MERCED IRRIGATION DISTRICT

(MEID)

2023 WILDFIRE MITIGATION PLAN

INDEPENDENT EVALUATION REPORT

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DISCLAIMER

California Public Utilities Code (PUC) § 8387 mandates that local publicly owned electric utilities or electrical cooperatives (herein POU) shall prepare a Wildfire Mitigation Plan (WMP or Plan). Additionally, POUs are required to contract with a qualified independent evaluator (IE) with experience to assess the comprehensiveness of its WMP.

The Merced Irrigation District (MEID) has requested Grid Subject Matter Experts ("GridSME") to conduct a review and provide an independent evaluation report of the MEID 2023 WMP to ensure it meets the requirements of PUC § 8387. GridSME's IE review and assessment is based only on MEID's 2023 WMP and evaluates only the comprehensiveness of the Plan as it is written.

The information provided in this report represents GridSME's IE analysis based only on the information available at the time the review was conducted. GridSME is not responsible for the success or failure of MEID's projects nor any potential ignition resulting therefrom. GridSME makes no representations or warranties expressed or implied regarding the reliability or thoroughness of MEID's WMP. Recipients of the IE report assume all liabilities incurred by themselves, or third parties, resulting from their reliance on the report, or the data, information, and/or assessment contained therein.

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1.0 Statutory Requirements of the Wildfire Mitigation Plan

PUC § 8387 requires “Each local publicly owned electric utility and electrical cooperative (herein a POU) shall construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of wildfire posed by those electrical lines and equipment.”

PUC § 8387 requires that after January 1, 2020, each publicly owned electric utility and electrical cooperative shall prepare a wildfire mitigation plan (WMP or Plan) annually and shall submit the plan to the California Wildfire Safety Advisory Board (WSAB). Each POU shall update its plan annually and submit the update to the WSAB by July 1 of each year. At least once every three years, the submission shall be a comprehensive revision of the plan.

Prior California legislation, codified in PUC § 8387, established the WSAB. The WSAB consists of an appointed seven-member panel which serves in an advisory role within the California Office of Energy Infrastructure Safety (OEIS). PUC § 326.2(C) requires the WSAB to “Review and provide comments and advisory opinions to each local publicly owned electric utility and electrical cooperative regarding the content and sufficiency of its wildfire mitigation plan and recommendations on how to mitigate wildfire risk.”

PUC § 8387(3)(c) states that each POU “shall contract with a qualified independent evaluator (IE) with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The IE shall issue a report that shall be made available on the internet website of the local publicly owned electric utility or electrical cooperative and shall present the report at a public meeting of the local publicly owned electric utility’s or electrical cooperative’s governing board.”

The MEID has filed its WMP each year since 2020 and now submits its 2023 WMP to the WSAB.

2.0 Independent Evaluator Qualifications

In accordance with PUC § 8387(3)(c) MEID engaged the services of GridSME to conduct an independent evaluation of their 2023 WMP to review and assess the comprehensiveness of their Plan as written. GridSME is a consulting firm of about 100 power industry professionals who offer its clients a diverse range of solutions in areas such as engineering, interconnection, compliance, cybersecurity, and operations to help guide them throughout their projects' entire lifecycle. The GridSME team brings over 100 years of combined electric utility system operations experience and are qualified to review and assess the comprehensiveness of MEID's 2023 WMP. The GridSME project team lead is a former investor-owned utility executive with over 40 years of experience in electric system operations. The GridSME project lead also had a significant role in developing and executing wildfire mitigation programs at the utility from 2008 until his retirement in 2017. Since 2020, the GridSME team has provided IE services for six different POUs.

3.0 Independent Evaluation Methodology

GridSME's review and evaluation of the MEID 2023 Plan consisted of reviewing the written Plan and providing comments and recommendations for MEID's consideration prior to MEID finalizing their 2023 Plan. GridSME's final review and evaluation of MEID's 2023 WMP assesses the Plan's comprehensiveness to ensure it satisfies each of the required 17 elements of PUC § 8387, and considers the guidance and recommendations issued by the WSAB in previous advisory opinions. Per the WSAB Guidance Advisory Opinion for the 2023 WMP of POUs,[1] they state that their reviews are performed in the context of the following elements:

Figure 1: WSAB List of Statutory Responsibilities

A	Staff responsibilities	G	Community notification	L	Identify enterprise-wide risk
B	General objectives	H	Vegetation management	M	Restoration of service
C	Program descriptions	I	Infrastructure inspections	N(i)	Monitoring & auditing of WMPs
D	Evaluation metrics	J(i)	Grid design, construction & operation risks	N(ii)	Identifying and correcting deficiencies
E	Lessons learned, metrics application	J(ii)	Vegetation, topographic, & climate risks	N(iii)	Monitoring asset inspections
F	Protocols for reclosers, de-energization, and PSPS mitigation	K	Identification and expansion of higher wildfire threat areas		

[1] https://energysafety.ca.gov/what-we-do/wildfire-safety-advisory-board/publicly-owned-utility-and-electrical-cooperative-wildfire-mitigation-plans/

4.0 Introduction

Over the past several years the threat of catastrophic wildfires has significantly increased, not only in the state of California, but the entire western United States. These fires are fueled in part by changing weather patterns that have contributed to extended drought conditions, hotter temperatures, and more intense windstorms. If an ignition occurs during these weather conditions, it could result in a catastrophic wildfire. Although there are many different sources of ignition for wildland fires these type of weather events can also increase the threat to utility infrastructure which could result in a risk event (fault) that could be an ignition source. Origin and Cause investigations by fire authorities have concluded that utility electrical infrastructure has previously been the origin or contributing source for the ignition of a fire.

MEID does not have any electric facilities in or abutting the HFTD. MEID owns, maintains, and operates 535 miles of distribution lines of which 465 miles are of underground construction. MEID has concluded that their electrical assets pose no risk for being the cause of a catastrophic wildfire. Additionally, MEID customers are not at risk of a pre-emptive de-energization initiated by them or any of their neighboring utilities. Their 2023 WMP is focused on describing programs and initiatives undertaken by the company to construct, maintain, and operate its electrical lines and equipment in a manner that will maintain or improve overall system reliability and resiliency.

5.0 MEID Company Overview

MEID is a POU governed as a special district by a locally elected five-member board of directors under the provisions of the California Water Code. Between 1919 and 1996, MEID expanded its water storage and delivery infrastructure, developed hydroelectric power generation capabilities, and implemented various conservation and water management initiatives to support agricultural and community needs. MEID started selling retail electric power to its first customer in 1996 and has now grown to provide safe and reliable electric power to approximately 13,000 customer accounts (about 185,000 people) in the communities of Merced, Livingston, Winton, and Atwater.

MEID owns and operates transmission lines, distribution lines, substations, and hydro generation assets. All MEID electrical facilities are located outside the HFTD designated in the CPUC Fire Threat Map (see Figure 3 in the WMP MEID). Additionally, all the MEID electrical assets are located within a Local Responsibility Area (LRA) which are areas of the state in which the financial responsibility of preventing and suppressing fires is the primary responsibility of a city, county, city and county, or district.

6.0 Independent Evaluation

MEID conducted a comprehensive review of its WMP and submits its 2023-2025 WMP as required by statute. MEID's 2023 WMP builds upon the successes and learnings from the 2020-2022 WMP to maintain compliance with the seventeen (17) elements required in PUC § 8387. The MEID also considered recommendations for the WMP provided in the WSAB Guidance Advisory Opinions, and recommendations by the IE for inclusion in the 2023 WMP.

MEID has no transmission or distribution facilities within the CPUC defined HFTD. Their overarching goal is to provide safe, reliable, resilient, and economic electric service to all its customers in the communities they serve. In order to meet this goal, MEID constructs, maintains, and operates its electrical lines and equipment to provide its customers with reliable and resilient service.

This report provides a high-level assessment of MEID efforts to comply with each of the elements of PUC § 8387 and a short description of the assessment by the IE. Each of the 17 requirements (elements) of PUC § 8387 are listed separately below with a high-level narrative by the IE of the plan assessment, the comprehensiveness of the plan, and recommendations, if any, for inclusion in future Plan updates.

6.1 PUC § 8387(b)(2)(A)

Requirement:

An accounting of the responsibilities of persons responsible for executing the plan.

Assessment:

WMP Section 4.1, MEID Organizational Chart and Specific Responsibilities,

This section details MEID's governance for the development, approval, and implementation of this Plan. The MEID Board of Directors (BOD) has responsibility for Plan approval. The MEID General Manager has overall accountability for the development and implementation of the Plan and delegates responsibilities to section leadership who have specific responsibilities for the various wildfire mitigation programs such as vegetation management, substation inspections, line inspections, line construction, etc. (see WMP Table 3).

Comments / Recommendations:

The MEID organization chart and the Roles and Responsibilities table are well defined. MEID has no assets within the HFTD; however, they list responsibilities for activities that improve overall grid reliability and resiliency.

6.2 PUC § 8387 (b)(2)(B)

Requirement:

The objectives of the wildfire mitigation plan.

Assessment:

WMP Section 3. Objectives of the Wildfire Mitigation Plan,

MEID has no transmission or distribution facilities within the CPUC defined HFTD. Their overarching goal is to provide safe, reliable, resilient, and economic electric service to all its customers in the communities they serve. To achieve this goal, MEID designs, constructs, maintains, and operates its electrical lines and equipment and in accordance with local, state, and federal standards and industry best practices.

Comments / Recommendations:

The 2023-2025 WMP continues to build upon the successes and learnings of past WMP's to increase overall system reliability and resiliency.

6.3 PUC § 8387 (b)(2)(C)

Requirement:

A description of the preventative strategies and programs to be adopted by the local publicly owned electric utility or electrical cooperative to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.

Assessment:

WMP Section 6, Wildfire Preventative Strategies,

MEID has no assets in the HFTD where increased maintenance or inspections are required. MEID complies with local, state, and federal standards for the design, construction, maintenance, and operation of their system-wide electrical assets.

MEID has reviewed relevant sources of data showing wildfire-related climate change impacts in California and specifically in Merced County through the Cal-Adapt enterprise collaboration. This review included data on forecasted acres burned and wildfire probability,[2] as well as extreme heat days,[3] and extended drought.[4] MEID has determined that MEID's service territory will remain a low risk for wildfires even when considering changes associated with wildfire risk. Furthermore, no part of MEID's service territory will be disproportionately impacted by wildfire risks associated with climate change in comparison to the other areas of MEID's service territory.

Comments / Recommendations:

The IE recommends MEID continue to monitor emerging climate change impacts within their service territory and evaluate potential risks to their assets as new information becomes available.

6.4 PUC § 8387 (b)(2)(D)

Requirement:

A description of the metrics the local publicly owned electric utility or electrical cooperative plans to use to evaluate the wildfire mitigation plan's performance and the assumptions that underlie the use of those metrics.

Assessment:

WMP Section 8.1, Evaluating Performance of the Plan,

For the 2020-2022 WMP cycle, MEID tracked two metrics for both distribution and transmission assets. They tracked (1) vegetation contact, and (2) wire down, to monitor the performance and effectiveness of the MEID Plan. MEID did not report any incidents

[2] The CalAdapt Wildfire Tool is available at https://cal-adapt.org/tools/wildfire.
[3] The CalAdapt Extreme Heat Days Tool is available at https://cal-adapt.org/tools/extreme-heat.
[4] The CalAdapt Extended Drought Tool is available at https://cal-adapt.org/tools/extended-drought.

for 2020-2022. MEID does not have any assets in the HFTD, but they track these metrics for all assets within their service territory.

Comments / Recommendations:

Tracking these metrics for all MEID assets will help identify areas of improvement to support the MEID goal of improving system reliability and resiliency.

6.5 PUC § 8387 (b)(2)(E)

Requirement:

A discussion of how the application of previously identified metrics to previous wildfire mitigation plan performances has informed the wildfire mitigation plan.

Assessment:

WMP Sections 8.4 and 8.5, Impact of Metrics on the Plan, and Monitoring and Auditing the Plan

In the 2020 WMP MEID identified two metrics that would be tracked, (1) vegetation contact, and (2) wire down. For years 2020-2022 MEID reports zero incidents for each year which demonstrates that inspection and maintenance programs are satisfactory.

Comments / Recommendations:

MEID has no assets in the HFTD and over 85% of their distribution system is of underground construction which significantly reduces the risk of wire down incidents.

The IE encourages MEID to consider adding additional metrics that would inform emerging trends and system reliability improvements.

6.6 PUC § 8387(b)(2)(F)

Requirement:

Protocols for disabling reclosers and de-energizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.

Assessment:

WMP Section 6.5, Recloser Policy,

MEID does not have any electrical assets in the HFTD and has no formal policy to disable reclosers during fire weather conditions, such as when a Red Flag Warning is in effect. They do monitor system conditions and will turn off reclosing based on real-time information for events that could threaten public safety anywhere within their service territory.

WMP Section 6.7, Preemptive De-energization for Public Safety

MEID has no assets in the HFTD and do not have a pre-emptive de-energization program. MEID does not have any customers at risk of a PSPS executed by a neighboring utility.

Comments / Recommendations:

The IE recommends that MEID continue to collaborate with neighboring utilities and monitor any future changes that could put MEID customers at risk of a neighboring utility PSPS or preemptive de-energization event.

6.7 PUC § 8387(b)(2)(G)

Requirement:

Appropriate and feasible procedures for notifying a customer who may be impacted by the de-energizing of electrical lines. 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 de-energization for a given event.

Assessment:

WMP Sections 6.7, Preemptive De-energization for Public Safety

MEID describes its protocols for communicating with stakeholders during a service interruption or other electric system emergency. MEID does not have a preemptive de-energization program nor are any MEID customers at risk of a PSPS executed by a

neighboring utility. MEID will execute their established protocols for communicating system emergencies to customers; emergency response personnel; city, county, and state government officials; and critical infrastructure providers, such as hospitals, telecommunications providers, water providers, etc.

Comments / Recommendations:

The IE recommends MEID continue collaborating with neighboring utilities regarding a future preemptive de-energization by the neighboring utility that may impact MEID customers.

6.8 PUC § 8387(b)(2)(H)

Requirement:

Plans for vegetation management.

Assessment:

WMP Section 6.3, Vegetation Management,

MEID meets or exceeds the minimum industry standard vegetation management practices as required in CPUC General Order (GO) 95, California Public Resource Codes §§ 4292 and 4293. MEID has no assets in the HFTD that would be subject to increased inspection cycles.

MEID personnel perform vegetation management inspections, throughout their service territory on an annual basis and perform the work to correct any non-compliant findings.

Comments / Recommendations:

No additional comments or recommendations.

6.9 PUC § 8387 (b)(2)(I)

Requirement:

Plans for inspections of the local publicly owned electric utility's or electrical cooperative's electrical infrastructure.

Assessment:

WMP Section 6.4, Asset Inspections,

MEID has no assets in the HFTD that would be subject to increased inspection cycles. MEID meets or exceeds the minimum asset inspection requirements defined in CPUC GO 165 for electric distribution and transmission facilities and GO 174 for substations.

Comments / Recommendations:

No additional comments or recommendations.

6.10 PUC § 8387 (b)(2)(J)(i) and (ii)

Requirement:

(b)(2)(J) A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the local publicly owned electric utility's or electrical cooperative's service territory. The list shall include, but not be limited, to both of the following:

(b)(2)(J)(i) Risks and risk drivers associated with design, construction, operation, and maintenance of the local publicly owned electric utility's or electrical cooperative's equipment and facilities.

(b)(2)(J)(ii) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the local publicly owned electric utility's or electrical cooperative's service territory.

Assessment:

WMP Section 5.2, Risks and Risk Drivers Associated with Topographic and Climatological Risk Factors,

MEID's service territory is in the central valley of California and outside the HFTD. The climatological risk factors experienced within the MEID service territory are consistent with what is experienced throughout the California central valley. Those risks are associated with (1) extended drought conditions, (2) hot temperatures, (3) high winds, (4) and climate change. However, MEID has not identified any risks and risk drivers associated with topographic and climatological risk factors.

WMP Section 5.3, Risks and Risk Drivers Associated with Design, Construction, Operations, and Maintenance,

MEID has no electric facilities within the HFTD and does not have a documented history of high fire risk incidents that could impact their service territory. During the 2020-2022 WMP cycle MEID did not identify any risks and risk drivers associated with design, construction, operation, and maintenance. Approximately 85% of MEID's distribution system is of underground construction which further reduces any risk for an ignition.

Comments / Recommendations:

The IE recommends that MEID continue to monitor potential climate change impacts to their service area.

6.11 PUC § 8387 (b)(2)(K)

Requirement:

Identification of any geographic area in the local publicly owned electric utility's or electrical cooperative's service territory that is a higher wildfire threat than is identified in a commission fire threat map, and identification of where the commission should expand a high fire threat district based on new information or changes to the environment.

Assessment:

WMP Section 5.5, Changes to the CPUC Fire Threat Map,

MEID has no assets in the HFTD. They agree with the existing CPUC HFTD boundaries and make no recommendation for expanding or minimizing the current HFTD boundaries.

Comments / Recommendations:

No additional comments or recommendations.

6.12 PUC § 8387 (2)(L)

Requirement:

A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk.

Assessment:

WMP Section 5.1, Enterprise-Wide Safety Risks,

MEID does not own or operate any facilities within the HFTD. MEID currently relies on internal personnel with extensive maintenance and operations experience to inform the company of potential safety and reliability risks for all MEID assets. If any risks are identified a remediation plan will be developed and be presented to the Board of Directors for approval.

MEID has identified the loss of their 115kV transmission lines as the greatest risk to system reliability. These two transmission lines are not in the HFTD and are not at risk from a wildfire nor are they subject to a preemptive de-energization.

Comments / Recommendations:

No additional comments or recommendations.

6.13 PUC § 8387 (2)(M)

Requirement: A statement of how the local publicly owned electric utility or electrical cooperative will restore service after a wildfire.

Assessment:

WMP Section 6.8, Restoration of Service,

The MEID has no electrical assets in the HFTD and are of little to no risk of experiencing a service interruption due to a wildfire. The MEID 2023-2025 WMP states that “The steps to restore service after a wildfire, or any other risk event impacting MEID customers, are consistent with utility best practices.” MEID will communicate with the Agency Having Jurisdiction that the damaged area is safe to access, communicate estimated restoration time with customers, conduct a circuit assessment (patrol), if required conduct repairs, and restore.

Comments / Recommendations:

No additional comments or recommendations.

6.14 PUC § 8387 (2)(N) (i), (ii) and (iii)

Requirement:

A description of the processes and procedures the local publicly owned electric utility or electrical cooperative shall use to do all the following:

(2)(N)(i) Monitor and audit the implementation of the wildfire mitigation plan.

(2)(N)(ii) Identify any deficiencies in the wildfire mitigation plan or its implementation and correct those deficiencies.

2(N)(iii) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, that are carried out under the plan, other applicable statutes, or commission rules.

Assessment:

WMP Section 8, Evaluating Performance of the Plan,

The MEID leadership are responsible for ensuring compliance with MEID's WMP. The General Manager has overall accountability for the development and implementation of the Plan. All specific program responsibilities are delegated to leadership overseeing their respective departments.

MEID's metrics listed in their 2020-2022 WMPs, which are used to evaluate the Plan's effectiveness and identifying any deficiencies, have both resulted in zero incidents. These numbers alone suggest MEID has satisfactory design, construction, maintenance, and operations programs.

Comments / Recommendations:

MEID has a well-defined process for evaluating the Plan performance. MEID has no assets within the HFTD; however, they describe programs that support overall system reliability and resiliency.

MEID has updated their company website and have a dedicated page for wildfire mitigation and have posted all previous and current WMPs, the 2020 IE report, and the 2021 WMP Informational Response.

7.0 Summary

MEID's primary goal is to design, construct, maintain, and operate its electrical lines and equipment in a manner that will maintain or increase system reliability and resiliency. Additionally, MEID's 2023-2025 WMP maintains compliance with PUC § 8387. Following this independent evaluation of the MEID's 2023-2025 WMP, GridSME concludes that the Plan is comprehensive and meets the requirements of PUC § 8387.