

MERCED IRRIGATION DISTRICT (MeID)

WILDFIRE MITIGATION PLAN

INDEPENDENT EVALUATION REPORT

September 1, 2020



DISCLAIMER

California Senate Bill 901 (SB 901) mandates that local publicly owned electric utilities or electrical cooperatives shall, before January 1, 2020, prepare a Wildfire Mitigation Plan (WMP or Plan). Additionally, publicly owned electric utilities and electrical cooperatives are required to contract with a qualified independent evaluator 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 assessment of their WMP to ensure it meets the requirements outlined in SB 901. GridSME's review and assessment is based on MeID's WMP alone and evaluates only the comprehensiveness of the Plan as it is written.

The information provided in this review and report represents GridSME's 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 assessment 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.

Table of Contents

1.0	Executive Summary:	4
2.0	Introduction:	5
3.0	Company Overview:	5
4.0	Independent Evaluation:	8
4.1	PUC § 8387 (2)(A)	8
4.2	PUC § 8387 (2)(B)	9
4.3	PUC § 8387 (2)(C)	9
4.4	PUC § 8387 (2)(D)	10
4.5	PUC § 8387 (2)(E)	10
4.6	PUC § 8387 (2)(F)	11
4.7	PUC § 8387 (2)(G)	11
4.8	PUC § 8387 (2)(H)	12
4.9	PUC § 8387 (2)(I)	13
4.10	PUC § 8387 (2)(J)(i) and (ii)	13
4.11	PUC § 8387 (2)(K)	14
4.12	PUC § 8387 (2)(L)	15
4.13	PUC § 8387 (2)(M)	15
4.14	PUC § 8387 (2)(N)(i), (ii) and (iii)	16
5.0	Summary	17

1.0 Executive Summary:

On September 21, 2018, California Governor Jerry Brown signed Senate Bill (SB) 901 which amended Public Utilities Code (PUC) § 8387 and states that “Each local publicly owned electric utility and electrical cooperative 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. They will prepare a wildfire mitigation plan before January 1, 2020 and contract with a qualified independent evaluator with experience in assessing the safe operation of electrical infrastructure to review and assess the comprehensiveness of its wildfire mitigation plan. The independent evaluator (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”.

In accordance with PUC §§ 8387(3) and 8387(3)(c) the Merced Irrigation District (MeID), a Publicly Owned Utility (POU), presented its Wildfire Mitigation Plan (WMP or Plan) at an appropriately noticed public meeting on November 5, 2019 and received approval of the Plan from the MeID Board of Directors. Additionally, in accordance with PUC § 8387(b)(1) MeID submitted their WMP to the California Public Utilities Commission’s (CPUC) Wildfire Safety Advisory Board (WSAB) on April 3, 2020 and subsequently contracted with Grid Subject Matter Experts (GridSME) to conduct an independent evaluation of their WMP to review and assess the comprehensiveness of their Plan as written. As of the time of this review the WSAB has not issued formal guidelines or requirements regarding an IE’s WMP review. Therefore, GridSME’s evaluation of the MeID Plan consisted of only a review of the written Plan to ensure that MeID’s WMP addressed each of the required elements of PUC § 8387 as it relates to POU’s.

The GridSME team of IEs bring over 100 years of combined electric utility system operations experience and are qualified to review and assess the comprehensiveness of MeID’s WMP. Based on this high-level review, GridSME has

concluded that MeID's WMP is comprehensive and meets the requirements of PUC § 8387.

2.0 Introduction:

Over the past several years the threat of catastrophic wildfires has significantly increased in the state of California. These fires are fueled in part by changing weather patterns such as extended drought conditions, more intense windstorms, hotter temperatures; and at-risk fuel such as dead or diseased vegetation, etc. Following a thorough investigation of these catastrophic wildfires, the fire authorities have concluded that electrical facilities were the source of ignition for some of these fires.

In order to comply with State law and the requirements of PUC § 8387, MeID prepared its WMP detailing fire mitigation efforts and programs to 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. Although MeID has no transmission or distribution facilities within the CPUC defined High Fire Threat District (HFTD) they have elected to apply wildfire mitigation programs to their facilities outside of the HFTD. 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.

3.0 Company Overview:

Established in 1919, MeID is one of only four irrigation districts in California today that also provides retail electric energy to homes, farms, and businesses. MeID is governed as a special district by a locally elected five-member board of directors under the provisions of the California Water Code.

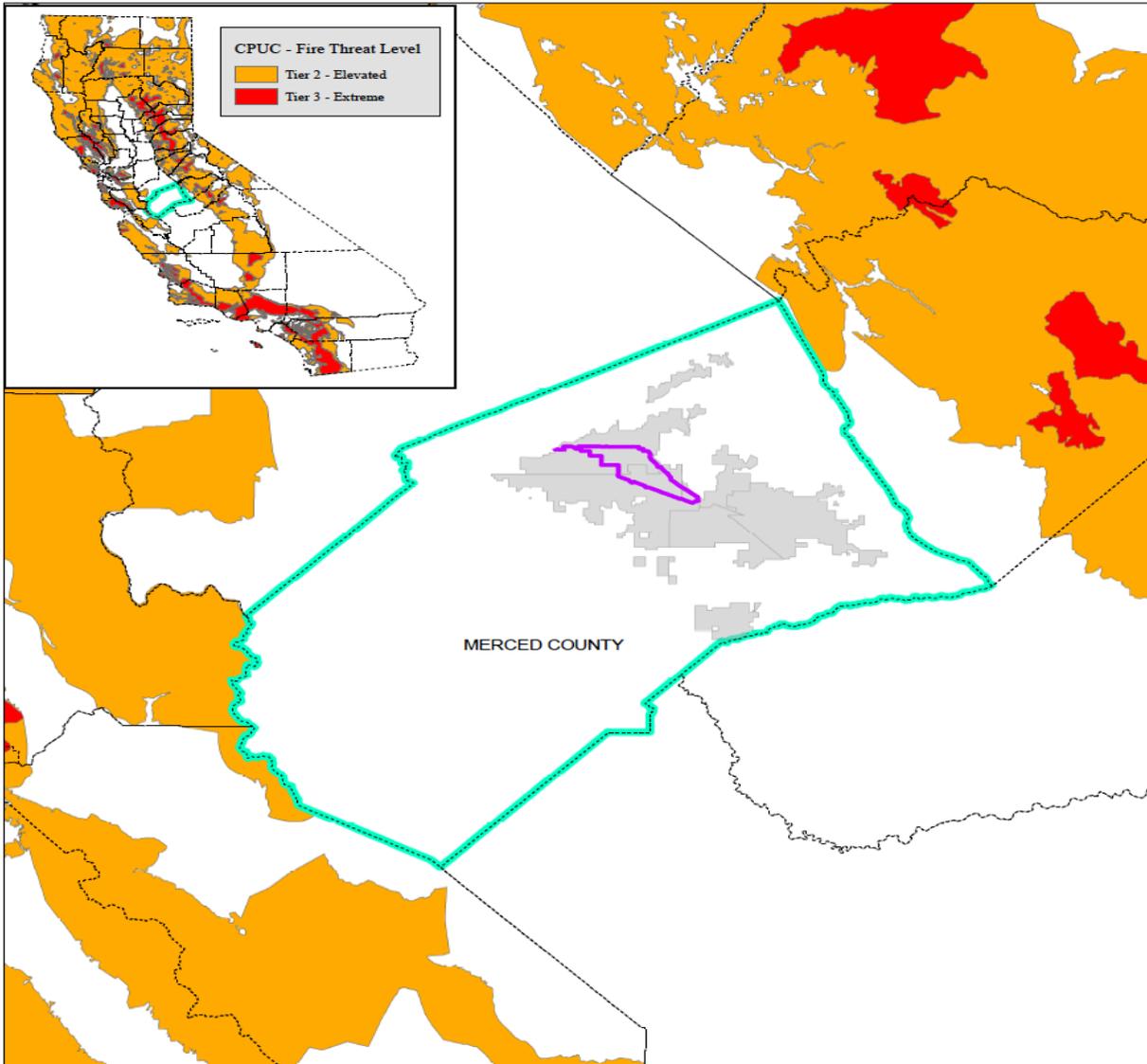
MeID's service territory is located within California's San Joaquin Valley, in Merced County. Beginning in 1996, MeID began selling retail electric power and has now

grown to provide safe and reliable power to over 10,600 customers in the communities of Merced, Livingston, Winton, and Atwater.

MeID owns, maintains, and operates three hydro generating stations, approximately 34 miles of 115 kV transmission lines, and distributes power over approximately 265 miles of 21 and 12 kV distribution lines. All MeID electrical facilities are located outside the HFTD as shown on the CPUC Fire Threat Map (see figure 1). The HFTD is comprised of a High Hazard Zone and two High Fire-Threat Areas where there is an increased risk for utility associated wildfires.

The three areas are:

1. Tier 1, High Hazard Zone – Zones which are in direct proximity to communities, roads, and utility lines, and are a direct threat to public safety.
2. Tier 2 fire-threat area - Depicts areas where there is an elevated risk (including likelihood and potential impacts on people and property) from utility associated wildfires.
3. Tier 3 fire-threat area - Depicts areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility associated wildfires.



CPUC FIRE THREAT - TIER 2 & 3 - MERCED COUNTY

Legend

-  MID Owned 115 kV Transmission Line
-  MID Service Territory



Figure 1 - MeID's Electric Service Territory

4.0 Independent Evaluation:

Although MeID has no transmission or distribution facilities within the CPUC defined HFTD they have elected to apply wildfire mitigation programs to their facilities outside of the HFTD. The overarching goal is to provide safe, reliable, resilient, and economic electric service to its local community. In order to meet this goal, MeID constructs, maintains and operates its electrical lines and equipment in a manner that minimizes the risk of catastrophic fire posed by those electrical lines and equipment.

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 for inclusion in future Plan updates, if any.

4.1 PUC § 8387 (2)(A)

Requirement:

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

Assessment:

Section III.A, Roles and Responsibilities, identifies MeID's governance for development, approval, and implementation of this WMP. MeID's WMP clearly defines who is responsible and/or accountable for the various elements of their Plan. The MeID Board of Directors has responsibility for Plan review and final approval. The General Manager has overall accountability for the development and implementation of the WMP. The Deputy General Manager of Energy Resources has overall responsibility for the development and implementation of this WMP including oversight of the various wildfire mitigation programs such as vegetation management, substation inspections, line inspections, line construction, etc.

4.2 PUC § 8387 (2)(B)

Requirement:

The objectives of the wildfire mitigation plan.

Assessment:

MeID's overarching goal is to provide safe, reliable, resilient, and economic electric service to its local community. Although MeID has no transmission or distribution facilities within the CPUC defined HFTD they have elected to apply wildfire mitigation programs to their facilities outside of the HFTD. In order to meet this goal, MeID constructs, maintains, and operates its electrical lines and equipment in a manner that minimizes the risk of catastrophic fire posed by those electrical lines and equipment, and in accordance with CPUC and North American Electric Reliability standards.

4.3 PUC § 8387 (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:

Sections V.B through V.F of MeID's WMP describe the various programs undertaken by MeID to minimize the probability that its electrical facilities may be the origin or contributing source for the ignition of a catastrophic wildfire. The MeID describes their vegetation management program, transmission and distribution line inspections, substation inspections, and situational awareness method to be alerted to critical fire weather conditions.

4.4 PUC § 8387 (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:

Section VII.A of MeID's 2019 WMP lists two metrics that will be monitored to inform them on the effectiveness and performance of their Plan. Although not in the HFTD MeID will track vegetation contacts and wires down. The MeID currently has relatively limited data gathered through these metrics, however, the MeID will use the 2019 results of these metrics to establish the baseline to determine effectiveness of the Plan and serve as the basis for future Plan revisions and updates.

Recommendation:

It is recommended that future Plan updates include a table with the number of incidents listed relevant to this metric.

4.5 PUC § 8387 (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:

In section VII.B of the WMP, the MeID states that in the initial years there will be relatively limited data gathered through these metrics to measure Plan performance. However, as the data collection history becomes more robust, MeID will be able to identify areas of its operations and service territory that are disproportionately impacted and inform MeID on potential improvements to their

Plan.

4.6 PUC § 8387 (2)(F)

Requirement:

Protocols for disabling reclosers and deenergizing 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:

Section V.E describes MeID's protocols for disabling line reclosers on all of their transmission and distribution circuits. Although MeID does not have a formal policy to disable reclosers during critical fire weather conditions they do monitor system conditions and will turn off reclosing based on real-time information.

Section V.F describes the MeID protocols for de-energizing transmission and/or distribution facilities for safety during critical fire weather conditions. Although MeID does not have a formal policy to deenergize circuits during critical fire weather conditions, MeID may deenergize circuits based on real-time information and to protect employee and/or public safety. Additionally, the Plan describes the protocols for communicating with customers, the first responder community, and critical infrastructure providers.

4.7 PUC § 8387 (2)(G)

Requirement:

Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing 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:

Sections V.F describe the MeID protocols for communicating with stakeholders regarding potential service interruptions. Although MeID does not have a formal Public Safety Power Shutoff (PSPS) program they may turn off the power for public safety or other emergency situation. If needed, 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.

4.8 PUC § 8387 (2)(H)

Requirement:

Plans for vegetation management.

Assessment:

Described in section V.C, MeID meets or exceeds the minimum industry standard vegetation management practices as required in CPUC General Order (GO) 95, NERC Standard FAC-003-4, California Public Resource Codes §§ 4292 and 4293.

MeID personnel perform vegetation management inspections on an annual basis and also perform work to correct any potentially non-compliant incidents identified during the inspections.

4.9 PUC § 8387 (2)(I)

Requirement:

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

Assessment:

Section V.D provides an overview of MeID's facility inspection guidelines for facilities within the MeID HFTD. Although MeID does not own or operate any facilities in the HFTD, the guidelines meet or exceed the minimum inspection standards defined in CPUC GO 165 for electric distribution and transmission facilities and GO 174 for substations.

4.10 PUC § 8387 (2)(J)(i) and (ii)

Requirement:

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:

(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.

(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:

Sections IV.A describes the risks and risk drivers associated with design, construction, operation and maintenance of the MeID electric facilities. MeID has

no electric facilities within the HFTD and does not have a documented history of high fire risk incidents, however they have identified their primary risk drivers as (1) wire down near vegetation, and (2) vegetation to electrical line contact. In the absence of documented historical data regarding equipment failures, MeID has identified the aforementioned risks based on past experience. Additionally, approximately 85% of MeID's distribution system is of underground construction which further reduces this risk.

Sections IV.B describes the 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.

4.11 PUC § 8387 (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:

As described in section V.A MeID agrees with the CPUC and the identified HFTD, and has incorporated it into its construction, inspection, and maintenance procedures, where applicable.

MeID has not identified any areas of their service territory that are of higher wildfire threat than is identified in the CPUC fire threat map and makes no recommendations for expanding the HFTD.

4.12 PUC § 8387 (2)(L)

Requirement:

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

Assessment:

Section VII.C describes MeID's process for monitoring and auditing their WMP. As previously mentioned, MeID does not own or operate any facilities within the HFTD. In the absence of an enterprise fire-risk mitigation program framework, MeID currently relies on internal personnel with extensive maintenance and operations experience to inform the company of potential safety and reliability risks. If any risks are identified a remediation plan will be developed and be presented to the Board of Directors for approval.

4.13 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:

Section VI describes MeID's procedures for restoring electrical service if a line experiences an unplanned (forced) interruption, if the line is de-energized for safety due to critical fire weather conditions, or after a wildfire damages any facilities. The MeID has well defined standard operating procedures for safely restoring service following an interruption or other event that causes significant infrastructure damage.

4.14 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 of 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:

Section VII.C and VII.D, describes the MeID methodology for monitoring and auditing the WMP implementation and effectiveness of the various programs. The MeID leadership are responsible for ensuring compliance with MeID's wildfire mitigation programs. 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.

Initially, the MeID will have limited data (metrics) to help determine plan effectiveness or identifying plan deficiencies. The metrics provided in MeID's 2019 WMP will serve as the baseline year to assess Plan performance and serve as the basis for plan revisions and improvements in future years. Inspection and maintenance work is performed by MeID personnel and recorded in Cityworks, MeID's asset management database.

5.0 Summary

MeID's goal is to comply with California SB 901, PUC § 8387, and to 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.

Following an independent evaluation of MeID's WMP, GridSME concludes that the Plan is comprehensive and meets the requirements of PUC § 8387.