fire (See Figure TBC 10- 1). In its decision on TBC's 2022 WMP, Energy Safety observed that TBC should evaluate adding a weather station to enhance its weather conditions monitoring capabilities. Although, weather conditions do not have material impact on TBC's operations, TBC took the recommendation as an opportunity to enhance its situational awareness.

Table 10- 1. Lessons Learned

ID #	Year of Lesson Learned	Subject	Type or Source of Lesson Learned	Description of Lesson Learned	Proposed WMP Improvement	Timeline for Implementation	Reference
1	2022	Situational Awareness	OEIS observation	OEIS recommended that TBC evaluate adding a weather station to enhance its situational	None. TBC installed a weather station in Q4 2022 and receives daily seven-day forecast of weather notification and	N/A	N/A

				awareness	wildfire risk index.		

Figure TBC 10- 1. Smoke from Small Brush Fire Near the Converter Station in March 2019 (Copyright © 2019 KGO-TV) #3

CORRECTIVE ACTION PROGRAM

Instructions: In this section, the electrical corporation must describe its corrective action program. The electrical corporation must present a summary description of the relevant portions of its existing procedures.

11 The electrical corporation must report on how it maintains a corrective action program to track formal actions and activities undertaken to:

- Prevent recurrence of risk events
- Address findings from wildfire investigations (both internal and external)
- Address findings from Energy Safety's Compliance Assurance Division (i.e., audits and notices of defect and violation)
- Address areas for continued improvement identified by Energy Safety as part of the WMP evaluation

The electrical corporation must report on how it reviews each improvement area in accordance with its corrective action program. At a minimum, the electrical corporation must:

- **Identify insufficient occurrence and response**: Identify targeted corrective actions for areas where the event occurrence, response, or feature was insufficient.
- **Identify actions to reduce recurrence**: Identify improvement actions (as applicable) to reduce the likelihood of recurrence, improve response/mitigation actions, or improve operational procedures or practices.
- **Track implementation**: Track the improvement action plan and schedule in the electrical corporation's action tracking system.
- **Improve external communication**: For areas where weaknesses were identified in the response of external agencies, develop a communication plan to share the information and conclusion with the responsible agency. The completion of this action and the agency's response must be documented.
- **Integrate lessons learned from across the industry**: Identify applicable generic lessons learned to improve the overall effectiveness of the electrical corporation WMP.
- **Share lessons learned with others**: Identify and communicate any significant generic lessons learned that should be disseminated broadly (i.e., to other electrical corporations and responsible regulatory authorities, such as Energy Safety or CAL FIRE).

The WMP should not include detailed corrective action plans for each risk event, finding, and/or improvement area. However, this documentation must be made available to Energy Safety upon request.

A. **Monitoring and auditing the implementation of the plan.** Per the established roles and responsibilities, TBC's President has overall responsibility for WMP Compliance Assurance to ensure that the WMP obligations are met to include evaluating compliance risk associated with obligations and implementing predictive, detective, and corrective controls to mitigate the compliance risk. The President is directly supported in these endeavors by TBC's Director of Operations – NEET, Environmental Health & Safety (EH&S) Manager and Regulatory and Business (R&B) Manager. These controls are used to identify any deficiencies in WMP implementation.

B. **Identifying and correcting deficiencies in the plan.** TBC's operations and engineering personnel are responsible for implementing WMP in the field and reporting to the Engineering Manager and Operations Manager, who address any WMP deficiencies identified. The Director of Operations – NEET, EH&S and R&B Managers review any changes in the WMP, and annual WMP updates are approved by the TBC President. TBC WMPs filed to date have been approved by the CPUC without conditions, and the CPUC has not identified any deficiencies in TBC's wildfire-related compliance.

C. **Monitoring and auditing the effectiveness of inspections.** The Operations Manager, supported by the EH&S Manager and R&B Manager, monitor and audit inspections conducted by operational staff to ensure sustainment of efforts to identify any potential sources of ignition. The CAISO also conducts an annual audit of TBC's maintenance practices which include inspections.

D. **Ensuring that utility reports in a format that matches across WMPs, Quarterly Reports, Quarterly Advice Letters, and annual compliance assessment.** R&B Manager is responsible for ensuring that TBC timely meets all WMP milestones (including annual WMP updates, quarterly reports, field inspections data, annual Maturity Model updates, responding to requests from the Energy Safety and others) in Energy Safety-specified format. TBC closely monitors all wildfire-related developments and updates released by the Energy Safety to ensure timely and accurate compliance. TBC's President reviews its WMP ahead of submission to Energy Safety.

NOTICES OF VIOLATION AND DEFECT

Instructions: *Within a Notice of Violation (NOV) or Notice of Defect (NOD), Energy Safety directs an electrical corporation to correct a violation or defect within a specific timeline, depending on the risk category of the violation or defect. The electrical corporation has 30 days to respond to the NOV or NOD and provide a plan for corrective action. Following completion of the corrective action, the electrical corporation must provide Energy Safety with documentation validating the resolution or correction of the identified violation or defect. Energy Safety includes the electrical corporation's response and the resolution status of any violations or defects in the summaries it provides to the CPUC.*

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In Table 12-1 of the WMP, the electrical corporation must provide a list of all open violations and defects as of January 1, 2023.

Table 12-1. Example of a List of Open Compliance Violations and Defects

ID	Type	Severity	Date of Notice	Date of Response	Summary Description of Violation/Defect	Estimated Completion Date[1]	Summary Description of Correction
NOD_ES_ATJ_20220101-01	Defect	Minor	1/31/2022	2/21/2022	Vegetation contacting guy wire on poles 123456789 and 987654321	1/31/2023	Vegetation to be removed from guy wires.
NOV_ES_ATJ_20220201-01	Violation	Moderate	3/14/2022	4/8/2022	QDR stated covered conductor installed on pole 123456789, but Energy Safety inspection found no covered conductor installed	5/3/2022	Error in reporting procedure led to inaccurate data in QDR. Procedure has been corrected.

[1] Estimated date for completion of correction of NOV or NOD.

TBC has received no Notice of Violation or Notice of Defect from Energy Safety to date. As a result Table 12- 1 marked "N/A" meaning "Not Applicable".

Table 12- 1. List of Open Compliance Violations and Defects

ID	Type	Severity	Date of Notice	Date of Response	Summary Description of Violation/Defect	Estimated Completion Date	Summary Description of Correction
N/A							

APPENDIX A: DEFINITIONS

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

Terms Defined in Other Codes

Where terms are not defined in these Guidelines and are defined in the Government Code, Public Utilities Code, or California Public Resources Code, such terms have the meanings ascribed to them in those codes.

Terms Not Defined

Where terms are not defined through the methods authorized by this section, such terms have ordinarily accepted meanings such as the context implies.

Definition of Terms

Term	Definition
Access and functional needs population (AFN)	Individuals, including, but not limited to, those who have developmental or intellectual disabilities, physical disabilities, chronic conditions, or injuries; who have limited English proficiency or are non-English speaking; who are older adults, children, or people living in institutionalized settings; or who are low income, homeless, or transportation disadvantaged, including, but not limited to, those who are dependent on public transit or are pregnant. (California Government Code 8593.3(f)(1) and
Asset (utility)	Electric lines, equipment, or supporting hardware.
At-risk species	See "high-risk species."
Benchmarking	A comparison between one electrical corporation's protocols, technologies used, or mitigations implemented, and other electrical corporations' similar endeavors.
Calibration	Adjustment of a set of code input parameters to maximize the resulting agreement of the code calculations with observations in a specific scenario.[57]
Catastrophic wildfire	A fire that caused at least one death, damaged over 500 structures, or burned over 5,000 acres.
Circuit miles	The total length in miles of separate transmission and/or distribution circuits, regardless of the number of conductors used per circuit (i.e., different phases).
Consequence	The adverse effects from an event, considering the hazard

[57] Adapted from T. G. Trucano, L. P. Swiler, T. Igusa, W. L. Oberkampf, and M. Pilch, 2006, "Calibration, validation, and sensitivity analysis: What's what," Reliability Engineering and System Safety, vol. 91, no. 10–11, pp. 1331– 1357.

Term	Definition
	intensity, community exposure, and local vulnerability.
Contact by object ignition likelihood	The likelihood that a non-vegetative object (such as a balloon or vehicle) will contact utility-owned equipment and result in an ignition.
Contact by vegetation ignition likelihood	The likelihood that vegetation will contact utility-owned equipment and result in an ignition.
Contractor	Any individual in the temporary and/or indirect employ of the electrical corporation whose limited hours and/or time-bound term of employment are not considered "full-time" for tax and/or any other purposes.
Critical facilities and infrastructure	Facilities and infrastructure that are essential to public safety and that require additional assistance and advance planning to ensure resiliency during PSPS events. These include the following: Emergency services sector: • Police stations • Fire stations • Emergency operations centers • Public safety answering points (e.g., 9-1-1 emergency services) Government facilities sector: • Schools • Jails and prisons Health care and public health sector: • Public health departments • Medical facilities, including hospitals, skilled nursing facilities, nursing homes, blood banks, health care facilities, dialysis centers, and hospice facilities (excluding doctors' offices and other non-essential medical facilities) Energy sector: • Public and private utility facilities vital to maintaining or restoring normal service, including, but not limited to, interconnected publicly owned electrical corporations and electric cooperatives Water and wastewater systems sector:

Term	Definition
	• Facilities associated with provision of drinking water or processing of wastewater, including facilities that pump, divert, transport, store, treat, and deliver water or wastewater Communications sector: • Communication carrier infrastructure, including selective routers, central offices, head ends, cellular switches, remote terminals, and cellular sites Chemical sector: • Facilities associated with manufacturing, maintaining, or distributing hazardous materials and chemicals (including Category N-Customers as defined in D.01-06- 085) Transportation sector: • Facilities associated with transportation for civilian and military purposes: automotive, rail, aviation, maritime, or major public transportation (D.19-05-042 and D.20-05-051)
Customer hours	Total number of customers, multiplied by average number of hours (e.g., of power outage).
Danger tree	Any tree located on or adjacent to a utility right-of-way or facility that could damage utility facilities should it fall where (1) the tree leans toward the right-of-way, or (2) the tree is defective because of any cause, such as: heart or root rot, shallow roots, excavation, bad crotch, dead or with dead top, deformity, cracks or splits, or any other reason that could result in the tree or main lateral of the tree falling. (California Code of Regulation Title 14 § 895.1)
Data cleaning	Calibration of raw data to remove errors (including typographical and numerical mistakes).
Dead fuel moisture content	Moisture content of dead vegetation, which responds solely to current environmental conditions and is critical in determining fire potential.
Detailed inspection	In accordance with General Order (GO) 165, an inspection where individual pieces of equipment and structures are carefully examined, visually and through routine diagnostic testing, as appropriate, and (if practical and if useful information can be so gathered) opened, and the condition of

Term	Definition
	each is rated and recorded.
Disaster	A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability, and capacity, leading to one or more of the following: human, material, economic, and environmental losses and impacts. The effect of the disaster can be immediate and localized but is often widespread and could last a long time. The effect may test or exceed the capacity of a community or society to cope using its own resources. Therefore, it may require assistance from external sources, which could include neighboring jurisdictions or those at the national or international levels. (United Nations Office for Disaster Risk Reduction [UNDRR].)
Discussion-based exercise	Exercise used to familiarize participants with current plans, policies, agreements, and procedures or to develop new plans, policies, agreements, and procedures. Often includes seminars, workshops, tabletop exercises, and games.
Electrical corporation	Every corporation or person owning, controlling, operating, or managing any electric plant for compensation within California, except where the producer generates electricity on or distributes it through private property solely for its own use or the use of its tenants and not for sale or transmission to others.
Emergency	Any incident, whether natural, technological, or human caused, that requires responsive action to protect life or property but does not result in serious disruption of the functioning of a community or society. (FEMA/UNDRR.)
Enhanced inspection	Inspection whose frequency and thoroughness exceed the requirements of a detailed inspection, particularly if driven by risk calculations.
Equipment ignition likelihood	The likelihood that utility-owned equipment will cause an ignition through either normal operation (such as arcing) or failure.
Exercise	An instrument to train for, assess, practice, and improve performance in prevention, protection, response, and recovery capabilities in a risk-free environment. (FEMA.)
Exposure	The presence of people, infrastructure, livelihoods, environmental services and resources, and other high-value assets in places that could be adversely affected by a hazard.
Fire ecology	A scientific discipline concerned with natural processes

Term	Definition
	involving fire in an ecosystem and its ecological effects, the interactions between fire and the abiotic and biotic components of an ecosystem, and the role of fire as an ecosystem process.
Fire Potential Index (FPI)	Landscape scale index used as a proxy for assessing real-time risk of a wildfire under current and forecasted weather conditions.
Fire season	The time of year when wildfires are most likely for a given geographic region due to historical weather conditions, vegetative characteristics, and impacts of climate change. Each electrical corporation defines the fire season(s) across its service territory based on a recognized fire agency definition for the specific region(s) in California.
Frequency	The anticipated number of occurrences of an event or hazard over time.
Frequent PSPS events	Three or more PSPS events per calendar year per line circuit.
Fuel density	Mass of fuel (vegetation) per area that could combust in a wildfire.
Fuel management	Removal or thinning of vegetation to reduce the potential rate of propagation or intensity of wildfires.
Fuel moisture content	Amount of moisture in a given mass of fuel (vegetation), measured as a percentage of its dry weight.
Full-time employee (FTE)	Any individual in the ongoing and/or direct employ of the electrical corporation whose hours and/or term of employment are considered "full-time" for tax and/or any other purposes.
Game	A simulation of operations that often involves two or more teams, usually in a competitive environment, using rules, data, and procedures designed to depict an actual or assumed real-life situation.
Goals	The electrical corporation's general intentions and ambitions.
GO 95 nonconformance	Condition of a utility asset that does not meet standards established by GO 95.
Grid hardening	Actions (such as equipment upgrades, maintenance, and planning for more resilient infrastructure) taken in response to the risk of undesirable events (such as outages) or undesirable conditions of the electrical system to reduce or mitigate those events and conditions, informed by an assessment of the relevant risk drivers or factors.
Grid topology	General design of an electric grid, whether looped or radial,

Term	Definition
	with consequences for reliability and ability to support PSPS (e.g., ability to deliver electricity from an additional source).
Hazard	A condition, situation, or behavior that presents the potential for harm or damage to people, property, the environment, or other valued resources.3
Hazard tree	See danger tree
High Fire Threat District (HFTD)	Areas of the state designated by the CPUC as having elevated wildfire risk, where each utility must take additional action (per GO 95, GO 165, and GO 166) to mitigate wildfire risk. (D.17-01- 009.)
High Fire Risk Area (HFRA)	Areas that the electrical corporation has deemed at high risk from wildfire, independent of HFTD designation.
Highly rural region	In accordance with 38 CFR 17.701, area with a population of less than seven persons per square mile, as determined by the United States Bureau of the Census. For purposes of the WMP, "area" must be defined as a census tract.
High-risk species	Species of vegetation that (1) have a higher risk of either coming into contact with powerlines or causing an outage or ignition, or (2) are easily ignitable and within close proximity to potential arcing, sparks, and/or other utility equipment thermal failures. The status of species as "high-risk" must be a function of species-specific characteristics, including growth rate; failure rates of limbs, trunk, and/or roots (as compared to other species); height at maturity; flammability; and vulnerability to disease or insects.
High Wind Warning (HWW)	Level of wind risk from weather conditions, as declared by the National Weather Service (NWS). For historical NWS data, refer to the Iowa State University archive of NWS watches/warnings.[58]
HWW overhead (OH) circuit mile day	Sum of OH circuit miles of utility grid subject to a HWW each day within a given time period, calculated as the number of OH circuit miles under a HWW multiplied by the number of days those miles are under said HWW. For example, if 100 OH circuit miles are under a HWW for one day, and 10 of those miles are under the HWW for an additional day, then the total HWW OH circuit mile days would be 110.
Ignition consequence	The total anticipated adverse effects from an ignition at each location in the electrical corporation service territory. This

[58] https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml.

Term	Definition
	considers the likelihood that an ignition will transition into a wildfire (wildfire spread likelihood) and the consequences that the wildfire will have on each community it reaches (wildfire consequence).
Ignition likelihood	The total anticipated annualized number of ignitions resulting from utility-owned assets at each location in the electrical corporation service territory. This considers probabilistic weather conditions, type and age of equipment, and potential contact of vegetation and other objects with utility assets.
Ignition probability	The relative possibility that an ignition will occur, quantified as a number between 0 percent (impossibility) and 100 percent (certainty). The higher the probability of an event, the more certainty there is that the event will occur. (Often informally referred to as likelihood or chance.)
Ignition risk	The total anticipated annualized impacts from ignitions at a specific location. This considers the likelihood that an ignition will occur, the likelihood the ignition will transition into a wildfire, and the potential consequences – considering hazard intensity, exposure potential, and vulnerability – the wildfire will have on each community it reaches.
Impact/consequence of ignition	The effect or outcome of a wildfire ignition upon objectives that may be expressed by terms including, although not limited to, maintaining health and safety, ensuring reliability, and minimizing economic and/or environmental damage.
Incident command system (ICS)	A standardized on-scene emergency management construct. It is specifically designed to provide an integrated organizational structure that reflects the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries. The ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents.
Initiative	Measure or activity, either proposed or in process, designed to reduce the consequences and/or probability of wildfire or PSPS.
Integrated public alert warning system (IPAWS)	System allowing the President to send a message to the American people quickly and simultaneously through multiple communications pathways in a national emergency. IPAWS also is available to United States federal, state, local, territorial, and tribal government officials to alert the public via

Term	Definition
	the Emergency Alert System (EAS), Wireless Emergency Alerts (WEA), National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and other NWS dissemination channels; the internet; existing unique warning systems; and emerging distribution technologies.
Invasive species	A species (1) that is non-native (or alien) to the ecosystem under consideration and (2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health.
Level 1 finding	In accordance with GO 95, an immediate safety and/or reliability risk with high probability for significant impact.
Level 2 finding	In accordance with GO 95, a variable safety and/or reliability risk (non-immediate and with high to low probability for significant impact).
Level 3 finding	In accordance with GO 95, an acceptable safety and/or reliability risk.
Limited English proficiency (LEP) population	Population with limited English working proficiency based on the International Language Roundtable scale.
Line miles	The number of miles of transmission and/or distribution conductors, including the length of each phase and parallel conductor segment.
Live fuel moisture content	Moisture content within living vegetation, which can retain water longer than dead fuel.
Locally relevant	In disaster risk management, generally understood as the scale at which disaster risk strategies and initiatives are considered the most effective at achieving desired outcomes. This tends to be the level closest to impacting residents and communities, reducing existing risks, and building capacity, knowledge, and normative support. Locally relevant scales, conditions, and perspectives depend on the context of application.
Match-drop simulation	Wildfire simulation method forecasting propagation and consequence/impact based on an arbitrary ignition.
Memorandum of Agreement (MOA)	A document of agreement between two or more agencies establishing reciprocal assistance to be provided upon request (and if available from the supplying agency) and laying out the guidelines under which this assistance will operate. It can also be a cooperative document in which parties agree to work together on an agreed-upon project or meet an agreed objective.
Mitigation	Activities to reduce the loss of life and property from natural

Term	Definition
	and/or human-caused disasters by avoiding or lessening the impact of a disaster and providing value to the public by creating safer communities.
Model uncertainty	The amount by which a calculated value might differ from the true value when the input parameters are known (i.e., limitation of the model itself based on assumptions).[59]
Multi-attribute value function (MAVF)	Risk calculation methodology introduced during CPUC's Safety Model Assessment Proceedings (S-MAP) and Risk Assessment and Mitigation Phase (RAMP) proceedings. This methodology is established in D.18-12-014 but may be subject to change pursuant to R.20-07-013.
Mutual aid	Voluntary aid and assistance by the provision of services and facilities, including but not limited to electrical corporations, communication, and transportation. Mutual aid is intended to provide adequate resources, facilities, and other support to electrical corporations whenever their own resources prove inadequate to cope with a given situation.
National Incident Management System (NIMS)	A systematic, proactive approach to guide all levels of government, nongovernment organizations, and the private sector to work together to prevent, protect against, mitigate, respond to, and recover from the effects of incidents. NIMS provides stakeholders across the whole community with the shared vocabulary, systems, and processes to successfully deliver the capabilities described in the National Preparedness System. NIMS provides a consistent foundation for dealing with all incidents, ranging from daily occurrences to incidents requiring a coordinated federal response.
Near miss	Term previously used for an event with probability of ignition (now "Risk event").
Objectives	Specific, measurable, achievable, realistic, and timely outcomes for the overall WMP strategy, or mitigation initiatives and activities that a utility can implement to satisfy the primary goals and subgoals of the WMP program.
Operations-based exercise	Type of exercise that validates plans, policies, agreements, and procedures; clarifies roles and responsibilities; and identifies resource gaps in an operational environment. Often includes drills, functional exercises (FEs), and full-scale exercises (FSEs).

[59] Adapted from SFPE, 2010, "Substantiating a Fire Model for a Given Application," Society of Fire Protection Engineers Engineering Guides.

Term	Definition
Overall utility risk	The comprehensive risk due to both wildfire and PSPS incidents across a utility's territory; the aggregate potential of adverse impacts to people, property, critical infrastructure, or other valued assets in society.
Overall utility risk, ignition risk	See Ignition risk.
Overall utility risk, PSPS risk	See PSPS risk.
Parameter uncertainty	The amount by which a calculated value might differ from the true value based on unknown input parameters. (Adapted from Society of Fire Protection Engineers [SFPE] guidance.)
Patrol inspection	In accordance with GO 165, a simple visual inspection of applicable utility equipment and structures designed to identify obvious structural problems and hazards. Patrol inspections may be carried out in the course of other company business.
Performance metric	A quantifiable measurement that is used by an electrical corporation to indicate the extent to which its WMP is driving performance outcomes.
Population density	Population density is calculated using the American Community Survey (ACS) one-year estimate for the corresponding year or, for years with no such ACS estimate available, the estimate for the immediately preceding year.
Preparedness	A continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response. Within the NIMS, preparedness focuses on planning, procedures and protocols, training and exercises, personnel qualification and certification, and equipment certification.
Priority essential services	Critical first responders, public safety partners, critical facilities and infrastructure, operators of telecommunications infrastructure, and water electrical corporations/agencies.
Property	Private and public property, buildings and structures, infrastructure, and other items of value that may be destroyed by wildfire, including both third-party property and utility assets.
Protective equipment and device settings	The electrical corporation's procedures for adjusting the sensitivity of grid elements to reduce wildfire risk, other than automatic reclosers (such as circuit breakers, switches, etc.). For example, PG&E's "Enhanced Powerline Safety Settings"

Term	Definition
	(EPSS).
PSPS consequence	The total anticipated adverse effects of a PSPS for a community. This considers the PSPS exposure potential and inherent PSPS vulnerabilities of communities at risk.
PSPS event	The period from notification of the first public safety partner of a planned public safety PSPS to re-energization of the final customer.
PSPS exposure potential	The potential physical, social, or economic impact of a PSPS event on people, property, critical infrastructure, livelihoods, health, local economies, and other high-value assets.
PSPS likelihood	The likelihood of a PSPS being required by a utility given a probabilistic set of environmental conditions.
PSPS risk	The total anticipated annualized impacts from a PSPS event at a specific location. This considers the likelihood a PSPS event will be required due to environmental conditions exceeding design conditions and the potential consequences – considering exposure potential and vulnerability – of the PSPS event for each affected community.
Public safety partners	First/emergency responders at the local, state, and federal levels; water, wastewater, and communication service providers; community choice aggregators (CCAs); affected publicly owned electrical corporations/electrical cooperatives; tribal governments; Energy Safety; the Commission; the California Office of Emergency Services; and CAL FIRE.
Red Flag Warning (RFW)	Level of wildfire risk from weather conditions, as declared by the NWS. For historical NWS data, refer to the Iowa State University archive of NWS watches/warnings.[60]
RFW OH circuit mile day	Sum of OH circuit miles of utility grid subject to RFW each day within a given time period, calculated as the number of OH circuit miles under RFW multiplied by the number of days those miles are under said RFW. For example, if 100 OH circuit miles are under RFW for one day, and 10 of those miles are under RFW for an additional day, then the total RFW OH circuit mile days would be 110.
Risk	A measure of the anticipated adverse effects from a hazard considering the consequences and frequency of the hazard occurring.[61]

[60] https://mesonet.agron.iastate.edu/request/gis/watchwarn.phtml.

[61] Adapted from D. Coppola, 2020, "Risk and Vulnerability," Introduction to International Disaster Management, 4th ed.

Term	Definition
Risk component	A part of an electric corporation's risk analysis framework used to determine overall utility risk.
Risk evaluation	The process of comparing the results of a risk analysis with risk criteria to determine whether the risk and/or its magnitude is acceptable or tolerable. (ISO 31000:2009.)
Risk event	An event with probability of ignition, such as wire down, contact with objects, line slap, event with evidence of heat generation, or other event that causes sparking or has the potential to cause ignition. The following all qualify as risk events: • Ignitions • Outages not caused by vegetation • Outages caused by vegetation • Wire-down events • Faults • Other events with potential to cause ignition
Risk management	Systematic application of management policies, procedures, and practices to the tasks of communication, consultation, establishment of context, and identification, analysis, evaluation, treatment, monitoring, and review of risk. (ISO 31000.)
Rule	Section of Public Utilities Code requiring a particular activity or establishing a particular threshold.
Rural region	In accordance with GO 165, area with a population of less than 1,000 persons per square mile, as determined by the U.S. Bureau of the Census.[62] For purposes of the WMP, "area" must be defined as a census tract.
Seminar	An informal discussion, designed to orient participants to new or updated plans, policies, or procedures (e.g., to review a new external communications standard operating procedure).
Sensitivity analysis	Process used to determine the relationships between the uncertainty in the independent variables ("input") used in an analysis and the uncertainty in the resultant dependent variables ("output"). (SFPE guidance.)
Slash	Branches or limbs less than four inches in diameter, and bark and split products debris left on the ground as a result of utility vegetation management. (This definition is consistent with California Public Resources Code section 4525.7.)

[62] https://www.cpuc.ca.gov/gos/GO95/go_95_rule_18.htm

Term	Definition
Span	The space between adjacent supporting poles or structures on a circuit consisting of electric lines and equipment. "Span level" refers to asset-scale granularity.
Tabletop exercise (TTX)	A discussion-based exercise intended to stimulate discussion of various issues regarding a hypothetical situation. Tabletop exercises can be used to assess plans, policies, and procedures or to assess types of systems needed to guide the prevention of, response to, or recovery from a defined incident.
Target	A forward-looking, quantifiable measurement of work to which an electrical corporation commits to in its WMP. Electrical corporations will show progress toward completing targets in subsequent reports, including QDRs and WMP Updates.
Trees with strike potential	Trees that could either "fall in" to a power line or have branches detach and "fly in" to contact a power line in high-wind conditions.
Uncertainty	The amount by which an observed or calculated value might differ from the true value. For an observed value, the difference is "experimental uncertainty"; for a calculated value, it is "model" or "parameter uncertainty." (Adapted from SFPE guidance.)
Urban region	In accordance with GO 165, area with a population of more than 1,000 persons per square mile, as determined by the U.S. Bureau of the Census. For purposes of the WMP, "area" must be defined as a census tract.
Utility-related ignition	See reportable ignition.
Validation	Process of determining the degree to which a calculation method accurately represents the real world from the perspective of the intended uses of the calculation method without modifying input parameters based on observations in a specific scenario. (Adapted from ASTM E 1355.)
Vegetation management (VM)	Trimming and removal of trees and other vegetation at risk of contact with electric equipment.
Verification	Process to ensure that a model is working as designed, that is, that the equations are being properly solved. Verification is essentially a check of the mathematics. (SFPE guidance.)
Vulnerability	The propensity or predisposition of a community to be adversely affected by a hazard, including the characteristics of a person, group, or service and their situation that influences their capacity to anticipate, cope with, resist, and recover from the adverse effects of a hazard.

Term	Definition
Wildfire consequence	The total anticipated adverse effects from a wildfire on a community that is reached. This considers the wildfire hazard intensity, the wildfire exposure potential, and the inherent wildfire vulnerabilities of communities at risk.
Wildfire exposure potential	The potential physical, social, or economic impact of wildfire on people, property, critical infrastructure, livelihoods, health, environmental services, local economies, cultural/historical resources, and other high-value assets. This may include direct or indirect impacts, as well as short- and long-term impacts.
Wildfire intensity	The potential intensity of a wildfire at a specific location within the service territory given a probabilistic set of weather profiles, vegetation, and topography.
Wildfire mitigation strategy	Overview of the key mitigation initiatives at enterprise level and component level across the electrical corporation's service territory, including interim strategies where long-term mitigation initiatives have long implementation timelines. This includes a description of the enterprise-level monitoring and evaluation strategy for assessing overall effectiveness of the WMP.
Wildfire risk	See Ignition risk.
Wildfire spread likelihood	The likelihood that a fire with a nearby but unknown ignition point will transition into a wildfire and will spread to a location in the service territory based on a probabilistic set of weather profiles, vegetation, and topography.
Wildland-urban interface (WUI)	The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels (National Wildfire Coordinating Group). Enforcement agencies also designate the WUI as the area at significant risk from wildfires, established pursuant to Title 24, Part 2, Chapter 7A.
Wire down	Instance where an electric transmission or distribution conductor is broken and falls from its intended position to rest on the ground or a foreign object.
Work order	A prescription for asset or vegetation management activities resulting from asset or vegetation management inspection findings.
Workshop	Discussion that resembles a seminar but is employed to build specific products, such as a draft plan or policy (e.g., a multi-year training and exercise plan).

Definitions of Initiatives by Category

Category	Section #	Initiative	Definition
Overview of the Service Territory	5.4.5	Environmental compliance and permitting	Development and implementation of process and procedures to ensure compliance with applicable environmental laws, regulations, and permitting related to the implementation of the WMP.
Risk Methodology and Assessment	6	Risk Methodology and Assessment	Development and use of tools and processes to assess the risk of wildfire and PSPS across an electrical corporation's service territory.
Wildfire Mitigation Strategy Development	7	Wildfire Mitigation Strategy Development	Development and use of processes for deciding on a portfolio of mitigation initiatives to achieve maximum feasible risk reduction and that meet the goals of the WMP.
Grid Design, Operations, and Maintenance	8.1.2.1	Covered conductor installation	Installation of covered or insulated conductors to replace standard bare or unprotected conductors (defined in accordance with GO 95 as supply conductors, including but not limited to lead wires, not enclosed in a grounded metal pole or not covered by: a "suitable protective covering" (in accordance with Rule 22.8), grounded metal conduit, or grounded metal sheath or shield). In accordance with GO 95, conductor is defined as a material suitable for: (1) carrying electric current, usually in the form of a wire, cable or bus bar, or (2) transmitting light in the case of fiber optics; insulated conductors as those which are surrounded by an insulating material (in accordance with Rule 21.6), the dielectric strength of which is sufficient to withstand the maximum difference of potential at normal operating voltages of the

			circuit without breakdown or puncture; and suitable protective covering as a covering of wood or other non-conductive material having the electrical insulating efficiency (12kV/in. dry) and impact strength (20ft.-lbs) of 1.5 inches of redwood or other material meeting the requirements of Rule 22.8-A, 22.8-B, 22.8-C or 22.8-D.
Grid Design, Operations, and Maintenance	8.1.2.2	Undergrounding of electric lines and/or equipment	Actions taken to convert overhead electric lines and/or equipment to underground electric lines and/or equipment (i.e., located underground and in accordance with GO 128).
Grid Design, Operations, and Maintenance	8.1.2.3	Distribution pole replacements and reinforcements	Remediation, adjustments, or installations of new equipment to improve or replace existing distribution poles (i.e., those supporting lines under 65kV), including with equipment such as composite poles manufactured with materials reduce ignition probability by increasing pole lifespan and resilience against failure from object contact and other events.
Grid Design, Operations, and Maintenance	8.1.2.4	Transmission pole/tower replacements and reinforcements	Remediation, adjustments, or installations of new equipment to improve or replace existing transmission towers (e.g., structures such as lattice steel towers or tubular steel poles that support lines at or above 65kV).
Grid Design, Operations, and Maintenance	8.1.2.5	Traditional overhead hardening	Maintenance, repair, and replacement of capacitors, circuit breakers, cross-arms, transformers, fuses, and connectors (e.g., hot line clamps) with the intention of minimizing the risk of ignition.
Grid Design,	8.1.2.6	Emerging grid	Development, deployment, and

Operations, and Maintenance		hardening technology installations and pilots	piloting of novel grid hardening technology.
Grid Design, Operations, and Maintenance	8.1.2.7	Microgrids	Development and deployment of microgrids that may reduce the risk of ignition, risk from PSPS, and wildfire consequence. “Microgrid” is defined by Public Utilities Code section 8370(d).
Grid Design, Operations, and Maintenance	8.1.2.8	Installation of system automation equipment	Installation of electric equipment that increases the ability of the electrical corporation to automate system operation and monitoring, including equipment that can be adjusted remotely such as automatic reclosers (switching devices designed to detect and interrupt momentary faults that can reclose automatically and detect if a fault remains, remaining open if so).
Grid Design, Operations, and Maintenance	8.1.2.9	Line removals (in HFTD)	Removal of overhead lines to minimize the risk of ignition due to the design, location, or configuration of electric equipment in HFTDs.
Grid Design, Operations, and Maintenance	8.1.2.10	Other grid topology improvements to minimize risk of ignitions	Actions taken to minimize the risk of ignition due to the design, location, or configuration of electric equipment in HFTDs not covered by another initiative.
Grid Design, Operations, and Maintenance	8.1.2.11	Other grid topology improvements to mitigate or reduce PSPS events	Actions taken to mitigate or reduce PSPS events in terms of geographic scope and number of customers affected not covered by another initiative.
Grid Design, Operations, and Maintenance	8.1.2.12	Other technologies and systems not listed above	Other grid design and system hardening actions which the electrical corporation takes to reduce its ignition and PSPS risk not otherwise covered by other

			initiatives in this section.
Grid Design, Operations, and Maintenance	8.1.3.1	Asset inspections	Inspections of overhead electric transmission lines, equipment, and right-of-way.
Grid Design, Operations, and Maintenance	8.1.4	Equipment maintenance and repair	Remediation, adjustments, or installations of new equipment to improve or replace existing connector equipment, such as hotline clamps.
Grid Design, Operations, and Maintenance	8.1.5	Asset management and inspection enterprise system(s)	Operation of and support for centralized asset management and inspection enterprise system(s) updated based upon inspection results and activities such as hardening, maintenance, and remedial work.
Grid Design, Operations, and Maintenance	8.1.6	Quality assurance / quality control	Establishment and function of audit process to manage and confirm work completed by employees or contractors, including packaging QA/QC information for input to decision-making and related integrated workforce management processes.
Grid Design, Operations, and Maintenance	8.1.7	Open work orders	Actions taken to manage the electrical corporation's open work orders resulting from inspections that prescribe asset management activities.
Grid Design, Operations, and Maintenance	8.1.8.1	Equipment Settings to Reduce Wildfire Risk	The electrical corporation's procedures for adjusting the sensitivity of grid elements to reduce wildfire risk.
Grid Design, Operations, and Maintenance	8.1.8.2	Grid Response Procedures and Notifications	The electrical corporation's procedures it uses to respond to faults, ignitions, or other issues detected on its grid that may result in a wildfire.
Grid Design, Operations, and Maintenance	8.1.8.3	Personnel Work Procedures and Training in	Work activity guidelines that designate what type of work can be performed during operating

		Conditions of Elevated Fire Risk	conditions of different levels of wildfire risk. Training for personnel on these guidelines and the procedures they prescribe, from normal operating procedures to increased mitigation measures to constraints on work performed.
Grid Design, Operations, and Maintenance	8.1.9	Workforce Planning	Programs to ensure that the electrical corporation has qualified asset personnel and to ensure that both employees and contractors tasked with asset management responsibilities are adequately trained to perform relevant work.
Vegetation Management and Inspection	8.2.2.1	Vegetation inspections	Inspections of vegetation around and adjacent to electrical facilities and equipment that may be hazardous by growing, blowing, or falling into electrical facilities or equipment.
Vegetation Management and Inspection	8.2.3.1	Pole clearing	Plan and execution of vegetation removal around poles per Public Resources Code section 4292 and outside the requirements of Public Resources Code section 4292 (e.g., pole clearing performed outside of the State Responsibility Area).
Vegetation Management and Inspection	8.2.3.2	Wood and slash management	Actions taken to manage all downed wood and “slash” generated from vegetation management activities.
Vegetation Management and Inspection	8.2.3.3	Clearance	Actions taken after inspection to ensure that vegetation does not encroach upon electrical equipment and facilities, such as tree trimming.
Vegetation Management and Inspection	8.2.3.4	Fall-in mitigation	Actions taken to identify and remove or otherwise remediate trees that pose a high risk of failure
Vegetation Management and Inspection	8.2.3.5	Substation defensible space	Actions taken to reduce ignition probability and wildfire consequence due to contact with substation equipment.
Vegetation	8.2.3.6	High-risk	Actions taken to reduce the ignition

Management and Inspection		species	probability and wildfire consequence attributable to high- risk species of vegetation.
Vegetation Management and Inspection	8.2.3.7	Fire-resilient rights-of-way	Actions taken to promote vegetation communities that are sustainable, fire-resilient, and compatible with the use of the land as an electrical corporation right-of- way.
Vegetation Management and Inspection	8.2.3.8	Emergency response vegetation management	Planning and execution of vegetation activities in response to emergency situations including weather conditions that indicate an elevated fire threat and post- wildfire service restoration.
Vegetation Management and Inspection	8.2.4	Vegetation management enterprise system	Operation of and support for centralized vegetation management and inspection enterprise system(s) updated based upon inspection results and activities such as hardening, maintenance, and remedial work.
Vegetation Management and Inspection	8.2.5	Quality assurance / quality control	Establishment and function of audit process to manage and confirm work completed by employees or contractors, including packaging QA/QC information for input to decision-making and related integrated workforce management processes.
Vegetation Management and Inspection	8.2.6	Open work orders	Actions taken to manage the electrical corporation's open work orders resulting from inspections that prescribe vegetation management activities.
Vegetation Management and Inspection	8.2.7	Workforce planning	Programs to ensure that the electrical corporation has qualified vegetation management personnel and to ensure that both employees and contractors tasked with vegetation management responsibilities are adequately

			trained to perform relevant work.
Situational Awareness and Forecasting	8.3.2	Environmental monitoring systems	Development and deployment of systems which measure environmental characteristics, such as fuel moisture, air temperature, and velocity.
Situational Awareness and Forecasting	8.3.3	Grid monitoring systems	Development and deployment of systems that checks the operational conditions of electrical facilities and equipment and detects such things as faults, failures, and recloser operations.
Situational Awareness and Forecasting	8.3.4	Ignition detection systems	Development and deployment of systems which discover or identify the presence or existence of an ignition, such as cameras.
Situational Awareness and Forecasting	8.3.5	Weather forecasting	Development methodology for forecast of weather conditions relevant to electrical corporation operations, forecasting weather conditions and conducting analysis to incorporate into utility decision-making, learning and updates to reduce false positives and false negatives of forecast PSPS conditions.
Situational Awareness and Forecasting	8.3.6	Fire potential index	Calculation and application of a landscape scale index used as a proxy for assessing real-time risk of a wildfire under current and forecasted weather conditions.
Emergency Preparedness	8.4.2	Emergency preparedness plan	Development and integration of wildfire- and PSPS-specific emergency strategies, practices, policies, and procedures into the electrical corporation's overall emergency plan based on the minimum standards described in GO 166.
Emergency Preparedness	8.4.3	External collaboration	Actions taken to coordinate wildfire and PSPS emergency preparedness

		and coordination	with relevant public safety partners including the state, cities, counties, and tribes.
Emergency Preparedness	8.4.4	Public emergency communication strategy	Development and integration of a comprehensive communication strategy to inform essential customers and other stakeholder groups of wildfires, outages due to wildfires, and PSPS and service restoration, as required by Public Utilities Code section 768.6.
Emergency Preparedness	8.4.5	Preparedness and planning for service restoration	Development and integration of the electrical corporation's plan to restore service after an outage due to a wildfire or PSPS event.
Emergency Preparedness	8.4.6	Customer support in wildfire and PSPS emergencies	Development and deployment of programs, systems, and protocols to support residential and non-residential customers in wildfire emergencies and PSPS events.
Community Outreach and Engagement	8.5.2	Public outreach and education awareness program	Development and deployment of public outreach and education awareness program(s) for wildfires; outages due to wildfires, PSPS events, and protective equipment and device settings; service restoration before, during, and after the incidents and vegetation management.
Community Outreach and Engagement	8.5.3	Engagement with access and functional needs populations	Actions taken understand, evaluate, design, and implement wildfire and PSPS risk mitigation strategies, policies, and procedures specific to access and functional needs customers.
Community Outreach and Engagement	8.5.4	Collaboration on local wildfire mitigation planning	Development and integration of plans, programs, and/or policies for collaborating with communities on local wildfire mitigation planning, such as wildfire safety elements in general plans, community wildfire

			protection plans, and local multi-hazard mitigation plans.
Community Outreach and Engagement	8.5.5	Best practice sharing with other utilities	Development and integration of an electrical corporation's policy for sharing best practices and collaborating with other electrical corporations on technical and programmatic aspects of its WMP program.

APPENDIX B: SUPPORTING DOCUMENTATION FOR RISK METHODOLOGY AND ASSESSMENT

Instructions: *Note: As part of its 2023-2025 WMP, the electrical corporation is required to provide the "Summary Documentation" as defined by this appendix. For all other requirements in this appendix, the electrical corporation must be readily able to provide the defined documentation in response to a data request by Energy Safety or designated stakeholders.*
The risk modeling and assessment in the main body of these Guidelines and electrical corporation's WMP are focused on providing a streamlined overview of the electrical corporation risk framework and key findings from the assessment necessary to understand the wildfire mitigation strategy presented in Section 7.

TBC is an ITO that has transmission-only assets and does not have a service territory or end-use customers. As noted on page 8 of Energy Safety's ITO Supplement, ITOs have significantly less infrastructure than large IOUs and SMJUs and do not have end-use customers. Energy Safety notes that the level of detail required by Section 6 of the 2023-2025 WMP Guidelines regarding risk modeling is not required for ITOs. Instead ITOs must describe their own methods to determine risk. As further noted on page 9 of Energy Safety's ITO Supplement, ITOs do not have service areas. Energy Safety, therefore, modified the ITO reporting requirement so state that ITOs do not have to use modeling to develop their wildfire mitigation strategy, however, they must describe their wildfire mitigation strategy, including the process they use to select mitigations in Section 7 of the WMP.

As noted in Section 7, to inform appropriate wildfire hardening initiatives, TBC uses the FMEA process and support from third-party site wildfire assessments. The FMEA considers the potential failures from each TBC Facility component and assesses and prioritizes the potential risk, along with providing potential mitigations. A third-party wildfire assessment was utilized to supplement the initial FMEA and provides independent evaluation/assessment of wildfire risk at the facility and opportunities for risk mitigation. TBC utilized the combined information to target mitigation initiatives that provided meaningful impact to reducing the likelihood of utility equipment instigating a fire and the promulgation and impact of a fire if one occurred. TBC updates the FMEA annually to ensure controls and processes are functioning as intended, review potential failure modes and effects of any newly added or changed equipment, and assess new opportunities for risk reduction driven by new technologies, best practices, and experience of affiliates, among other things. Based on the foregoing and owning to the limited size, scope and scale of TBC's operations and that fact that TBC does not operate in a HFTD, TBC has no supporting documentation for risk modeling as it does not utilize risk modeling to develop its wildfire mitigation strategy.

APPENDIX C: ADDITIONAL MAPS

Instructions: *In this appendix, the electrical corporation must provide the additional maps required by the Guidelines. As stated in the General Directions, if any additional maps needed for clarity (e.g., the scale is insufficiently large to show useful detail), the electrical corporation must either provide those additional maps in this appendix or host applicable geospatial layers on a publicly accessible web viewer. If the electrical corporation chooses the latter option, it must refer to the specific web address in appropriate places throughout its WMP. Additionally, the electrical corporation must host these layers until the submission of its 2026-2028 WMP or until otherwise directed by Energy Safety. The electrical corporation may not modify these publicly available layers without cause or without notifying Energy Safety.*

Below is a list of the WMP Guidelines sections which require additional maps:

Section Number	***Section Title***
5.3.2	*Fire History*
5.4.3.3	*Social Vulnerability and Exposure to Electrical Corporation Wildfire Risk*
6.4.1.1	*Geospatial Maps of Top Risk Areas within the HFRA*

TBC has no additional maps to provide. TBC entered commercial operations in November 2010. TBC has never had an ignited catastrophic fire, or any fire, instigated by its utility equipment. TBC also does not have any direct or retail customers and does not maintain any assets in an HFTD.

APPENDIX D: AREAS FOR CONTINUED IMPROVEMENTS

Instructions: *In this appendix, the electrical corporation must provide responses to its areas for continued improvement as identified in the Decisions on the 2022 WMP Updates in the following format:*

Code and Title:
Description:
Required Progress:
[Electrical Corporation] Response:

Energy did not find any areas for continued improvement in its evaluation of TBC's 2022 WMP update. As a result there are no areas of continued improvement to identify in this Appendix D.

APPENDIX E: REFERENCED REGULATIONS, CODES AND STANDARDS

Instructions: In this appendix, the electrical corporation must provide in tabulated format a list of referenced codes, regulations, and standards. An example follows.

NAME OF REGULATION, CODE, OR STANDARD	***BRIEF DESCRIPTION***
PUBLIC UTILITIES CODE SECTION 768.6	*STATUTE RELATED TO EMERGENCY AND DISASTER PREPAREDNESS PLANS*
GENERAL ORDER 166	*STANDARDS FOR OPERATION, RELIABILITY, AND SAFETY DURING EMERGENCIES AND DISASTERS*
CALIFORNIA STANDARDIZED EMERGENCY MANAGEMENT SYSTEMS (SEMS)	
NATIONAL INCIDENT MANAGEMENT SYSTEM (NIMS)	
GOVERNMENT CODE SECTION 8593.3	

Table E- 1. Referenced Regulations, Codes and Standards

NAME OF REGULATION, CODE, OR STANDARD	BRIEF DESCRIPTION
PUBLIC UTILITIES CODE SECTION 8386	STATUTE RELATED TO WILDFIRE MITIGATION REQUIREMENTS FOR ELECTRIC UTILITIES
GENERAL ORDER 95	RULES FOR OVERHEAD ELECTRIC LINE CONSTRUCTION
PUBLIC UTILITIES CODE SECTION 768.6	STATUTE RELATED TO EMERGENCY AND DISASTER PREPAREDNESS PLANS
CAL/OSHA - TITLE 8 REGULATIONS, CHAPTER 4, SUBCHAPTER 7, GROUP 1, ARTICLE 2, §3220	STATUTE RELATED TO REQUIREMENTS FOR EMERGENCY ACTION PLANS
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 850 MANUAL	RECOMMENDED PRATICES FOR FIRE PROTECTION FOR ELECTRIC GENERATING PLANTS AND HIGH VOLTAGE DIRECT CURRENT CONVERTER STATIONS