



To: Stakeholders for PacifiCorp's 2020 Annual Report on Compliance

December 5, 2022

Enclosed is the Draft 2020 Annual Report on Compliance (ARC) for PacifiCorp 2020 Wildfire Mitigation Plan (WMP).

On December 5, 2022, this Draft ARC is hereby published for public review and comment. Opening comments must be submitted no later than December 27, 2022.¹ Reply comments must be submitted no later than January 6, 2023.²

Comments must be submitted to Energy Safety's e-filing system in the 2020 ARC docket (#2020-ARC).³

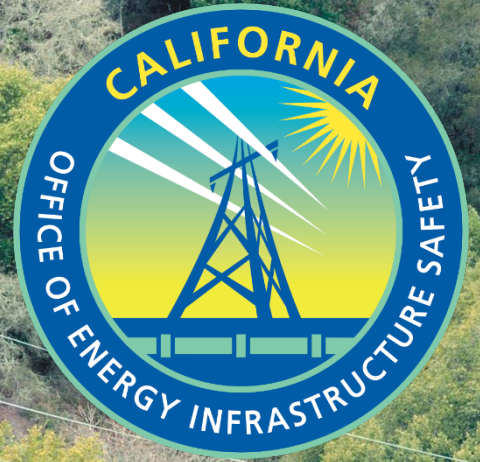
Sincerely,

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Office of Energy Infrastructure Safety
California Natural Resource Agency

¹ Dates falling on a Saturday or holiday as defined in Government Code Section 6700 have been adjusted to the next business day in accordance with Government Code Section 6707.

² Dates falling on a Saturday or holiday as defined in Government Code Section 6700 have been adjusted to the next business day in accordance with Government Code Section 6707.

³ Submit comments to the [2020-ARC](https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2020-ARC) docket via the Energy Safety's e-filing system here: <https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2020-ARC> (accessed December 5, 2022).



OFFICE OF ENERGY INFRASTRUCTURE SAFETY
**DRAFT ANNUAL REPORT ON
COMPLIANCE**
PACIFICORP
2020 WILDFIRE MITIGATION PLAN

DECEMBER 2022

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DRAFT

1.0 EXECUTIVE SUMMARY

The Office of Energy Infrastructure Safety (Energy Safety) is tasked with evaluating and either approving or denying Wildfire Mitigation Plans (WMP) annually filed by electrical corporations pursuant to Public Utilities Code section 8386 et seq. The law also directs Energy Safety to ensure that the electrical corporations have complied with their plans.

Pursuant to Government Code section 15475.1, Energy Safety's primary objective is to ensure that electrical corporations reduce wildfire risk and comply with energy infrastructure safety measures. Therefore, as detailed in the Compliance Framework, set forth in this Annual Report on Compliance (ARC), Energy Safety's evaluation of PacifiCorp's performance to its 2020 WMP went beyond a "check-box" exercise of looking at whether PacifiCorp met its initiative targets and instead wholistically evaluated whether PacifiCorp's performance in 2020 reduced the risk of PacifiCorp equipment igniting a catastrophic wildfire.

Energy Safety's compliance review process is conducted through a variety of means including field inspections, audits, and analysis of data submitted by PacifiCorp to Energy Safety. Substantial compliance with a WMP includes meeting not only program targets and plan objectives, but also reducing risk. As such, Energy Safety also evaluated several performance metrics, including ignition and Public Safety Power Shutoff risk, as well as metrics that reveal the risk on the system from unresolved conditions discovered during PacifiCorp's inspections of its infrastructure. Energy Safety also performed an analysis that compared the electrical corporation's performance during the 2020 WMP compliance period to trends from previous years.¹ Finally, Energy Safety reviewed PacifiCorp's self-assessment in its Electrical Corporation Annual Report on Compliance (EC ARC) and the findings of its independent evaluator.

After considering all the sources of information before it, Energy Safety finds that PacifiCorp failed to substantially comply with its 2020 WMP during the compliance period, January 1 to December 31, 2020. PacifiCorp suffered from systematic failures that caused it to miss program targets and ultimately hindered its ability to reduce the risk of catastrophic wildfire on its system. PacifiCorp's poor and inaccurate record-keeping and reporting reveals data governance issues throughout its operation, pointing to a pervasive data management issue. PacifiCorp's insufficient data governance resulted in a missed opportunity to reduce risk and potentially increased the likelihood of negative outcomes.

¹ Energy Safety looked at previous year performances dating back to 2015, where available and reported in PacifiCorp's data submissions, or any year thereafter for which data was available and reported.

PacifiCorp reported progress on only 30% of its 2020 WMP initiatives. PacifiCorp failed to meet the targets for nearly 45% of those reported initiatives with WMP targets. The misses were substantive – on average, PacifiCorp completed less than half of its 2020 WMP target for the missed initiatives. Most notably, PacifiCorp met only 4% of its covered conductor initiative (5.3.3.3) target despite devoting nearly one-third of its entire 2020 WMP planned budget to this initiative. Energy Safety finds that PacifiCorp failed to install covered conductor as planned for the “Dunsmuir Tie Taps” project, which later experienced an ignition on or near that exact location in 2020. PacifiCorp itself identified its delayed grid hardening work, specifically its lack of covered conductor installation, as a factor in its inability to make a “significant impact” in reducing its PSPS risks (See Section 5.1.4).

Energy Safety acknowledges that PacifiCorp met some of its WMP objectives. However, PacifiCorp failed to meet the key purpose behind the WMP, which is to reduce ignitions and wildfire risk. PacifiCorp failed to meet the targets for initiatives highly correlated with risk, failed to meet stated key objectives, and failed to sufficiently address risk on the system.

2.0 INTRODUCTION

This Annual Report on Compliance (ARC) presents the Office of Energy Infrastructure Safety's (Energy Safety's) statutorily mandated assessment of PacifiCorp's compliance with its 2020 Wildfire Mitigation Plan (WMP).² Mitigation of wildfire risk is a highly dynamic and circumstantial endeavor that varies as a function of climate, weather, topography, and fuel conditions. The factors impacting catastrophic wildfire risk vary both temporally and geographically. Just as the mitigations to address an electrical corporation's wildfire risk are specifically unique to the dynamics of its territory, location, infrastructure, and various other temporal factors, Energy Safety's assessment of compliance with WMPs is equally tailored to the electrical corporation's unique scenario and circumstances.

PacifiCorp submitted its 2020 WMP on February 7, 2020. Energy Safety reviewed the plan and issued a conditional approval on June 10, 2020.

2.1 Background

In 2019, following the devastating wildfires in 2017 and 2018, the California Legislature passed several bills increasing regulatory supervision of electrical corporations' efforts to reduce utility-related wildfires. Assembly Bill (AB) 1054 and AB 111 created Energy Safety and tasked it with reviewing WMPs submitted annually by electrical corporations and ensuring compliance with those plans.³ Energy Safety's primary objective is to ensure that electrical corporations reduce wildfire risk and comply with energy infrastructure safety measures.⁴

2.2 Legal Authority

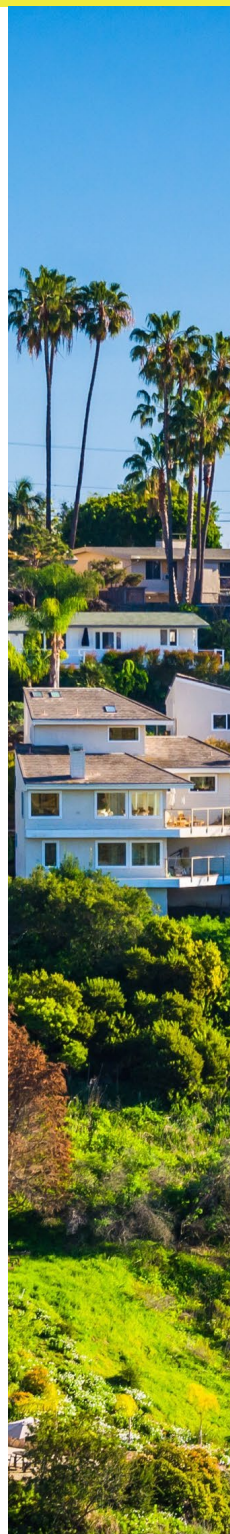
Energy Safety is responsible for overseeing compliance with electrical corporations' WMPs.⁵ Energy Safety has broad authority to obtain and review information and data and to inspect property, records, and equipment of every electrical corporation in furtherance

² Pub. Util. Code, § 8386.3(c).

³ The legislation which created Energy Safety mandated that the office be formed on January 1, 2020, as the Wildfire Safety Division (WSD) of the California Public Utilities Commission (CPUC) and transition to Energy Safety under the California Natural Resources Agency (CNRA) on July 1, 2021 – 18 months after being formed.

⁴ Gov. Code, § 15475.1.

⁵ Pub. Util. Code, § 8386.3(c).



of its duties, powers, and responsibilities.⁶ In addition to performing an overall assessment of compliance⁷ with the WMP, Energy Safety audits each electrical corporation's vegetation management work for compliance with WMP requirements⁸ and performs other reviews and audits. Energy Safety may rely upon metrics⁹ to evaluate WMP Compliance, including performance metrics adopted by the California Public Utilities Commission (CPUC).¹⁰ Annually, in consultation with Energy Safety, the CPUC adopts a wildfire mitigation plan compliance process.¹¹ The CPUC adopted the 2020 Compliance Process via Resolution WSD-012 on November 23, 2020.¹²

2.3 Annual Compliance Process Cadence

Pursuant to Public Utilities Code section 8385(a)(1), a “compliance period” means a period of approximately one year. In its Compliance Operational Protocols issued on February 16, 2021, Energy Safety defined the compliance period for 2020-2022 WMPs as January 1 to December 31 for each calendar year of the three-year WMP.¹³

Public Utilities Code section 326(a)(3) instructs that Energy Safety utilize visual inspection of electrical corporation infrastructure and wildfire mitigation programs as a means of assessing WMP compliance. Furthermore, Public Utilities Code section 8386.3(c) outlines the baseline statutory framework for assessing WMP compliance through a series of audits, reviews, and assessments performed by Energy Safety, independent evaluators, and the electrical corporations themselves. The statutory framework also lays out a defined timeframe for several of the compliance assessment components as follows:

- Three months after the end of an electrical corporation's compliance period, each electrical corporation must submit a report addressing the electrical corporation's compliance with the plan during the prior calendar year.¹⁴ Pursuant to this requirement, PacifiCorp submitted its Electrical Corporation Annual Report on Compliance (EC ARC) for its 2020 WMP on March 31, 2021.
- Six months after the end of an electrical corporation's compliance period, an independent evaluator must submit an Independent Evaluator Annual Report on Compliance (IE ARC). The independent evaluators are engaged by each

⁶ Gov. Code, § 15475.

⁷ Pub. Util. Code § 8386.3(c)(4).

⁸ Pub. Util. Code § 8386.3(c)(5)(A).

⁹ Pub. Util. Code §§ 326(a)(2), 8389(b)(1).

¹⁰ Pub. Util. Code § 8389(d)(4).

¹¹ Pub. Util. Code § 8389(d)(3).

¹² https://energysafety.ca.gov/wp-content/uploads/docs/compliance-process/20201008-compliance-staff-proposal_final.pdf.

¹³ https://efiling.energysafety.ca.gov/Search.aspx?docket=2021-OPS_GUIDELINES.

¹⁴ Pub. Util. Code, § 8386.3(c)(1).



electrical corporation to review and assess the electrical corporation's compliance with its plan for the prior year. As a part of this report, the independent evaluator must determine whether the electrical corporation failed to fund any activities included in its plan.¹⁵ PacifiCorp selected NV5 as its independent evaluator for compliance with the 2020 WMP. NV5 issued its IE ARC for PacifiCorp's 2020 WMP on July 1, 2021.

- In parallel with the above assessments, Energy Safety audits vegetation management activities. The results of the audit must specify any failure of the electrical corporation to fully comply with the vegetation management requirements in the wildfire mitigation plan. Energy Safety then grants the electrical corporation a reasonable amount of time to correct and eliminate any deficiency specified in the audit.¹⁶ Subsequently, Energy Safety issues a report describing any failure of the electrical corporation to substantially comply with the substantial portion of the vegetation management requirements in the electrical corporation's WMP.¹⁷
- Eighteen months after the electrical corporation submits its compliance report pursuant to section 8386.3(c)(1), or twenty-one months after the end of the compliance period, Energy Safety completes its annual compliance review to determine whether the electrical corporation substantially complied with its WMP.¹⁸ Energy Safety memorializes its conclusions in this ARC.

3.0 ARC COMPLIANCE FRAMEWORK

Public Utilities Code prescribes that the overarching intended objective of electrical corporation wildfire mitigation planning efforts is to ensure that electrical corporations are constructing, maintaining, and operating their infrastructure in a manner that will minimize the risk of catastrophic wildfire.¹⁹ The statutory objective of a WMP, and consequently the focus of Energy Safety's assessment of compliance, is wildfire risk reduction. An electrical corporation's obligations extend beyond meeting WMP targets. If the risk of catastrophic wildfire is not reduced, an electrical corporation has not satisfied the objective of its WMP. Therefore, Energy Safety's compliance evaluation of the 2020 WMPs went beyond an assessment of whether an electrical corporation met all stated targets (e.g., number of miles of covered conductor installed) to also examine whether the electrical corporation has reduced the risk of catastrophic wildfires. Energy Safety also evaluated whether there were

¹⁵ Pub. Util. Code, § 8386.3(c)(2)(B)(i).

¹⁶ Pub. Util. Code, § 8386.3(c)(5)(C).

¹⁷ Id.

¹⁸ Pub. Util. Code, § 8386.3(c)(4); CPUC Resolution WSD-012 2020 WMP Compliance Process. November 2020. https://energysafety.ca.gov/wp-content/uploads/docs/compliance-process/20201008-compliance-staff-proposal_final.pdf

¹⁹ Pub. Util. Code, § 8386(a).

systemic issues that hindered the electrical corporation's ability to meet targets and reduce wildfire risk.

Energy Safety's compliance evaluation examined the totality of data and findings before the department and applied rigorous analysis to determine whether an electrical corporation substantially complied with its WMP.

Energy Safety conducted its compliance assessment to answer the following questions:

1. Did the electrical corporation implement its WMP through completion of approved initiatives (i.e., did the electrical corporation meet its stated qualitative and quantitative targets)?
2. Did the electrical corporation achieve the stated objectives set forth in its 2020 WMP (see Section 4.2)?
3. Was the electrical corporation's performance consistent with achieving wildfire risk reduction?

3.1 Completion of Approved WMP Initiatives

To assess compliance with approved WMP initiatives, Energy Safety evaluated whether the electrical corporation met all stated quantitative and qualitative targets set by the Electrical Corporation in its plan. Energy Safety particularly focused on those initiatives directly associated with the achievement of WMP objectives as well as those that constituted a significant portion of financial expenditures by the electrical corporation as the expenditures demonstrated where the electrical corporation focused most of its resources to reduce wildfire risk. For 2020 only, Energy Safety also assessed whether the electrical corporation satisfied the conditions placed upon it through Energy Safety's conditional 2020 WMP approval (see Section 4.1).

Where an electrical corporation failed to meet a stated target, Energy Safety evaluated the rationale provided by the electrical corporation, if any, for such failure. Energy Safety also looked for systemic issues that may have caused underperformance, e.g., conflicting/inconsistent documentation, poor communication practices, or substandard quality control practices (see Section 3.3).

Finally, Energy Safety evaluated the quality of WMP initiative implementation. Even where an electrical corporation met a target for work volume, to comply with a WMP and ensure reduction of risk, the work must be completed correctly and in an effective, high-quality manner.

3.2 2020 WMP Objectives

To assess whether an electrical corporation achieved its 2020 WMP objectives, Energy Safety relied upon the information sources set forth in Section 3.4 below. Where an electrical corporation failed to meet a stated objective, Energy Safety evaluated the rationale, if any, provided by the electrical corporation. Energy Safety also looked for systemic issues that may have caused underperformance (see Section 3.3).

3.3 Achieving Wildfire Risk Reduction

The 2020 WMP is the base year in the first three-year WMP cycle (2020-2022). As such, Energy Safety was limited in making direct determinations on the effectiveness of the 2020 WMP in reducing wildfire risk in that same year as the benefits of some actions may take time to come to fruition. Energy Safety conducted a trend analysis on several outcome metrics (e.g., ignitions) from 2015-2020, normalized for weather and fuel conditions, to assess prior performance and to track any notable changes that occurred in 2020. Energy Safety will again evaluate these metrics at the end of the three-year WMP cycle to evaluate correlations between WMP implementation performance and outcomes.

Energy Safety further analyzed how the electrical corporation prioritized implementation of WMP initiatives to determine whether work was undertaken in the areas of highest risk. Not all areas in an electrical corporation's service territory present equal ignition risk or consequence. Therefore, it is not enough to meet a target; WMP initiatives must first be concentrated and deployed in the areas of highest risk to buy down as much risk as possible.

Finally, Energy Safety undertook a holistic evaluation of all relevant information sources and assessments, including field verifications, to bring to light systemic failings of the electrical corporation that may hinder its ability to reduce catastrophic wildfires. Such failings could contribute to increased risk on the system even if WMP targets are achieved. Therefore, Energy Safety looked for trends across analyses to weave together a deeper and more nuanced understanding of WMP compliance.

3.4 Information Sources Used for ARC Analysis

Energy Safety relied upon the following sources of information to conduct its analysis:

- Information provided by the electrical corporation i.e., the EC ARC, Quarterly Initiative Updates, compliance self-reporting, 2021 WMP Update.
- Information provided by the independent evaluator's review of the electrical corporation's compliance with its 2020 WMP (IE ARC).
- Findings from Energy Safety field inspections.
- Findings from Energy Safety's audits and assessments of the electrical corporation.

- Data submitted to Energy Safety by the electrical corporation²⁰ including responses to data requests.

3.4.1 EC ARC

Three months after the end of the compliance period, the electrical corporation must submit a report to Energy Safety addressing its compliance with its approved 2020 WMP.²¹ The Compliance Operational Protocols outline the minimum requirements and structure for PacifiCorp's 2020 WMP compliance review report.²² The report must include:

- An assessment of whether the electrical corporation achieved the risk reduction intent by implementing all of their approved WMP initiatives, i.e., the degree to which initiative activities have reduced ignition probabilities. If the electrical corporation failed to achieve the intended risk reduction, Energy Safety required the electrical corporation to provide a detailed explanation of why and a reference to where associated corrective actions were incorporated into their most recently submitted WMP.
- A full and complete listing of all change orders²³ and any other operational changes, such as initiative location changes, made to WMP initiatives, with an explanation of why the changes were necessary, and an assessment of whether the changes achieved the same risk reduction intent.
- Descriptions of all planned WMP initiative spend vs. actual WMP initiative spend and an explanation of any differentials between the planned and actual spends.
- A description of whether the implementation of WMP initiatives changed the threshold(s) for triggering a Public Safety Power Shutoff (PSPS) event and/or reduced the frequency, scale, scope, and duration of PSPS events.
- A summary of all defects identified by Energy Safety within the annual compliance period, the corrective actions taken and the completion and/or estimated completion date.²⁴

²⁰ Energy Safety receives data from the electrical corporation through three main paths: Quarterly Advice Letter submissions, Quarterly Data Request submissions, and Quarterly Initiative Updates.

²¹ Pub. Util. Code, § 8386.3(c)(1).

²² Wildfire Safety Division – Compliance Operational Protocols, pages 10-12.

²³ See CPUC Resolution WSD-002, pages 32-35, for detail regarding the 2020 WMP change order process.

²⁴ The defect summary component of the ARC contents does not supplant detailed defect correction responses, which shall be filed with WSD throughout the year as needed (see Appendix Part 2. Response and Corrective Action Timeline in the Operational Protocols for details).

3.4.2 IE ARC

Each year before March 1, Energy Safety, in consultation with the Office of the State Fire Marshall, must publish a list of qualified independent evaluators.²⁵ The electrical corporations must each engage an independent evaluator from the list to review and assess its compliance with the respective approved WMP.²⁶ The independent evaluator must issue a report, referred to as the Independent Evaluator Annual Report on Compliance (IE ARC), by July 1 of each year covering the previous calendar year. As a part of the report, the independent evaluator must determine whether the electrical corporation failed to fund any activities included in its plan.²⁷ ²⁸ Energy Safety considered the independent evaluator's findings in this ARC, but the independent evaluator's findings are not binding on Energy Safety's final determination of WMP compliance.²⁹

3.4.3 Inspections

Pursuant to Public Utilities Code section 326(a)(3), to ensure electrical corporations complied with their WMPs and operated their infrastructure in a manner that reduces wildfire risk, Energy Safety conducted detailed visual inspections of electrical infrastructure to verify work was performed by electrical corporations, as reported in approved WMPs, and to assess the condition of infrastructure.

Energy Safety began conducting inspections related to the 2020 WMPs in May 2020. Inspections covered core wildfire mitigation efforts related to vegetation management, system hardening, situational awareness, and emergency preparedness and response, in addition to general compliance with applicable Government Order (GO) 95 requirements. The review and analysis of data compiled on findings from these inspections formed the basis of Energy Safety's observations and conclusions in Section 5.3.

3.4.4 Audits

Public Utilities Code section 8386.3(c)(5) requires Energy Safety to perform an audit to determine whether the electrical corporation "substantially complied with the substantial portion"³⁰ of its vegetation management requirements in its WMP. Energy Safety refers to this audit as the "Substantial Vegetation Management" (SVM) audit. Pursuant to Public Utilities

²⁵ Pub. Util. Code § 8386.3 (c)(2)(A).

²⁶ Pub. Util. Code, § 8386.3(c)(2)(B).

²⁷ Id.

²⁸ The independent evaluator reviews performed for the 2020 WMPs were the first of their kind and completed in a considerably truncated timeframe.

²⁹ Pub. Util. Code, § 8386.3(c)(2)(B)(ii).

³⁰ Pub. Util. Code, § 8386.3(c)(5)(C).

Code section 8386(c)(5), Energy Safety conducted an audit of PacifiCorp's compliance with the vegetation management requirements in its 2020 WMP.

In addition to the statutorily prescribed SVM audit, Energy Safety retained a contractor, Crowe, LLC, to conduct a performance audit of WMP expenditures.

3.4.5 Data

Energy Safety analyzed performance metrics and other data when assessing whether the electrical corporation complied with its 2020 WMP. Energy Safety required electrical corporations to submit spatial and non-spatial data through Quarterly Data Reports (QDRs), Quarterly Initiative Updates (QIUs), and Quarterly Advice Letters (QALs).

4.0 PACIFICORP'S 2020 WMP

The 2020 WMP Guidelines were issued on December 16, 2019, via *Administrative Law Judge's Ruling on Wildfire Mitigation Plan Templates and Related Material and Allowing Comment*.³¹ The 2020 WMP Guidelines outlined the requirements and expectations for the 2020 WMP submissions including reporting templates, metrics, timelines, structure, and minimum levels of detail. The 2020 WMP Guidelines were designed to:

- Increase standardization of information collected on electrical corporations' wildfire risk exposure,
- Enable systematic and uniform review of information each electrical corporation submits, and
- Move electrical corporations toward an effective long-term wildfire mitigation strategy, with systematic tracking of improvements over time.³²

The 2020 WMP Guidelines structured the submission into five sections, as follows:

1. Persons responsible for executing the plan
2. Metrics and underlying data
3. Baseline ignition probability and wildfire risk exposure
4. Inputs to the plan and directional vision including objectives
5. Listing of wildfire mitigation initiatives for each year of the three-year plan period

³¹ See CPUC Rulemaking R.18-10-007.

³² CPUC Resolution WSD-002, page 2.

4.1 Conditional Approval

In its disposition of PacifiCorp's 2020 WMP, Energy Safety issued a conditional approval that identified and classified certain deficiencies requiring varying responsive action. Energy Safety evaluated PacifiCorp's fulfillment of its 2020 WMP conditions in this ARC. Energy Safety's assessment regarding resolution of conditions placed on PacifiCorp's 2020 WMP are further discussed in Section 5.7.

Energy Safety released Resolution WSD-002, *Guidance Resolution on 2020 Wildfire Mitigation Plans Pursuant to Public Utilities Code Section 8386* (Guidance Resolution). The Guidance Resolution applied to the electrical corporations collectively and contained deficiencies and associated conditions (remedies).³³ Deficiency Guidance-5 noted that electrical corporations combined various initiatives into broader programs and reported data at the programmatic level. This aggregation made it difficult to track progress against individual initiatives, among other issues. The associated condition to Deficiency Guidance-5 required electrical corporations to disaggregate initiatives in their quarterly filings.³⁴

As a result of the required disaggregation, some electrical corporation data submissions, including quarterly filings and Quarterly Initiative Updates (QIUs), reference a different number of initiatives than that set forth in the electrical corporation's WMP. In this ARC, Energy Safety reported the number of initiatives as they were presented in the underlying reference document.

4.2 2020 WMP Objectives

The 2020 WMP Guidelines required each electrical corporation to describe the specific objectives of its 2020 WMP in section 4.1.³⁵ The 2020 WMP Guidelines also specified that objectives must be described with respect to the following timeframes:

1. Before the upcoming wildfire season (as declared by CALFIRE)
2. Before the next annual update
3. Within the next three years
4. Within the next 10 years³⁶

In determining whether PacifiCorp substantially complied with its 2020 WMP, Energy Safety considered and weighed the plan's objectives. PacifiCorp deviated from standard template language in the 2020 WMP Guidelines for presenting its objectives in section 4.1 and did not

³³ The Guidance Resolution did not apply to the Independent Transmission Operators, Horizon West, and Trans Bay Cable, as they received a full approval of their respective 2020 WMPs.

³⁴ CPUC Resolution WSD-002, page 24.

³⁵ 2020 WMP Guidelines, page 43.

³⁶ Id.

include specific objectives in the timeframes outlined above. Accordingly, Energy Safety reviewed PacifiCorp's objectives as stated in section 4.1, but also included relevant objectives within the first two timeframes above from other sections in its plan.

PacifiCorp's overarching objectives in the immediate, near, and longer term were to implement "the programs included in Section 5" of its 2020 WMP which detailed PacifiCorp's wildfire mitigation strategies.³⁷

PacifiCorp also stated that its key objectives for 2020 included:³⁸

- Installation of 38 miles of covered conductor.
- Installation and commissioning of 31 system automation devices.
- Replacement of 3 miles of small diameter copper conductor with aluminum stranded conductor.
- Proactive replacement of 189 in-service wooden poles with fiberglass for enhanced structural resilience.
- Evaluation of various pilot project results.
- Continued implementation of enhanced inspection and correction programs.

4.3 PacifiCorp's 2020 WMP Initiatives

The 2020 WMP Guidelines required each electrical corporation to group its discussion of wildfire mitigation initiatives into the 10 categories listed in Table 1, below.

PacifiCorp's 2020 WMP included a total of 86 initiatives allocated across the 10 categories.³⁹ Table 1 below provides a summary of PacifiCorp's allocation of WMP initiatives across categories, its reported planned spending in each category for 2020, and the percentage of the total 2020 WMP budget the spending in each category comprised.

Table 1: PacifiCorp's 2020 WMP Initiatives by Category

Initiative Category	No. of Initiatives	2020 Planned Spend (\$K) ⁴⁰	% Of 2020 Budget
Risk assessment and mapping	6	\$25	0%
Situational awareness and forecasting	6	\$278	1%

³⁷ PacifiCorp 2020 WMP, section 4.1: The objectives of the plan, page 71.

³⁸ PacifiCorp 2020 WMP, Executive Summary, page 15.

³⁹ See Section 4.1 for an explanation of the source of some reporting discrepancies in initiative numbers and targets.

⁴⁰ PacifiCorp 2020 ARC, page 5-6, Section C. Descriptions of all planned WMP initiative spend vs actual WMP initiative spend an explanation of any differentials between planned and actual spends.

Initiative Category	No. of Initiatives	2020 Planned Spend (\$K) ⁴⁰	% Of 2020 Budget
Grid design and system hardening	18	\$15,403	62%
Asset management and inspections	15	\$1,219	5%
Vegetation management and inspections	21	\$5,783	23%
Grid operations and protocols	6	\$2,000	8%
Data governance	4	\$25	0%
Resource allocation methodology	0	\$278	1%
Emergency planning and preparedness	6	\$0	0%
Stakeholder cooperation and community engagement	4	\$0	0%
Total	86	\$25,011	100%

Some initiatives provided quantitative targets (e.g., miles completed for system hardening initiatives). Other initiatives included qualitative measures (e.g., integration of all vegetation data into a singular database as a data governance initiative). A few initiatives included both qualitative and quantitative measures.

Energy Safety also reviewed the planned spend for each WMP initiative to assess how PacifiCorp prioritized its risk mitigation efforts as a function of the percentage of total budget allocated across WMP categories and initiatives. Table 2 provides an overview of PacifiCorp's planned 2020-2022 WMP spend.⁴¹

Table 2 below contains PacifiCorp's estimates of its projected costs for the wildfire mitigation efforts in its 2020-2022 WMP and Table 3 presents the top 10 spend initiatives in the 2020 WMP.

Table 2: PacifiCorp's Planned 2020-2022 WMP Expenditures

Planned 2020-2022 WMP Costs	
2020	\$26 million
2021	\$38 million
2022	\$37 million
2020-2022 Plan Period	\$101 million

⁴¹ CPUC Resolution WSD-008, page 4.

Table 3 lists the top 10 initiatives by planned spend. The last row in the table shows that the 10 listed initiatives (out of 97 total) made up 92% of PacifiCorp's total 2020 WMP planned spend.

Table 3: PacifiCorp's 2020 WMP Top 10 Planned Spend Initiatives

Initiative #	Initiative Name	2020 Planned Spend ⁴²	% Of 2020 WMP Budget
5.3.3.3b	Covered conductor installation - distribution	\$ 7,875,000	31%
5.3.3.6b	Transmission pole replacement and reinforcement, including with composite poles	\$ 3,672,000	15%
5.3.5.20	Vegetation management to achieve clearances around electric lines and equipment	\$ 3,288,977	13%
5.3.3.9	Installation of system automation equipment	\$ 3,029,013	12%
5.3.5.16 ⁴³	Other/not listed - Radial Pole Clearing	\$ 1,770,144	7%
5.3.5.2	Detailed inspection of vegetation around distribution electric lines and equipment	\$ 1,422,792	6%
5.3.6.3	Personnel work procedures and training in conditions of elevated risk	\$ 1,100,000	4%
5.3.5.3	Detailed inspection of vegetation around transmission electric lines and equipment	\$ 723,897	3%
5.3.6.1	Automatic recloser operations	\$ 600,000	2%
5.3.3.18	Other - Replace small size Cu conductor	\$ 498,000	2%
	Total	\$ 23,979,823	92%

5.0 COMPLIANCE ASSESSMENTS

In the following sections, Energy Safety provides the findings from the compliance source inputs it relied upon in making its annual determination of compliance in this ARC.

⁴² PacifiCorp 2020 WMP Tables, file R18-10-007_PacifiCorp_WF_Tables.xlsx, tables 21-31.

⁴³ Note that this initiative number was erroneously reported in [Table 25 of PacifiCorp's 2020 WMP](#). However, per the 2020 WMP, this initiative number should read 5.3.5.21.

5.1 PacifiCorp Self-Assessed Compliance Reporting

PacifiCorp timely submitted its EC ARC on March 31, 2021. As outlined in Section 3.4.1 above, the Compliance Operational Protocols required electrical corporations to discuss five key components in their EC ARCs. PacifiCorp structured its EC ARC into subsections that included specific discussion on each of the five key components. Detailed in the subsections below is a summary of PacifiCorp's responses to each of the five required components.

5.1.1 Achievement of Risk Reduction

The first key component required electrical corporations to discuss “whether the EC met the risk reduction intent [of its WMP] by implementing all of [its] approved WMP initiatives, i.e. the degrees to which initiative activities have reduced ignition probabilities.”⁴⁴ Unlike most other electrical corporations, in its EC ARC, PacifiCorp did not explicitly discuss its year-end progress toward achieving its 2020 WMP initiative targets in response to this requirement. Instead, PacifiCorp's EC ARC took a more literal interpretation of this requirement and focused its discussion on its nascent wildfire risk modeling and quantification capabilities. PacifiCorp stated that, in 2020, its “risk modeling capability was still in development and therefore not fully mature and capable of quantifying proposed or planned risk reduction.”⁴⁵ PacifiCorp did not report missing any specific initiatives in its EC ARC. It stated the following on whether it met the risk reduction intent of its WMP:

“Consistent with the 2020 Wildfire Mitigation Plan, the implementation of initiatives in 2020 were aligned with the overall plan objectives of reducing faults, ensuring rapid fault response, facilitating situational awareness and operational readiness and considering the impact to customers and communities. Additionally, PacifiCorp has continued to capture and evaluate any changes to ignition probability drivers as well as the corrective action plan and evolution of the company's risk modeling capability as described in Sections 6.7 and 4.5 of the 2021 WMP Update respectively.”⁴⁶

5.1.2 Change Orders and Operational Changes

EC ARCs were also required to include “[a] full and complete listing of all change orders and any other operational changes, such as initiative location changes, made to WMP initiatives, with an explanation of why the changes were necessary, and an assessment of whether the

⁴⁴ Compliance Operational Protocols, page 10.

⁴⁵ PacifiCorp EC ARC, page 4.

⁴⁶ PacifiCorp EC ARC, pages 4-5.

changes achieved the same risk reduction intent.”⁴⁷ PacifiCorp reported that it did not submit any change orders nor made any operational changes in 2020. PacifiCorp stated, “[b]ecause PacifiCorp was early in the stages of its WMP implementation, PacifiCorp’s 2020 WMP did not include a location-specific annual scope for each of the initiatives planned. Much of 2020 efforts were focused on developing new processes, protocols, and detailed scope.”⁴⁸

5.1.3 Planned vs. Actual WMP Initiative Expenditures

The Compliance Operational Protocols required EC ARCs to include a description of planned and actual expenditures for WMP initiatives, and explanations for any variances.⁴⁹ Pursuant to this requirement, in its EC ARC, PacifiCorp reported planned and actual expenditures, including deviations and explanations for those deviations. However, PacifiCorp summed this data at the initiative category level and did not provide an initiative-level breakdown of planned and actual expenditures. PacifiCorp’s explanations for deviations between planned and actual WMP expenditures were extremely brief and provided minimal information. In addition, PacifiCorp stated that it combined or reorganized how it reported planned and actual 2020 WMP expenditures in its EC ARC to comport with changes in the 2021 WMP Guidelines.⁵⁰ As such, PacifiCorp noted that tracking 2020 WMP initiative planned versus actual expenditures was challenging.⁵¹

PacifiCorp reported its largest deviation, by dollar amount, in the “Grid Design and System Hardening” initiative category. As shown in Table 1, this initiative category comprised over 60% of PacifiCorp’s entire 2020 WMP planned budget. PacifiCorp spent approximately \$8.8 million against a planned budget of \$15.4 million (or 57%). PacifiCorp’s explanation for this deviation was that it was “behind schedule”⁵² implementing its covered conductor initiative (5.3.3.3b). Energy Safety notes that, as presented in Table 1, PacifiCorp’s covered conductor initiative alone made up nearly one-third of its entire 2020 WMP planned budget.

Across all the WMP initiative categories, PacifiCorp underfunded three categories (Grid Design and System Hardening, Asset Management and Inspections, and Grid Operations), overspent in six categories (Risk Assessment and Mapping, Situational Awareness, Vegetation Management and Inspections, Data Governance, Resource Allocation Methodology, and Stakeholder Cooperation and Community Engagement), and reported no planned or actual expenditures in one category (Emergency Planning and Preparedness). For initiative categories in which PacifiCorp exceeded its planned budget, on average, it overspent by

⁴⁷ Compliance Operational Protocols, page 10.

⁴⁸ PacifiCorp EC ARC, page 5.

⁴⁹ Compliance Operational Protocols, page 10.

⁵⁰ PacifiCorp EC ARC, page 5.

⁵¹ Id.

⁵² PacifiCorp EC ARC, page 6.

434%.⁵³ For initiative categories in which PacifiCorp spent less than planned in its 2020 WMP, on average, it underspent by 59%.

5.1.4 PSPS Impacts

EC ARCs were also required to include “[a] description of whether the implementation of WMP initiatives changed the threshold(s) for triggering a PSPS event and/or reduced the frequency, scale, scope and duration of PSPS events.”⁵⁴ PacifiCorp reported that the implementation of its WMP initiatives in 2020 “did not have a significant impact on the company’s thresholds for triggering a PSPS event and/or reducing the frequency, scale, and scope and duration of PSPS events.”⁵⁵ Furthermore, PacifiCorp identified its delayed grid hardening work, specifically its lack of covered conductor installation, as a factor in its inability to make a “significant impact” in reducing its PSPS risks. PacifiCorp stated that it “plans to continue reviewing all seven threshold(s) used in its PSPS process and may make changes once grid hardening and other mitigation initiatives are further implemented.”⁵⁶

5.1.5 Energy Safety Identified Defects and Corrective Actions

The final component required EC ARCs to provide “[a] summary of all defects identified by the WSD within the annual compliance period, the corrective actions taken and the completion and/or estimated completion date.”⁵⁷ Pursuant to this requirement, in its EC ARC, PacifiCorp noted that Energy Safety did not identify any defects in the 43 inspections performed in 2020. In addition to discussion on findings from Energy Safety’s inspections, PacifiCorp also provided a summary of actions taken and planned in response to the deficiencies and associated conditions identified in Energy Safety’s approval of its 2020 WMP (see Section 5.7 for Energy Safety’s disposition of PacifiCorp’s 2020 WMP conditions).

5.2 Independent Evaluator Review

PacifiCorp selected NV5 as the independent evaluator to assess its compliance with the 2020 WMP. NV5 issued its PacifiCorp IE ARC on July 1, 2021. Energy Safety carefully weighed the quality and utility of the PacifiCorp IE ARC when evaluating PacifiCorp’s compliance with its approved 2020 WMP.

⁵³ This calculation excludes PacifiCorp’s excess expenditure in the Stakeholder Cooperation and Community Engagement initiative category because the percent difference in expenditure for this category is infinite, due to planned expenditure being reported as \$0 in PacifiCorp’s 2020 WMP.

⁵⁴ Compliance Operational Protocols, page 10.

⁵⁵ PacifiCorp EC ARC, page 6.

⁵⁶ PacifiCorp EC ARC, page 6.

⁵⁷ Compliance Operational Protocols, page 11.

Due to the short time between the execution of its contract and the production of the PacifiCorp IE ARC, and following deliberation with Energy Safety, NV5 proposed to focus its efforts and available resources on PacifiCorp's 2020 WMP initiatives it deemed to have the greatest impact on PacifiCorp's efforts to mitigate its wildfire and PSPS risk.⁵⁸ As a result, of the 86 initiatives in PacifiCorp's 2020 WMP, NV5 reviewed 28 (or approximately 33%).⁵⁹ NV5's findings related to the 28 initiatives reviewed generally fell into three categories as follows:

1. **Compliant** – NV5 indicated having reasonable assurance that PacifiCorp met the WMP target.
2. **Noncompliant** – NV5 determined that PacifiCorp did not meet the WMP target.
3. **Undetermined** – NV5 was unable to determine whether PacifiCorp met the WMP target.

Table 4 below provides a summary of NV5's findings grouped by the above categories.

Table 4: Summary of PacifiCorp IE ARC Findings by Finding Category

Finding Category	No. of Initiatives
Compliant	15
Noncompliant	5
Undetermined	8
Total	28

Errors and conflicting information in the PacifiCorp IE ARC complicated Energy Safety's review. In several instances, NV5 inadvertently referenced the wrong initiative number and conflated targets between them. In another instances, NV5 provided conflicting information in successive paragraphs. For example, NV5 listed initiative 5.3.5.2 twice and in one instance indicated that PacifiCorp provided evidence showing it inspected 909 miles against its 2020 WMP target of 825.⁶⁰ Then, in the proceeding section, NV5 again discusses PacifiCorp's compliance with initiative 5.3.5.2, instead this time indicates that it could only verify inspection of 619 miles.⁶¹ Moreover, Energy Safety discovered that NV5 made other errors conflating initiative numbers within the report. For example, in the summary of noncompliant findings presented in Table 1 of the IE ARC, NV5 stated that it could only verify that 619 of 825 line miles were inspected for initiative 5.3.4.2.⁶² However, in the body of the IE ARC, NV5 attributed the 619 of 825 mile initiative completion shortfall to initiative 5.3.5.2.⁶³ Following

⁵⁸ PacifiCorp IE ARC, page 8.

⁵⁹ PacifiCorp IE ARC, page 13.

⁶⁰ PacifiCorp IE ARC, page 27.

⁶¹ PacifiCorp IE ARC, page 28.

⁶² PacifiCorp IE ARC, page 4.

⁶³ PacifiCorp IE ARC, page 28.

review, Energy Safety believes that NV5 conflated initiative numbers and targets between PacifiCorp's inspection initiatives for asset and vegetation inspections.

Considering the errors and inconsistencies in the IE ARC, Energy Safety finds PacifiCorp's IE ARC to be of limited value in its assessment of PacifiCorp's compliance with the 2020 WMP. Nevertheless, the IE ARC did identify several notable instances of noncompliance that were further corroborated through Energy Safety's other compliance assessments. Energy Safety presents and summarizes those findings of noncompliance below.

1. Initiative 5.3.3.6 – Targeted Pole Replacements: PacifiCorp replaced 29 poles against a target of 189.⁶⁴
2. Initiative 5.3.3.3 – Covered Conductor Installation: PacifiCorp installed 1.4 miles of covered conductor against a 2020 WMP target of 38-line miles.⁶⁵
3. Initiative 5.3.5.3 – Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment: PacifiCorp completed inspection of 184 miles against a 2020 WMP target of 345 miles.⁶⁶

5.3 Inspections

Energy Safety conducted a total of 43 inspection activities of PacifiCorp's infrastructure in 2020. Energy Safety did not identify any defects during its inspections.

5.4 Audits

Energy Safety conducted two audits on PacifiCorp's 2020 WMP activities. Descriptions of the audits and associated findings are presented in the following sections.

5.4.1 Substantial Vegetation Management (SVM) Audit

On August 24, 2022, Energy Safety issued its SVM audit for PacifiCorp. In the audit, Energy Safety evaluated PacifiCorp's quantitative commitments⁶⁷ and verifiable statements⁶⁸ for each of the 21 WMP vegetation management initiatives.⁶⁹ Energy Safety reviewed available information and requested additional documentation to evaluate whether PacifiCorp fully met its quantitative commitments and executed its verifiable statements. Energy Safety

⁶⁴ PacifiCorp IE ARC, page 20.

⁶⁵ PacifiCorp IE ARC, page 33.

⁶⁶ PacifiCorp IE ARC, page 30.

⁶⁷ E.g., miles of lines to inspect, minimum work quality thresholds, etc.

⁶⁸ E.g., holding public meetings with communities regarding future vegetation management activities, training personnel on utilities protocols, etc.

⁶⁹ The 2020 WMP Guidelines contained 20 initiatives in the vegetation management section. PacifiCorp's 2020 WMP listed an additional initiative in the vegetation management section, totaling 21 initiatives.

found PacifiCorp was not compliant in 11 of the 21 vegetation initiatives audited in its 2020 WMP, as detailed in Table 6 below. Six of the 11 noncompliant initiatives are due to PacifiCorp's 2020 WMP referring to activities primarily within initiatives 5.3.5.2, 5.3.5.3, and 5.3.5.18, which were determined to be insufficient upon analysis. The remaining five noncompliant initiatives are due to initiative-specific discrepancies.

Table 5: Energy Safety's Analysis of PacifiCorp's 2020 WMP Vegetation Management Initiatives

2020 WMP Initiative Number	2020 WMP Initiative Name	Determination ⁷⁰
5.3.5.1	Additional Efforts to Manage Community and Environmental Impacts	Compliant
5.3.5.2	Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment	Noncompliant
5.3.5.3	Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment	Noncompliant
5.3.5.4	Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions	Noncompliant
5.3.5.5	Fuel management and reduction of "slash" from vegetation management activities	Compliant
5.3.5.6	Improvement of Inspections	Compliant
5.3.5.7	LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment	Compliant
5.3.5.8	LiDAR Inspections of Vegetation Around Transmission Electric Lines and Equipment	Compliant
5.3.5.9	Other Discretionary Inspection of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations	Not Applicable
5.3.5.10	Other Discretionary Inspection of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations	Not Applicable
5.3.5.11	Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment	Noncompliant ⁷¹

⁷⁰ As used in this context, "Compliant" means the utility was able to provide Energy Safety document(s) to support statements made in its 2020 WMP. "Noncompliant" means the utility was not able to provide Energy Safety document(s) to support commitments and statements made in its 2020 WMP. Energy Safety's analysis did not assess the quality of how said WMP statement was executed.

⁷¹ Under initiative 5.3.5.11 in PacifiCorp's 2020 WMP, PacifiCorp referred to initiative 5.3.5.2. Energy Safety's analysis found that PacifiCorp was noncompliant with initiative 5.3.5.2. Therefore, Energy Safety determines that 5.3.5.11 is also noncompliant.

2020 WMP Initiative Number	2020 WMP Initiative Name	Determination ⁷⁰
5.3.5.12	Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment	Noncompliant ⁷²
5.3.5.13	Quality Assurance / Quality Control of Inspections	Compliant
5.3.5.14	Recruiting and Training of Vegetation Management Personnel	Compliant
5.3.5.15	Remediation of At-Risk Species	Noncompliant ⁷³
5.3.5.16	Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment	Noncompliant ⁷⁴
5.3.5.17	Substation Inspections	Noncompliant ⁷⁵
5.3.5.18	Substation Vegetation Management	Noncompliant ⁷⁶
5.3.5.19	Vegetation Inventory System	Compliant
5.3.5.20	Vegetation Management to Achieve Clearances Around Electric Lines and Equipment	Noncompliant
5.3.5.21	Other – Radial Pole Clearing	Noncompliant

In the SVM audit, Energy Safety specified 11 required Corrective Actions for PacifiCorp to either resolve or explain its failures and required PacifiCorp to provide a Corrective Action response. On September 23, 2022, PacifiCorp timely provided its Corrective Action response and included supporting documentation.⁷⁷

⁷² Under initiative 5.3.5.12 in PacifiCorp's 2020 WMP, PacifiCorp referred to initiative 5.3.5.3. Energy Safety's analysis found that PacifiCorp was noncompliant with initiative 5.3.5.3. Therefore, Energy Safety determines that 5.3.5.12 is also noncompliant.

⁷³ Under initiative 5.3.5.15 in PacifiCorp's 2020 WMP, PacifiCorp referred to initiative 5.3.5.18. Energy Safety's analysis found that PacifiCorp was noncompliant with initiative 5.3.5.18. Therefore, Energy Safety determines that 5.3.5.15 is also noncompliant.

⁷⁴ Under initiative 5.3.5.16 in PacifiCorp's 2020 WMP, PacifiCorp referred to initiative 5.3.5.18. Energy Safety's analysis found that PacifiCorp was noncompliant with initiative 5.3.5.18. Therefore, Energy Safety determines that 5.3.5.16 is also noncompliant.

⁷⁵ Under initiative 5.3.5.17 in PacifiCorp's 2020 WMP, PacifiCorp referred to initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9, and 5.3.5.20. Energy Safety determines initiatives 5.3.5.2 and 5.3.5.3 to be most applicable for program implementation of substation inspections. Therefore, Energy Safety's determination for compliance for initiative 5.3.5.17 is noncompliant.

⁷⁶ Under initiative 5.3.5.18 in PacifiCorp's 2020 WMP, PacifiCorp referred to initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9, and 5.3.5.20. Energy Safety determines initiatives 5.3.5.2 and 5.3.5.3 to be most applicable for program implementation of substation vegetation management. Therefore, Energy Safety's determination for compliance for initiative 5.3.5.18 is noncompliant.

⁷⁷ PacifiCorp 2020 SVM Audit Corrective Action Plan is published on Energy Safety's e-filing system in the 2020 WMP Substantial Vegetation Management Audits docket and available here: <https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2020-SVM> (accessed on September 29, 2022).

After reviewing PacifiCorp's response to the Corrective Actions, on October 19, 2022, Energy Safety issued its final SVM Report finding that PacifiCorp sufficiently addressed seven of the 11 Corrective Actions; therefore, reducing the number of noncompliant initiatives to four.⁷⁸ After reviewing its Corrective Action response Energy Safety found that PacifiCorp substantially complied with the substantial portion of the vegetation management requirements in its 2020 WMP.⁷⁹ However, Energy Safety reaffirmed that PacifiCorp failed to meet the following commitments from its vegetation management section of the 2020 WMP during the compliance period (January 1, 2020 to December 31, 2020):

- Annually completing correction work based on the inspection results (Initiative 5.3.5.2).
- Treating 345 miles of transmission lines (Initiative 5.3.5.3).
- Treating 3,195 miles of lines (Initiative 5.3.5.20).
- Clearing 2,768 LRA poles in 2020 (Initiative 5.3.5.21).

Additionally, three of the remaining insufficient Corrective Action responses were related to PacifiCorp's interpretation of WMP targets as "estimates." PacifiCorp's responses demonstrated a fundamental misunderstanding of the WMP process and its purpose. The WMP is the electrical corporation's proposal for how it will satisfy its obligation to "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."⁸⁰ An initiative target is a commitment pertaining to a wildfire risk mitigation initiative in an electrical corporation's WMP used to measure its performance and compliance.⁸¹ An initiative target, therefore, is not an estimate.

PacifiCorp's fourth remaining insufficient Corrective Action response was related to its lack of detail regarding the nature and source of its resource limitations or contracting issues nor its efforts to mitigate such constraints, resulting in missing its commitment of completing all correction work annually.

5.4.2 Performance Audit of WMP Expenditures

On June 29, 2020, Energy Safety engaged Crowe, LLC to conduct an independent audit of WMP expenditures by the six investor-owned electrical corporations that submitted 2019 and 2020 WMPs.⁸² The purpose of Crowe's audit was to examine expenditures in the execution of investor-owned electrical corporation WMP programs and initiatives relative to their prior General Rate Cases (GRCs). Crowe assessed the relationship between expenses and/or

⁷⁸ Report on PacifiCorp's 2020 SVM Audit.pdf, page 11.

⁷⁹ Pub. Util. Code, § 8386.3(c)(5)(C).

⁸⁰ Pub. Util. Code, § 8386.

⁸¹ See Wildfire Safety Division Wildfire Mitigation Plan Compliance Process - November 2020, page 3, fn. 1.

⁸² The six investor-owned electrical corporations are: Pacific Gas and Electric, Southern California Edison, San Diego Gas & Electric, PacifiCorp, Liberty Utilities, and Bear Valley Electric Service.

investments identified in the 2019 and 2020 WMPs and operating and capital expenditures approved in previous GRCs.

One objective of this audit was to determine whether PacifiCorp's actual expenditures to date, and documented future planned expenditures, comported with the activities approved in the 2019 and 2020 WMPs and for which PacifiCorp received funding in its GRC or similar applications submitted to the CPUC between 2017 and 2020.⁸³ The audit did not contain negative findings related to this objective.⁸⁴

5.5 Data Analysis

Relying upon data timely submitted by PacifiCorp, Energy Safety undertook an analysis of PacifiCorp's WMP initiative performance to ensure that PacifiCorp completed its 2020 initiatives as stated in its WMP.

5.5.1 Initiative Performance Analysis

Energy Safety analyzed whether PacifiCorp achieved its WMP initiative targets. To conduct this analysis, Energy Safety relied upon PacifiCorp's Q4 2020 Quarterly Initiative Update (QIU) submission from April 01, 2021, and PacifiCorp's Q4 2020 QDR.

Energy Safety requires electrical corporations to submit a QIU to track progress on implementation of their WMP initiatives. The purpose of the QIU is for both the electrical corporation and Energy Safety to have a holistic understanding of the electrical corporation's annual targets and projected quarterly progress towards completion of each initiative through the course of the WMP compliance period. In addition to projected progress, electrical corporations report actual progress for each initiative quarterly; this information enables Energy Safety to track the electrical corporation's compliance with its initiative targets throughout the year.

Energy Safety reviewed the Q4 2020 QIU report submitted by PacifiCorp on April 01, 2021, to verify the completion of PacifiCorp's 2020 WMP initiatives and its adherence to the Compliance Operational Protocols.

5.5.1.1 Results

Because PacifiCorp inaccurately and inconsistently reported data related to initiative completion across various documents, analyzing PacifiCorp's initiative performance was difficult. As discussed in Section 4.3, PacifiCorp's 2020 WMP included a total of 86 initiatives allocated across the 10 initiative categories. However, PacifiCorp reported only 26 initiatives

⁸³ PacifiCorp's 2019 and 2020 Wildfire Mitigation Plans (WMPs) Engagement letter.

⁸⁴ PacifiCorp WMP Expenditures Performance Audit Report, date: December 23, 2021.

in its Q4 2020 QIU, making up just 30% of the total initiatives reported in its 2020 WMP. Listed in the table below are the number of initiatives reported across each initiative category in both PacifiCorp's 2020 WMP and Q4 2020 QIU.

Table 6: Initiatives Reported by Category in PacifiCorp's 2020 WMP and Q4 2020 QIU

Initiative Category	No. of Initiatives in 2020 WMP ⁸⁵	No. of Initiatives in Q4 2020 QIU
Risk assessment and mapping	6	1
Situational awareness and forecasting	6	3
Grid design and system hardening	18	5
Asset management and inspections	15	8
Vegetation management and inspections	21	7
Grid operations and protocols	6	0
Data governance	4	1
Resource allocation methodology	0	0
Emergency planning and preparedness	6	0
Stakeholder cooperation and community engagement	4	1
Total	86	26

The 26 initiatives reported in PacifiCorp's Q4 2020 QIU included only initiatives with quantitative targets. Only five of those initiatives had targets reported consistently in both the 2020 WMP and Q4 2020 QIU. In addition, PacifiCorp reported different targets in its Q4 2020 QIU from those included in its approved 2020 WMP for 13 initiatives. These different targets consisted of differences in target values and target units, sometimes both values were reported differently than in PacifiCorp's 2020 WMP. PacifiCorp's Q4 2020 QIU also included quantitative targets and reported progress against those targets for eight initiatives that included no target in its approved 2020 WMP.

In the following tables, Energy Safety presents the results from analysis of PacifiCorp's initiative performance, as reported in its Q4 2020 QIU. Table 9 shows only initiatives with same targets reported consistently between the 2020 WMP and Q4 2020 QIU. Table 10 shows 13 initiatives with different targets reported in the 2020 WMP and Q4 2020 QIU. Table 11 shows eight initiatives with no target in the 2020 WMP but targets and progress reported in the Q4 2020 QIU.

⁸⁵ PacifiCorp 2020 WMP Executive Summary, page 15.

Table 7: Initiatives with same targets reported in 2020 WMP and Q4 2020 QIU

Initiative No.	Utility Initiative Name	Target Units	WMP Target and QIU Target	QIU Actual Progress
5.3.2.1	Installation of Weather Stations	Weather Stations	10	2
5.3.2.2	Pilot 1: DFA	Devices /Projects	4	10
5.3.3.3	Covered Conductor	Line-Miles	38	1.40
5.3.3.6	Targeted Pole Replacement	Poles	189	29
5.3.4.15	Substation Inspections	Inspections	444	444

Energy Safety's review of initiatives presented in Table 9, finds that PacifiCorp failed to meet its targets for three of five initiatives (or 60%):

1. 5.3.2.1 – Installation of Weather Stations: two weather stations installed against a target of 10 (20% complete).
2. 5.3.3.3 – Covered Conductor: 1.4 miles of covered conductor installed against a target of 38 (4% complete).
3. 5.3.3.6 – Targeted Pole Replacement: 29 poles replaced against a target of 189 (15% complete).

Table 8: Initiatives with different targets reported in 2020 WMP and Q4 2020 QIU

Initiative No.	Utility Initiative Name	WMP target	QIU Target	QIU Actual Progress
5.3.2.5	Fire Risk Monitoring	Prepare operational and support teams to activation process	\$ 975,913	\$975,913
5.3.3.9	Relay/Recloser Replacement ⁸⁶	31 Devices	28 Devices	28 Devices
5.3.4.1	Distribution Detailed Inspections	605 miles	10,155 Facilities	10,155 Facilities
5.3.4.2	Transmission Detailed Inspections	122 miles	1,188 Facilities	1,188 Facilities
5.3.4.5	LiDAR/Infrared Transmission Lines	232 miles	866 Line Miles	866 Line Miles
5.3.4.6	Intrusive Pole Inspections	150 miles	3,208 Facilities	3,208 Facilities
5.3.4.11	Distribution Patrol Inspections	1,941 miles	46,281 Facilities	46,281 Facilities

⁸⁶ PacifiCorp 2020 WMP, page 153 states the planned goal was 31 devices while PacifiCorp reported the target as 28 devices in its Q4 2020 QIU. Therefore, PacifiCorp missed target by 3 devices.

Initiative No.	Utility Initiative Name	WMP target	QIU Target	QIU Actual Progress
5.3.4.12	Transmission Patrol Inspections	657 miles	1,654 Facilities	1,654 Facilities
5.3.5.2	Distribution Detailed Inspections of Vegetation ⁸⁷	825 miles	909 Miles	909 Miles
5.3.5.3	Transmission Detailed Inspections of Vegetation ⁸⁸	345 miles	185 Miles	185 Miles
5.3.5.5	Expanded Pole Clearing ⁸⁹	2,768 LRA poles	2,164 Poles	2,164 Poles
5.3.5.20	Vegetation Cycle Clearing ⁹⁰	3,195 miles	\$ 6,699,302	\$6,699,302
5.3.7.1	Data Governance	Develop methods to ensure programmatic associations among data sources; evaluate frequent refresh cycle for assessment on interim performance as compared to these data sources	\$ 181,000	\$181,000

Of the 13 initiatives presented in Table 10, eight included different target units than what was reported in PacifiCorp's 2020 WMP. Of these eight, five initiatives were related to PacifiCorp's inspection activities and conflated units of miles inspected (in 2020 WMP) with facilities inspected (in Q4 2020 QIU). The other three had targets reported as dollar figures in the Q4 2020 QIU when the targets were either qualitative (5.3.2.5 and 5.3.7.1) or reported in different quantitative units (5.3.5.20) in the 2020 WMP.

⁸⁷ While PacifiCorp met quantitative target for this initiative, Energy Safety's SMV audit found this initiative to be noncompliant. See Section 5.4.1 for details.

⁸⁸ PacifiCorp 2020 WMP, page 251, target: 345. SVM audit found PacifiCorp fell short of its target to inspect 345 miles of transmission lines in 2020. See Section 5.4.1 for details. PacifiCorp also did not report actual spend for this initiative.

⁸⁹ Expanded Pole Clearing was reported in PacifiCorp's Q4 2020 QIU as initiative 5.3.5.5 but was reported as initiative 5.3.5.21 Radial Pole Clearing in PacifiCorp's 2020 WMP. Additionally, In PacifiCorp's 2020 WMP, page 248, PacifiCorp reported target of 2,768. Energy Safety's SVM audit found PacifiCorp fell short of its target to clear 2,768 LRA poles in 2020. See Section 5.4.1 for details.

⁹⁰ PacifiCorp 2020 WMP, page 256, target: 3,195, planned budget: \$3,288,977. SVM audit found that PacifiCorp only completed 2,201 miles falling short of its target by 994 miles (69% complete) in 2020. See Section 5.4.1 for details.

Energy Safety's review of initiatives presented in Table 10 finds that PacifiCorp failed to meet its targets for three of 13 initiatives (or 23%):

1. 5.3.3.9 – Relay/Recloser Replacement: 28 devices installed against a 2020 WMP target of 31 (90% complete).
2. 5.3.5.3 – Transmission Detailed Inspections of Vegetation: 185 miles inspected against a 2020 WMP target of 345 (54% complete).
3. 5.3.5.5 – Expanded Pole Clearing: 2,164 poles cleared against a 2020 WMP target of 2,768 (78% complete).

In addition to the three initiatives identified above where PacifiCorp failed to meet its targets, an additional two initiatives (5.3.5.2 and 5.3.5.20), which were found noncompliant based on Energy Safety's SVM audit (See Section 5.4.2). For initiative 5.3.5.2, Energy Safety finds that PacifiCorp failed to complete quantitative aspects of this initiative in 2020. For initiative 5.3.5.20, Energy Safety found that PacifiCorp only completed 2,201 miles of vegetation clearing against a 2020 WMP target of 3,195 (or 69% completion).

PacifiCorp also reported targets and progress for eight initiatives, as shown in Table 11 below, even though these initiatives did not have 2020 WMP targets. For all these initiatives, PacifiCorp's reported progress identically matched its target established in its Q4 2020 QIU.

Table 9: Initiatives with no 2020 WMP target but target reported in Q4 2020 QIU

Initiative No.	Utility Initiative Name	QIU Target Units	QIU Target	QIU Actual Progress
5.3.1.1	Risk Modeling Platform	Financial (\$)	186,000	186,000
5.3.3.2	Circuit Breaker Maintenance	Financial (\$)	148	148
5.3.3.5	Crossarm Replacement	Financial (\$)	272,000	272,000
5.3.4.14	Inspection QA/QC	Financial (\$)	36	36
5.3.5.11	WM Readiness Patrol: Dist.	Line Miles	784	784
5.3.5.12	WM Readiness Patrol: Trans.	Line Miles	323	323
5.3.5.14	Vegetation QA/QC	Line Miles	1,107	1,107
5.3.10.1	Community Engagement	Financial (\$)	36,474	36,474

Energy Safety also reviewed PacifiCorp's 2020 WMP planned budget and actual expenditures as reported in its Q4 2020 QDR.⁹¹ Based on this review, Energy Safety finds that PacifiCorp significantly exceeded its budget for four initiatives in which it also failed to meet its WMP targets. The results of this review are presented in Table 12 below.

⁹¹ PacifiCorp submitted Q4 2020 QDR on March 5, 2021.

Table 10: PacifiCorp's Spend Four of Eight Missed 2020 QIU Initiatives

Initiative Name (Number)	WMP Target	Actual Progress	Planned Budget ⁹²	Actual Spend ⁹³	Spend Difference	Note/ Reasoning ⁹⁴
Advanced weather monitoring and weather stations (5.3.2.1)	10 devices	2 devices (20% complete)	\$166,000	\$214,015	\$48,015 (29% over planned budget)	Delays in siting and installation; Iterative and longer process to ensure quality data is received; All remaining weather stations from 2020 are purchased and in the process of being installed prior to fire season.
Covered conductor installation (5.3.3.3)	38 miles	1.4 miles (4% complete)	\$207,237 per mile	\$3,088,712 per mile ⁹⁵	\$2,881,475 per mile (1,390% over planned budget)	Significant delays due to start up efforts and onboarding contractors to support the design and estimating phase of the projects.
Installation of system automation equipment (5.3.3.9)	31 devices	28 devices (90% complete)	\$3,029,013	\$3,947,681	\$918,668 (30% over planned budget)	Reported as complete in Q4 2020 QIU; however, the 2020 WMP states that the planned goal was 31 devices while PacifiCorp reported target of

⁹² PacifiCorp 2020 WMP tables 21-30.

⁹³ Q4 2020 QDR.

⁹⁴ PacifiCorp 2020 Q4 QIU.

⁹⁵ In its Q4 2020 QDR, PacifiCorp reported a total spend of \$4,324,197 for this initiative. PacifiCorp reported actual progress of 1.4 miles for this initiative in Q4 2020 QIU. Actual spend per miles calculated as: $\$4,324,197 / 1.4 = \$3,088,712$.

Initiative Name (Number)	WMP Target	Actual Progress	Planned Budget ⁹²	Actual Spend ⁹³	Spend Difference	Note/ Reasoning ⁹⁴
						28 devices in its Q4 2020 QIU.
Vegetation management to achieve clearances around electric lines and equipment (5.3.5.20)	3,195 miles	2,201 miles ⁹⁶ (69% complete)	\$3,288,977	\$6,699,302	\$3,410,325 (104% over planned budget)	PacifiCorp's response for the missed target is that the target was an "estimate" based on miles completed in 2019. ⁹⁷

In addition to the analysis performed for initiative completion PacifiCorp's Q4 2020 QIU planned initiatives, Energy Safety found one initiative in PacifiCorp's 2020 WMP: 5.3.3.18 "Other – Replace small size Cu conductor (Replace small size Cu conductor)" that was not reported in PacifiCorp's Q4 2020 QIU. For initiative 5.3.3.18, PacifiCorp set a target to replace three miles of small diameter copper and iron conductors with aluminum stranded conductor on its distribution system in 2020.⁹⁸ According PacifiCorp's Q4 2020 QDR, table 12⁹⁹ and 2021 WMP,¹⁰⁰ PacifiCorp reported completing zero miles for this initiative in 2020.

Overall, of the 19 initiatives (18 reported in its Q4 2020 QIU and additional initiative 5.3.3.18 that also had a target set in its 2020 WMP), Energy Safety finds that PacifiCorp failed to achieve its target for eight of them (or 42%). In addition, for one of the initiatives in which PacifiCorp met its target, initiative 5.3.5.2 – Distribution Detailed Inspections of Vegetation, Energy Safety's SVM audit found PacifiCorp to be noncompliant with other qualitative commitments within that initiative, bringing the total of noncompliant initiatives to nine of 19 (or 47%). Energy Safety finds that PacifiCorp also significantly overspent compared to its planned budget on four of the eight initiatives in which it did not meet its targets. Notably, PacifiCorp exceeded its planned expenditure for costs per mile of covered conductor installation (initiative 5.3.3.3) by nearly 1,400% whilst only completing 4% of its target. This deviation was further magnified in consideration of the fact that PacifiCorp's 2020 WMP allocated nearly one-third of its total budget to this initiative (see Table 1). Additionally,

⁹⁶ DR-096-SVM-20220516, response to question 23, Attach OEIS 8.23.xlsx.

⁹⁷ PacifiCorp 2020 SVM Audit Corrective Action Plan.pdf, page 9.

⁹⁸ PacifiCorp 2020 WMP, page 164.

⁹⁹ PacifiCorp's Q4 2020 QDR, table 12, row 30.

¹⁰⁰ PacifiCorp 2021 WMP, page 137.

PacifiCorp failed to provide status, targets, and actual progress for all initiatives in its 2020 WMP in its Q4 2020 QIU as required by the Compliance Operational Protocols.¹⁰¹

5.6 Wildfire and Risk Reduction Outcomes

PacifiCorp has seen a steady increase in extreme fire weather events since 2015 with a significant spike in 2017 and the highest value reported to date in 2020. Energy Safety uses a metric, the red flag warnings circuit mile days (RWCMD) for overhead assets, to depict wildfire risk normalized for the size of an electrical corporation's service territory. Use of this metric allowed for comparisons across reporting years and enabled assessment of performance in 2020 relative to previous trends from 2015-2019. As noted in Figure 1 below, the RWCMD experienced in 2020 represented the largest value (i.e., worst fire weather and greatest exposure) over the six-year reporting period from 2015 through 2020. This steady increase in RWCMDs over the last six years underscores the importance of effective wildfire mitigation planning and execution of mitigation efforts.

Energy Safety requires electrical corporations to report data, such as ignitions in the HFTD, that will enable Energy Safety to, over time, assess whether an electrical corporation's wildfire mitigation planning activities successfully achieve the primary objective of a WMP – reducing catastrophic wildfire risk and reliance on PSPS. As noted earlier in this document, it is not enough to solely evaluate whether an electrical corporation met its targets for implementing specific initiatives if ultimately the electrical corporation did not reduce the risk of catastrophic wildfires.

In 2020, Energy Safety evaluated a variety of metrics (calculations based on data provided) to set a baseline that can be measured against in future years, including several metrics adopted in the 2020 WMP Guidelines.¹⁰² In addition to these metrics, Energy Safety also utilized the knowledge and expertise gained since the adoption of the 2020 WMP Guidelines to present additional metrics correlated to PacifiCorp's wildfire risk. Where data was available and applicable, Energy Safety evaluated different permutations of ignition risk metrics to also account for geographical risk factors, as indicated by HFTD tiers, and causal information.

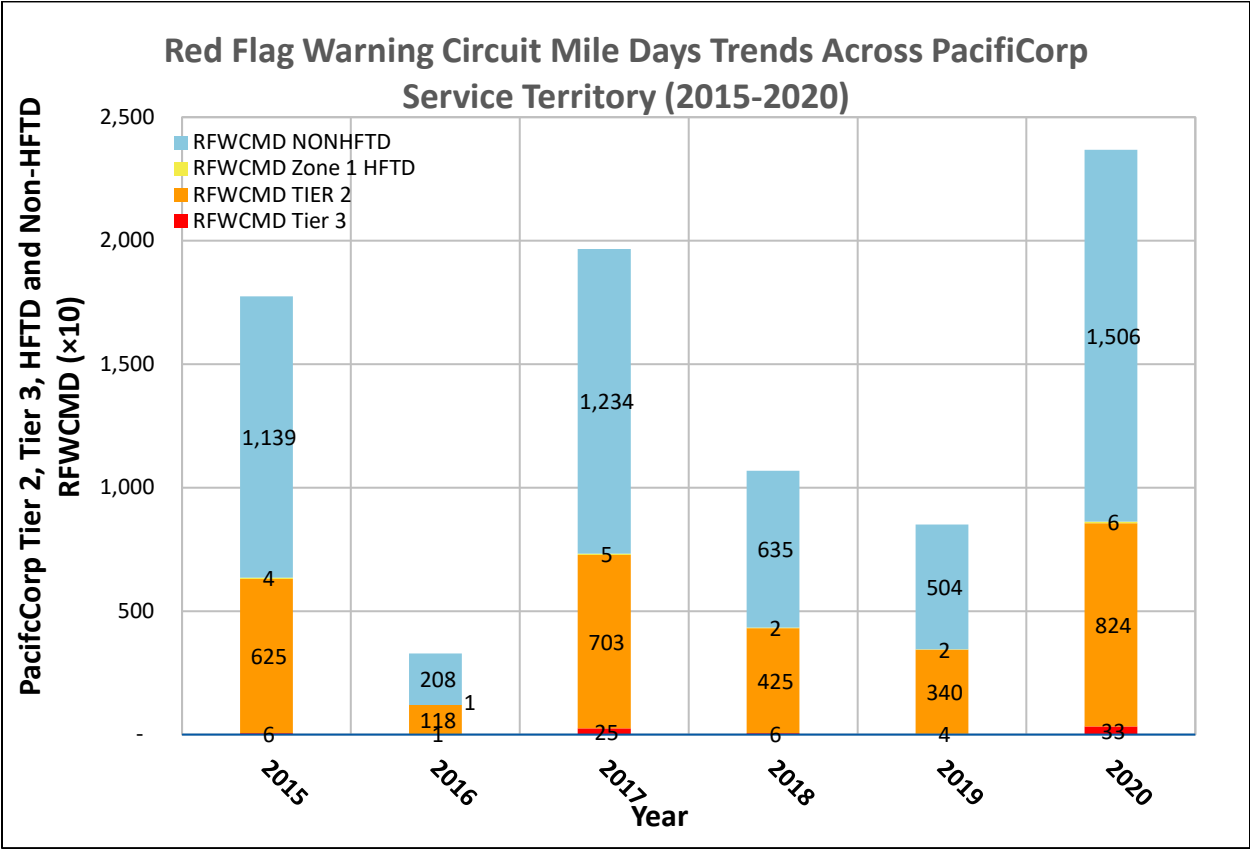
Energy Safety relied upon data reported in an electrical corporation's 2020 WMP as well as Quarterly Data Report (QDR) submissions from May 3, 2021. Energy Safety also performed analysis that compared the electrical corporation's performance during the 2020 WMP compliance period to trends from previous years.¹⁰³ Metrics analyzed are discussed in the following sections.

¹⁰¹ Energy Safety's Compliance Operational Protocols, February 16, 2021, page 6.

¹⁰² See Attachment 4 of CPUC Resolution WSD-001, titled "WMP Metrics."

¹⁰³ Energy Safety looked at previous year performances dating back to 2015, where available and reported in PacifiCorp's data submissions, or any year thereafter for which data was available and reported.

Figure 1: Red Flag Warning Circuit Mile Days in PacifiCorp Service Territory (2015-2020)



5.6.1 Ignition Risk

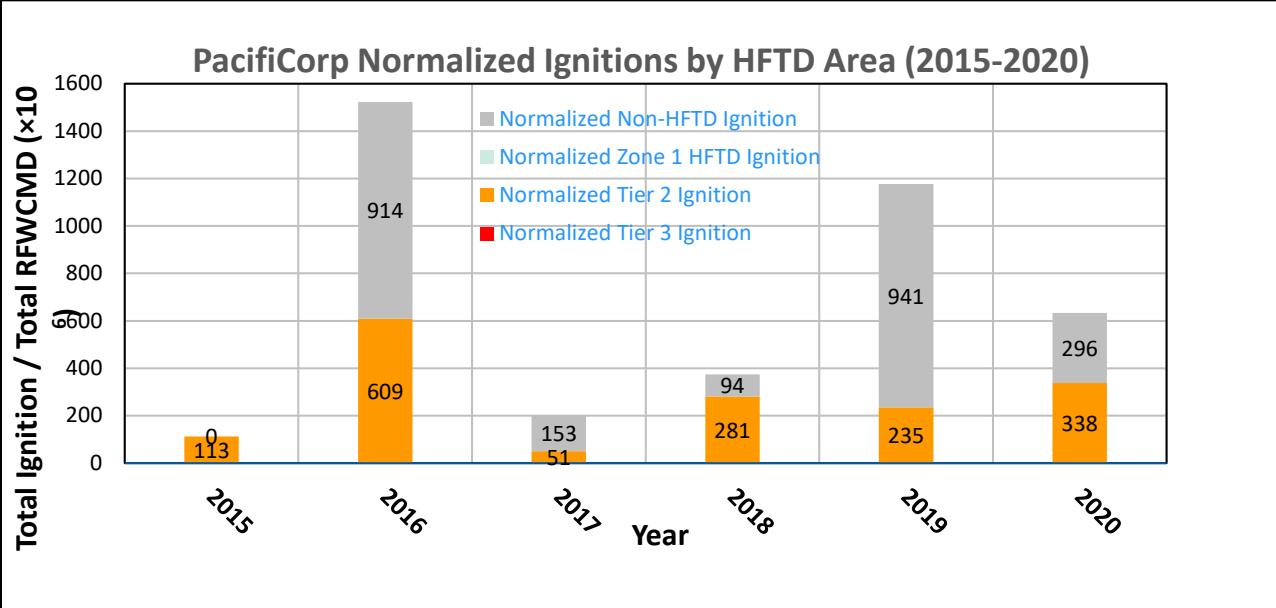
Energy Safety evaluated ignition risk as a function of various metrics reported in PacifiCorp’s QDR submission. PacifiCorp reported these risk metrics in Table 7.1 and Table 7.2 of its QDR submission (QDR Table 7.1 and QDR Table 7.2, respectively). Ignition risk metrics considered include:

1. **Ignitions** – incidents in which electrical corporation infrastructure was involved
2. **Wire down events** – incidents in which overhead electrical lines fall to the ground or land on objects
3. **Vegetation-caused outages** – outages experienced in which the cause was determined to be vegetation contact with electrical lines
4. **Unplanned outages** – all unplanned outages experienced

5.6.1.1 Ignition Data

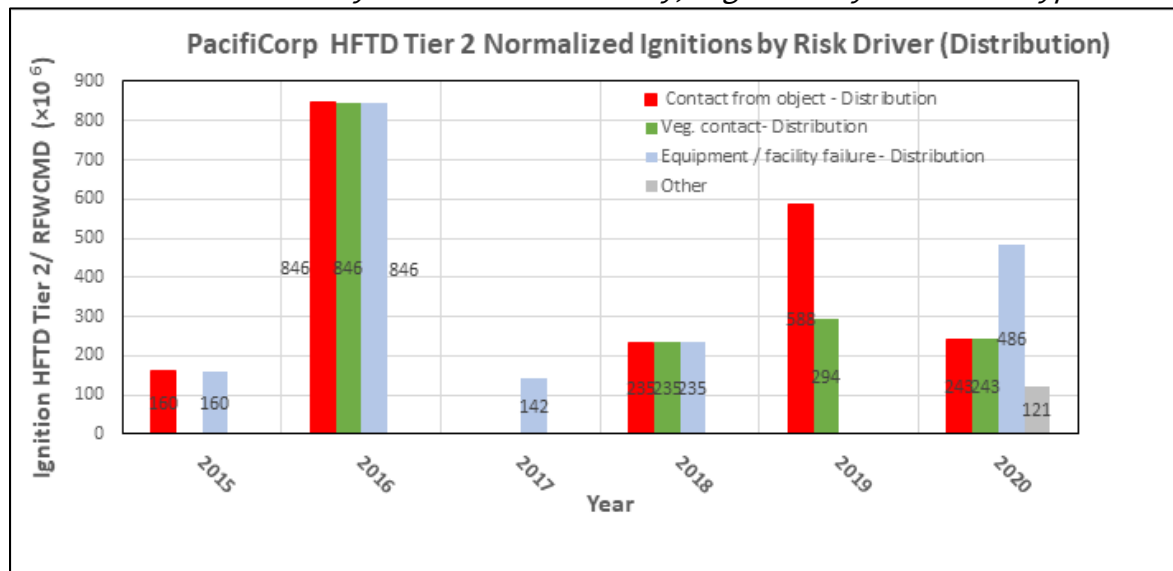
QDR Table 7.2 includes data on PacifiCorp’s ignitions from 2015 through 2020, plotted below in Figure 4 which shows the ignitions across PacifiCorp’s service territory normalized by the total RFWCMD for each year and broken out by location (i.e., Tier 3 HFTD areas, Tier 2 HFTD areas, Zone 1 HFTD areas, and non-HFTD areas). Figure 3 plots the total normalized ignitions across PacifiCorp’s service territory, and Figure 4 and 5 show the ignitions in Tier 2 HFTD areas of PacifiCorp’s service territory normalized by the RFWCMD in Tier 2 only for each year. In 2020, PacifiCorp reported a total of 14 ignition events, with half occurring in Tier 2 HFTD areas and the other half in non-HFTD areas. PacifiCorp did not report any ignitions in Tier 3 HFTD areas in 2020.

Figure 2: PacifiCorp Normalized Ignitions from 2015-2020 Normalized by Total RFWCMD



As shown in the figure above, following a peak in 2016, PacifiCorp’s total normalized ignitions increased steadily from 2017 through 2019, and decreased in 2020. In 2020, PacifiCorp’s normalized ignitions increased by over 30% in Tier 2 HFTD areas, when compared to the five-year average from 2015 through 2019, whereas the normalized ignitions in non-HFTD areas decreased by 30% over the five-year average.

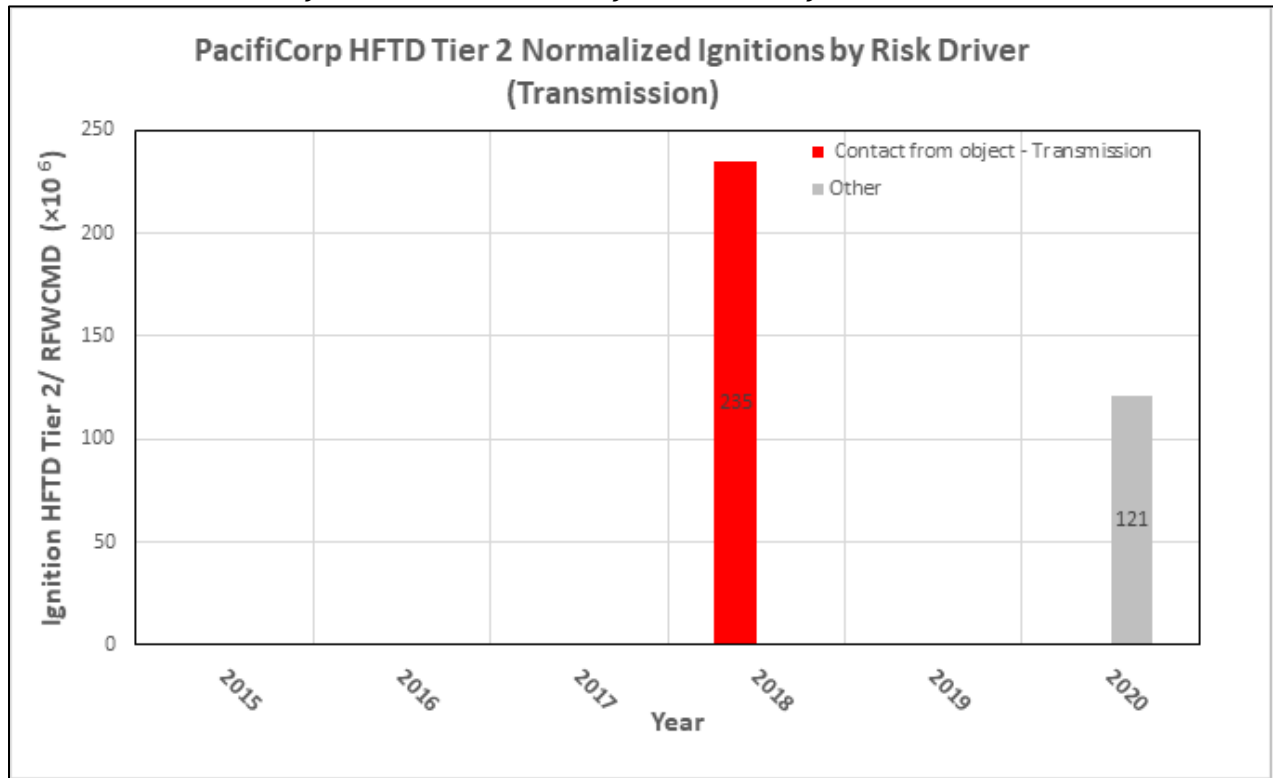
Figure 3: PacifiCorp Distribution Normalized Ignitions in Tier 2 HFTD Areas from 2015-2020 Normalized by RFWCMD in Tier 2 Only, Organized by Risk Driver Type



As shown in the figure above, PacifiCorp’s ignitions on its distribution system are primarily driven by contact from objects, vegetation contact, and equipment/facility failure. When compared to the historical five-year averages from 2015 through 2019, PacifiCorp’s normalized ignitions due to contact from objects and vegetation contact decreased by 34% and 12%, respectively, in 2020. Conversely, PacifiCorp’s normalized ignitions due to equipment/facility failures increased by 76% in 2020, as compared to the historical five-year average. Also, 2020 was the first year in which PacifiCorp reported ignitions from “other”¹⁰⁴ risk drivers on its distribution infrastructure in Tier 2.

¹⁰⁴ “Other” ignition risk drivers on distribution assets in the plots include instances of contamination, utility work, vandalism and theft, all other and other unknown other ignition causes.

Figure 4: PacifiCorp Transmission Ignitions in Tier 2 HFTD Areas from 2015-2020 Normalized by RFWCMD in Tier 2 Only Broken out by Risk Driver

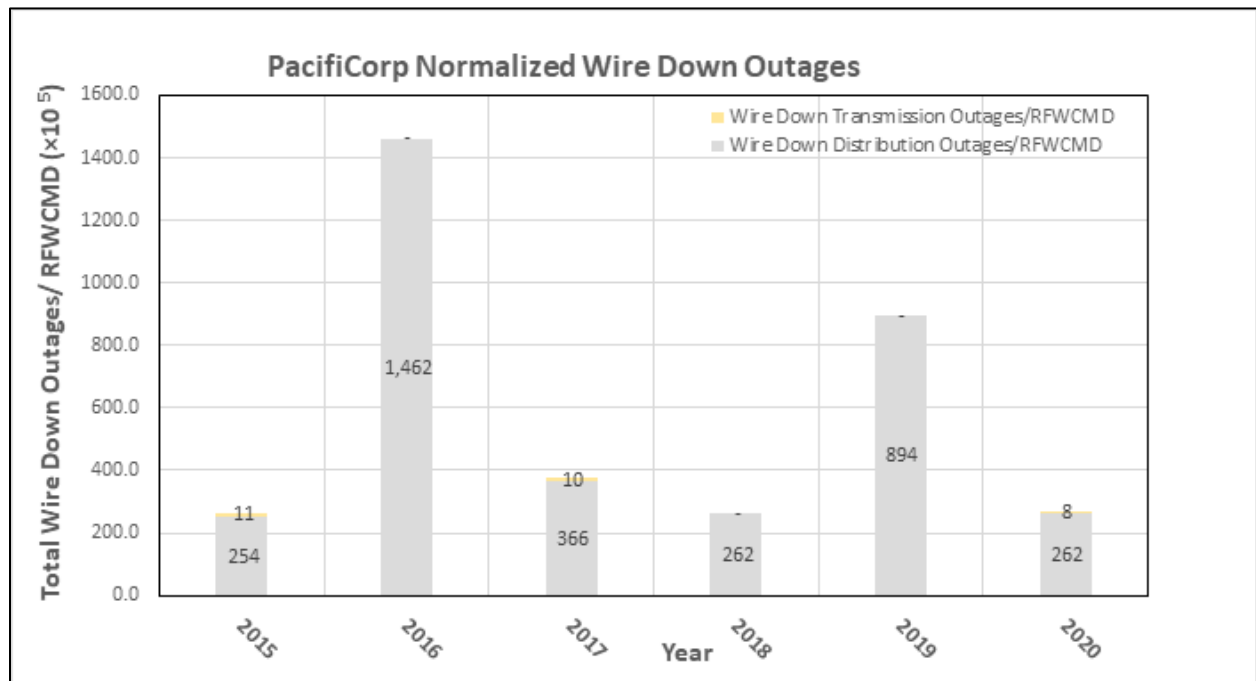


PacifiCorp only reported one ignition on its transmission infrastructure in 2020. Given the limited sample size of data, Energy Safety did not identify any trends from analysis of PacifiCorp's normalized ignitions on the transmission system in Tier 2 HFTD areas.

5.6.1.2 Wire Down Event Data

QDR Table 7.1, metrics 1 through 16 include data on PacifiCorp's distribution and transmission wire down events from 2015 through 2020, which were normalized for RFWCMD and plotted below in Figure 5. Wire down events can be a precursor to ignitions; therefore, Energy Safety will look for a downward trend over time.

Figure 5: PacifiCorp Total Normalized Wire Down Events from 2015-2020 Normalized by RFWCMD

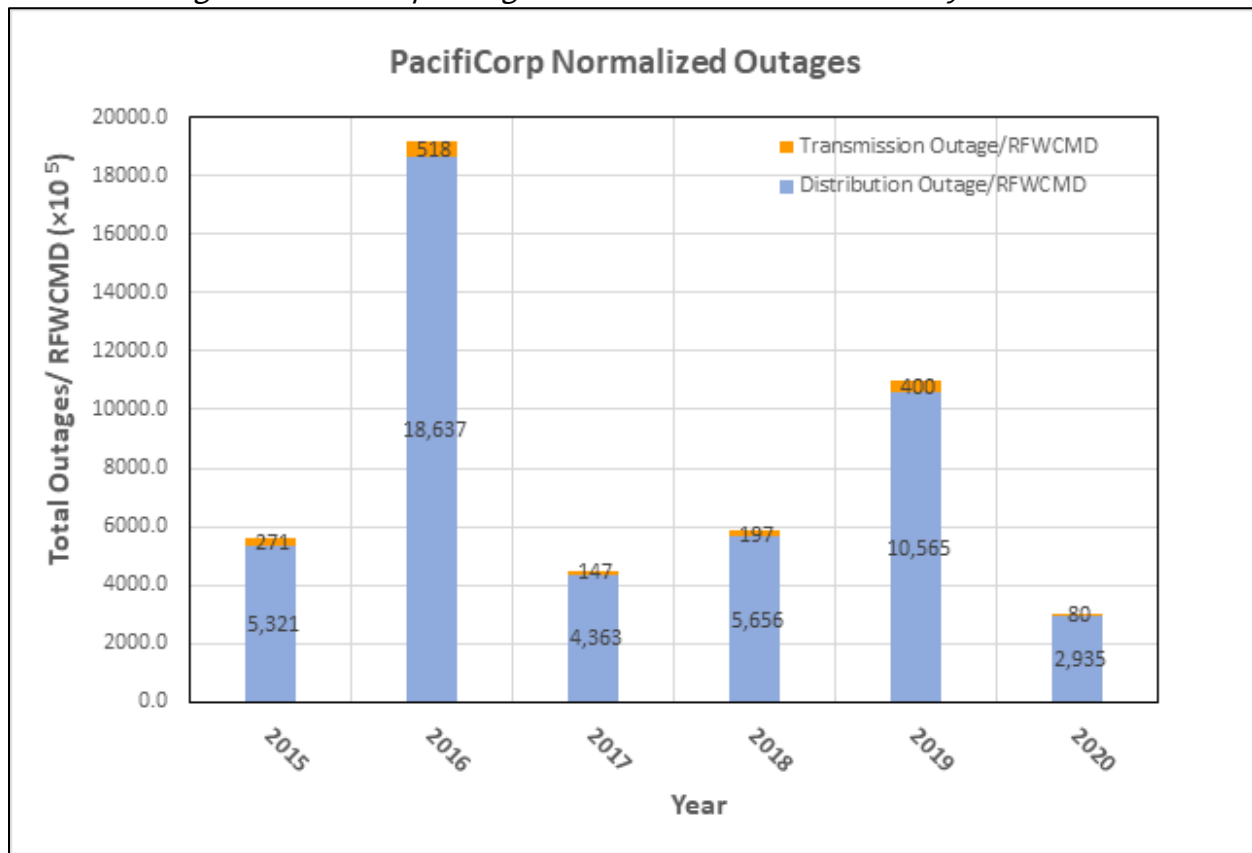


As shown in the above figure, no discernable trends were identified in PacifiCorp's normalized wire down data. Each year during the reporting period, PacifiCorp oscillated between increases and decreases in this metric. However, when compared to the five-year average from 2015 through 2019, PacifiCorp's normalized wire down events decreased by 60% in 2020.

5.6.1.3 Outage Data

QDR Table 7.1, metrics 17 through 32 include data on distribution and transmission outages of all cause types from 2015 through 2020. Unplanned or unscheduled outages correlate to a potential for ignitions on the system, although they are not as strong a predictor as wire down events. Figure 6 below plots PacifiCorp's transmission and distribution outages normalized for RFWCMD.

Figure 6: PacifiCorp Outages from 2015-2020 Normalized by RFWCMD



As shown in the figure above, normalized distribution outages show a general downward trend from a peak in 2016, with 2020 representing PacifiCorp's lowest reported normalized outages to date. When compared to the five-year average from 2015 through 2019, in 2020, PacifiCorp's normalized distribution outages decreased by 67%. Similarly, PacifiCorp's normalized transmission outages decreased by nearly 74% in 2020 when compared to the historical five-year average from 2015 through 2019.

5.6.1.4 Vegetation-Caused Outage Data

QDR Table 7.1, metrics 17a and 25a include data on transmission and distribution outages that are caused by vegetation contact from 2015 through 2020. Figure 7 below plots PacifiCorp's transmission and distribution vegetation contact-caused outages normalized for RFWCMD.

Figure 7: PacifiCorp Normalized Vegetation Contact Outages from 2015-2020 Normalized by RFWCMD

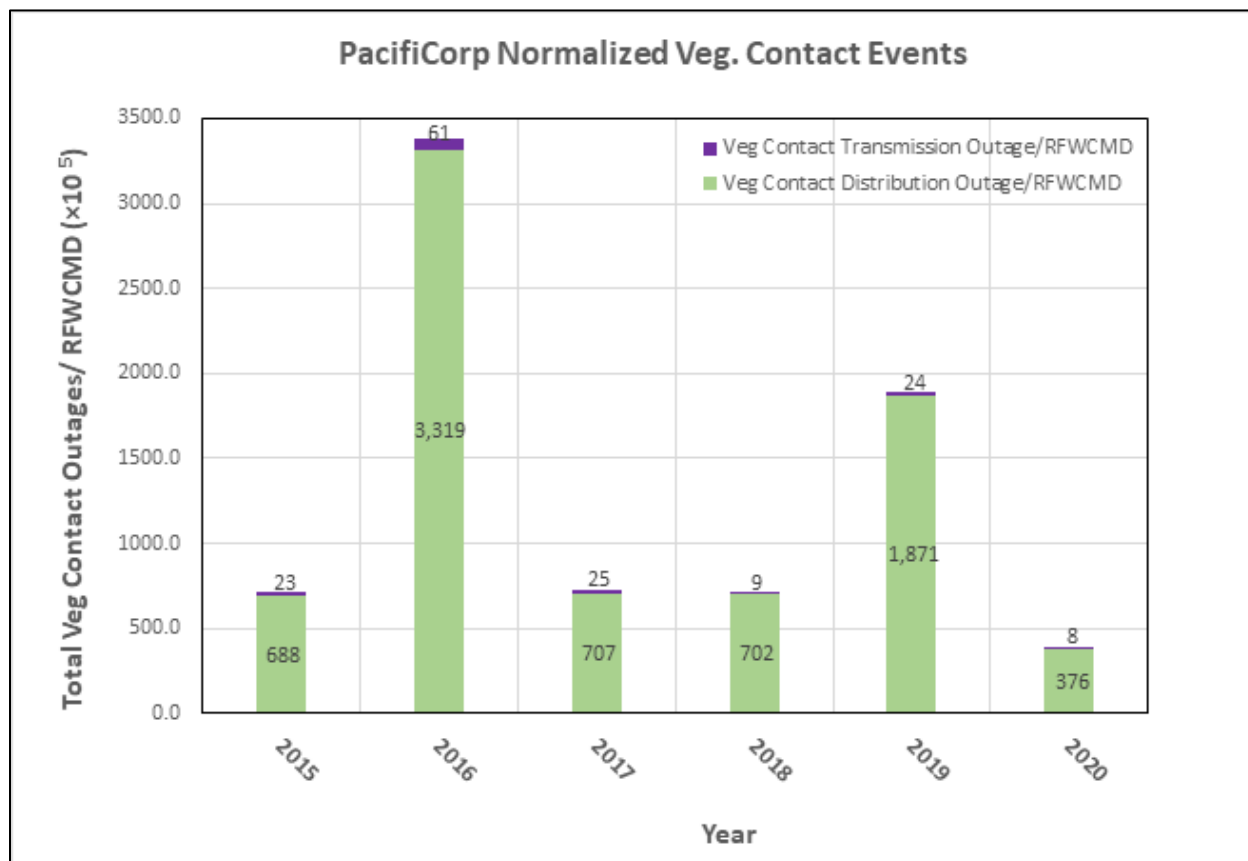


Figure 7 above shows a similar outage trend as Figure 6 – spikes in outages in 2016 and 2019 followed by a significant decrease in both distribution and transmission vegetation contact outages in 2020. Between 2019 and 2020, distribution vegetation contact outages decreased 80 percent and transmission vegetation contact outages decreased 67 percent.

5.6.2 PSPS Risk

While effective as a wildfire mitigation measure, PSPS carries its own risks to customers. As such, electrical corporations must reduce the duration, scope, and frequency¹⁰⁵ of PSPS events.¹⁰⁶ With the exception of San Diego Gas & Electric Company, for most electrical corporations, broad use of PSPS as a wildfire mitigation measure did not occur until 2018.

¹⁰⁵ [2021 Performance Metrics Data Templates](#) titled “Attachment-2.3-to-wsd-011-2021-performance-metrics-data-templates.xlsx,” sheet “Table 11”; duration is defined as customer hours per year; scope is defined as circuit-events, measured in number of events multiplied by number of circuits de-energized per year; frequency is defined as number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability per year.

¹⁰⁶ Pub. Util. Code, § 8386(c)(6) and (c)(7).

PacifiCorp did not execute its first PSPS event until 2020. As such, limited data is available to conduct a trend analysis.

PacifiCorp reported data on its use of PSPS and other PSPS metrics in Table 11 of its QDR (QDR Table 11).¹⁰⁷ Presented in the table below are the metrics related to PacifiCorp's lone PSPS event in 2020. While historical data was not available for comparison of performance in 2020 or historical trend analysis, Energy Safety will continue to monitor and evaluate PacifiCorp's PSPS metrics in future compliance reviews.

Table 11: PSPS Metrics for PacifiCorp's 2020 PSPS Event

PSPS Metric	Metric Units	Value
Frequency of PSPS Events	Number of instances where circuits were de-energized	1
Customers Impacted	Number of customers impacted by PSPS	2,559
Duration of PSPS Events	Number of customer hours of interruption from PSPS events	20,674
Critical Infrastructure Impacted	Number of critical infrastructure locations impacted multiplied by hours offline	53

5.6.3 Identified and Unresolved Risk

To ensure safe operations and the reduction of wildfire risk, Energy Safety expects that electrical corporations maintain electrical lines and equipment through: (1) thorough inspection of those lines and equipment to identify conditions that increase wildfire risk, and (2) expedient remediation of conditions identified during inspections to reduce known wildfire risks. Unresolved conditions leave known wildfire risk on the system, thus increasing the likelihood of a catastrophic wildfire caused by electrical lines and equipment.

In Table 1 of its QDR (QDR Table 1), PacifiCorp reported data on findings from inspections it performed in accordance with its 2020 WMP.¹⁰⁸ The inspection data provided in QDR Table 1 includes detail on:

- Asset classification (i.e., transmission or distribution)
- Inspection type (i.e., detailed inspection, patrol inspection, other inspection)
- Location (i.e., in or out of HFTD areas)
- Priority of findings (i.e., Level 1, Level 2, or Level 3)¹⁰⁹
- Number of circuit miles inspected for each inspection type

¹⁰⁷ Broad use of PSPS as a wildfire mitigation measure did not occur until 2018, and as such, limited data is available for analysis.

¹⁰⁸ QDR Table 1, Metric 1 titled, "Grid Condition Findings."

¹⁰⁹ CPUC's GO 95, Rule 18 identifies and defines priority levels, and associated corrective action timeframes, applicable to identified noncompliance issues. Level 1 findings are of highest concern and Level 3 are of lowest concern.

The priority levels of inspection finding data reported in QDR Table 1 are derived from the CPUC's GO 95, Rule 18, which outlines requirements for electrical corporation maintenance programs and resolution of safety hazards. Rule 18 identifies three priority levels, described below:

1. **Level 1** – an immediate risk of high potential impact to safety or reliability requiring immediate corrective action.¹¹⁰
2. **Level 2** – any other risk of at least moderate potential impact to safety or reliability requiring corrective action no later than 36 months.¹¹¹
3. **Level 3** – any risk of low potential impact to safety or reliability requiring corrective action within 60 months with some exceptions.¹¹²

In addition to data on inspection findings, Energy Safety assessed data on PacifiCorp's progress on fixing the unresolved conditions. Energy Safety requested data from PacifiCorp on the number and type of conditions it fixed during the 2020 WMP compliance period.¹¹³ The data on conditions fixed by PacifiCorp is of the same detail and includes the same assumptions as the inspection finding data in QDR Table 1.¹¹⁴

Table 13 below provides an overview of the circuit miles PacifiCorp inspected in 2020, broken out by inspection type.

Table 12: Miles of Inspection Completed by PacifiCorp in 2020

Inspection Type	Distribution Miles Inspected		Transmission Miles Inspected		Transmission & Distribution Miles Inspected	
Patrol	1,945	76.3%	767	77.2%	2,712	76.5%
Detailed	605	23.7%	226	22.8%	831	23.5%
Total	2,550	100%	993	100%	3,543	100%

PacifiCorp completed 3,543 miles of inspections in 2020; approximately 72% of which was performed on its distribution lines and equipment. In total, patrol inspections made up

¹¹⁰ Examples of Level 1 Findings: Inadequate clearances, bare conductor contacting communication cable / drop, burned jumper or connector, burned high voltage conductor, Broken / damaged guy in proximity to high voltage conductor, excessively damaged or leaning pole, broken / damaged / decayed crossarm, Vegetation contacting or nearly contacting high voltage conductor ...etc.

¹¹¹ Examples of Level 2 Findings: Insulated conductor contacting communication cable / drop, burned high voltage conductor, burned jumper or connector, inadequate clearances, broken / damaged / missing insulator or cutout, pole leaning/broken/ or climbing space is obstructed, vegetation causing strain or abrasion on low voltage conductor, exposed / broken / missing at public or communication level ...etc.

¹¹² See CPUC GO 95, Rule 18(B)(1)(a).

¹¹³ Energy Safety Data Request DR 090 sent on May 10, 2022.

¹¹⁴ PacifiCorp's response to Energy Safety Data Request DR 090 received on May 20, 2022.

approximately 76.5% of all inspections performed, while detailed inspections made up the rest.

Table 14 and Table 15 below detail the number of inspection findings and fixes, broken out by priority level, PacifiCorp made on its distribution and transmission infrastructure, respectively.

Table 13: Conditions Found and Fixed on PacifiCorp's Distribution Infrastructure in 2020

Analysis	Level 1	Level 2	Level 3	Total
Condition Found	361	5,398	2,396	8,155
Condition Fixed	335	3,171	718	4,224
Difference	26 More Found	2,227 More Found	1,678 More Found	3,931 More Found

Table 14: Conditions Found and Fixed on PacifiCorp's Transmission Infrastructure in 2020

Analysis	Level 1	Level 2	Level 3	Total
Condition Found	23	459	303	785
Condition Fixed	21	297	41	359
Difference	2 More Found	162 More Found	262 More Found	426 More Found

As shown in Table 14 and 15 above, in 2020, PacifiCorp found more conditions than it was able to repair across all priority levels on both its transmission and distribution infrastructure. Of particular concern, in 2020, PacifiCorp fixed 93% of the priority Level 1 conditions found on its distribution infrastructure, leaving 26 issues unresolved. Of priority Level 1 issues found on the transmission infrastructure, PacifiCorp fixed 91% of the conditions leaving two Level 1 issues unresolved. As detailed above, priority Level 1 conditions are defined as presenting an immediate risk of high potential impact to safety or reliability requiring immediate corrective action.

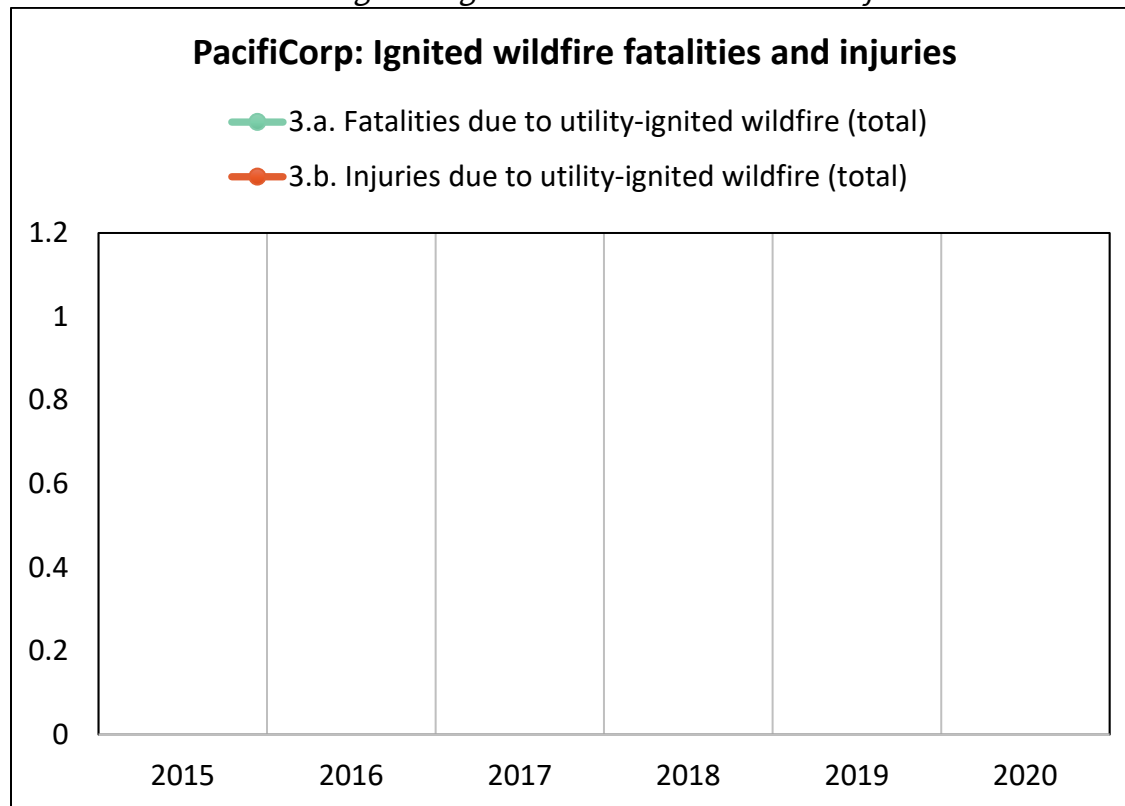
5.6.4 Wildfire Outcomes

Table 2 of the QDR (QDR Table 2) provides data on impacts from electrical corporation-related wildfires including:

1. Acres burned
2. Structures damaged/destroyed
3. Injuries/fatalities
4. Value of assets destroyed

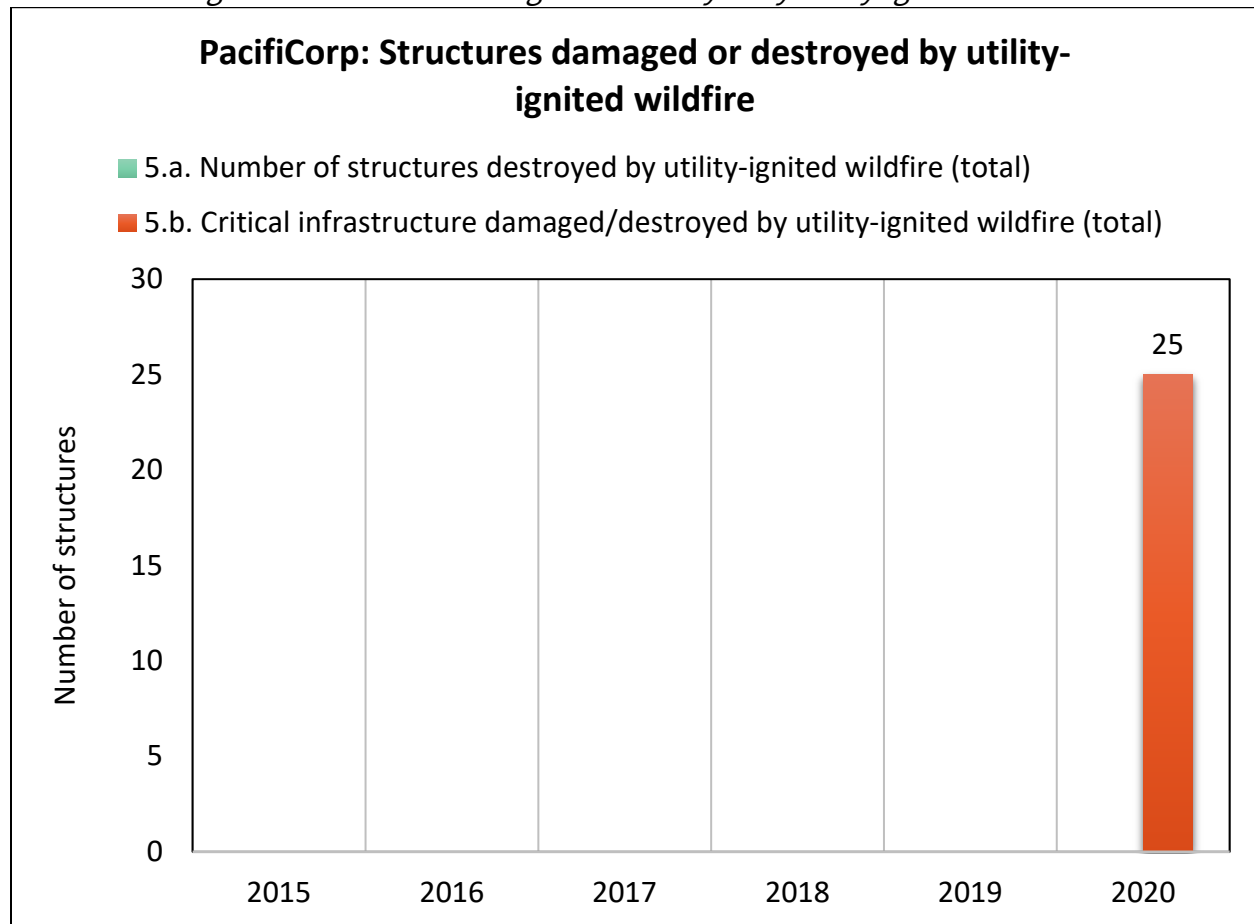
Presented in the figures below are PacifiCorp's performance relative to the above outcome metrics from 2015-2020.

Figure 8: Ignited wildfire fatalities and injuries



PacifiCorp reported no fatalities or injuries due to wildfires ignited from its infrastructure during the reporting period.

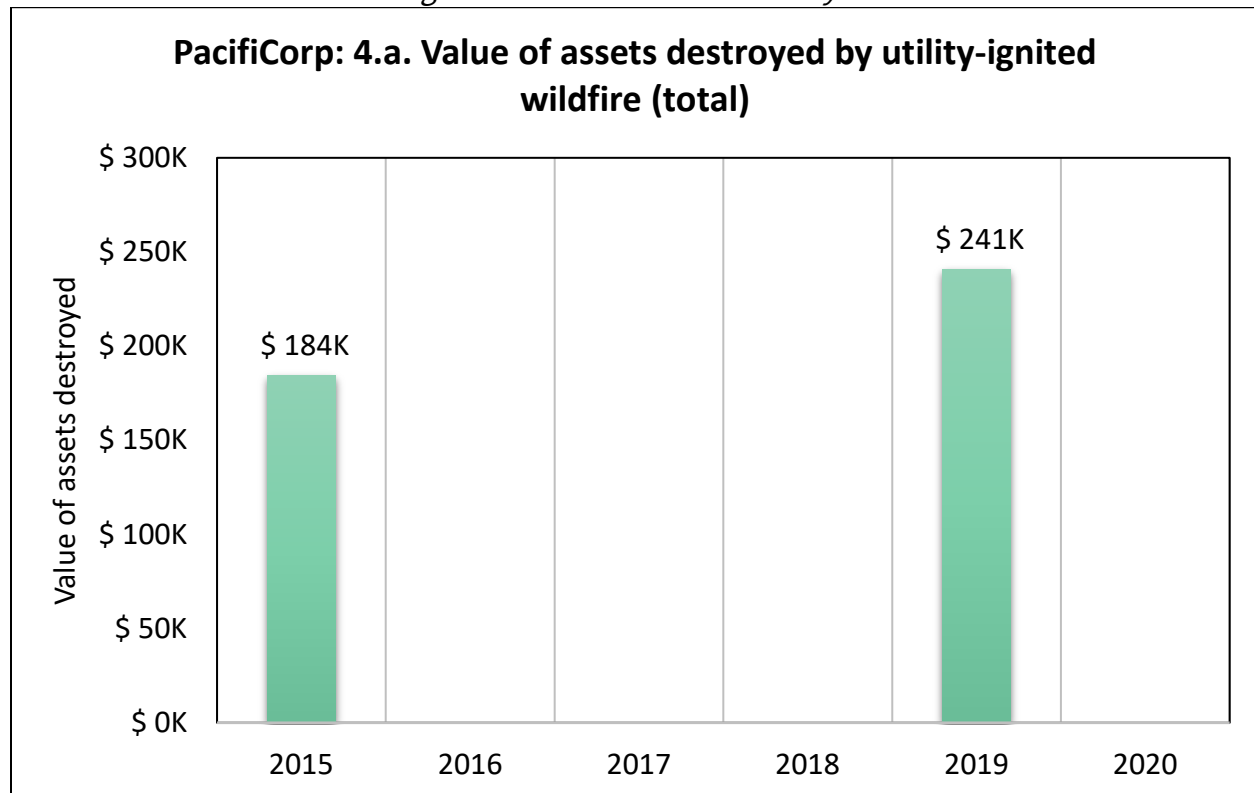
Figure 9: Structures damaged or destroyed by utility-ignited wildfire



PacifiCorp reported the damage or destruction of 25 structures providing critical infrastructure¹¹⁵ in 2020. These damages represented PacifiCorp's first reported structure damages since 2015. Considering the rise in extreme fire weather events in PacifiCorp's service territory, as shown in Figure 1, Energy Safety will continue to closely monitor PacifiCorp's performance in this metric in future compliance reviews.

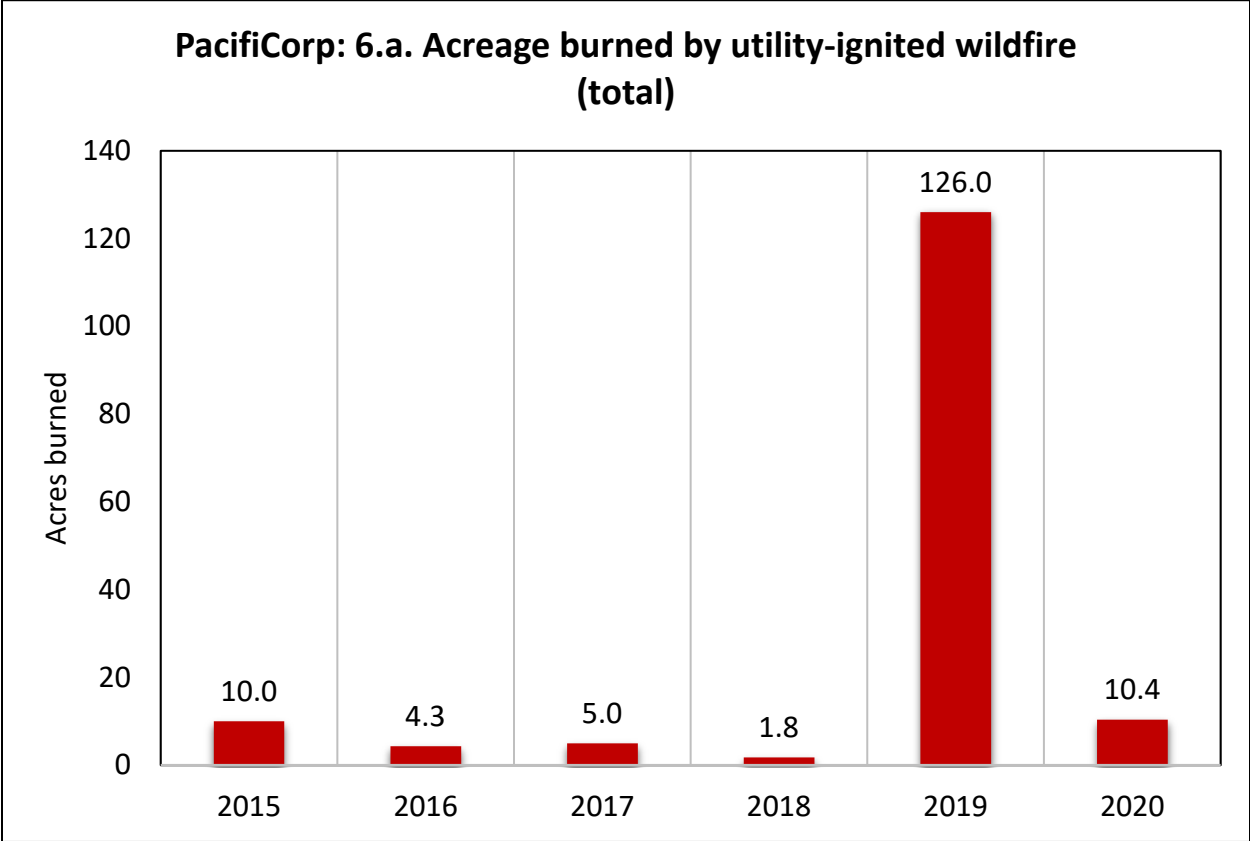
¹¹⁵ Critical infrastructure includes, but is not limited to, hospitals, police stations, and grocery stores or other infrastructure that are heavily relied upon in times of emergency.

Figure 10: Value of assets destroyed



PacifiCorp reported \$0 in assets destroyed by wildfires ignited from its electrical lines and equipment in 2020. PacifiCorp reported \$241 thousand of assets destroyed by wildfires ignited from its electrical lines and equipment in 2020. Although it is unlikely that there was \$0 in damage given the volume of structures damaged or destroyed in 2020, Energy Safety relied upon the data as reported by PacifiCorp in its 2021 Q1 QDR.

Figure 11: Acreage burned by utility-ignited wildfire



As shown in figure above, during the reporting period from 2015 through 2020, the acres burned from wildfires ignited by PacifiCorp’s infrastructure peaked in 2019 with 126 acres burned. While the reported acres burned decreased in 2020, the 10.4 acres burned still represented the second largest volume of acres burned during the reporting period.

5.6.5 Risks from Incomplete Initiatives

As discussed in Sections 5.2 and 5.5.1, PacifiCorp only completed approximately four percent of its covered conductor installation initiative (5.3.3.3) while exceeding its planned budget per mile of covered conductor installed for that initiative by nearly 1,400%. Also, as shown in Table 1, initiative 5.3.3.3 was PacifiCorp’s highest cost initiative, comprising nearly one-third of its entire 2020 WMP planned budget. Given these factors, Energy Safety further reviewed whether PacifiCorp’s failure to implement its covered conductor installation initiative, as planned, impacted its ability to effectively mitigate the wildfire and PSPS risks on its system.

To begin, Energy Safety assessed PacifiCorp’s 2020 WMP to understand the full scope of its covered conductor installation initiative. In its 2020 WMP, PacifiCorp stated that “[t]he covered conductor program specifically includes the proactive replacement of existing in-service lines and covers a wide range of relevant technologies, such as Hendrix cable or

spacer cable, as well as all elements required for design and installation, including but not limited to materials, engineering, circuit coordination review, hardware, connectors, and installation/construction.”¹¹⁶ As described by PacifiCorp, the installation of covered conductor was also intended to provide ancillary risk reduction through replacement or installation of new subordinate line elements (e.g., hardware, connectors, crossarms, etc.) that would further reduce risk. Regarding the prioritization of covered conductor installations, PacifiCorp stated that its “...general methodology included selecting locations where the dominant fire weather was experienced in 2019 and the installation of covered conductor can reduce the potential for a PSPS event.”¹¹⁷ In its 2020 WMP, PacifiCorp stated that it presumes the implementation of its system hardening and situational awareness initiatives will significantly decrease the impacts of potential PSPS events.¹¹⁸

Energy Safety requested spatial data from PacifiCorp that identified the locations of its planned covered conductor installations in 2020, along with corresponding pole replacement projects.¹¹⁹ Energy Safety reviewed the data received and plotted the locations of PacifiCorp’s planned covered conductor installations on a map. Energy Safety then overlaid ignitions and PSPS events that occurred in 2020, as reported in PacifiCorp’s spatial QDR data, within the proximity of those planned covered conductor installation locations.

PacifiCorp’s 2020 WMP set out a target to install 38 miles of covered conductor in 2020. These 38 miles were totaled across 11 distinct covered conductor installation projects. Figure 12 below shows the planned locations for six of those covered conductor installation projects, which comprised 71% of PacifiCorp’s planned 38 miles to install in 2020. Each of these projects were within the vicinity of the town of Dunsmuir and were located in Tier 2 or Tier 3 HFTD areas.¹²⁰

¹¹⁶ PacifiCorp 2020 WMP section 5.3.3.3 Covered Conductor, pages 139-140.

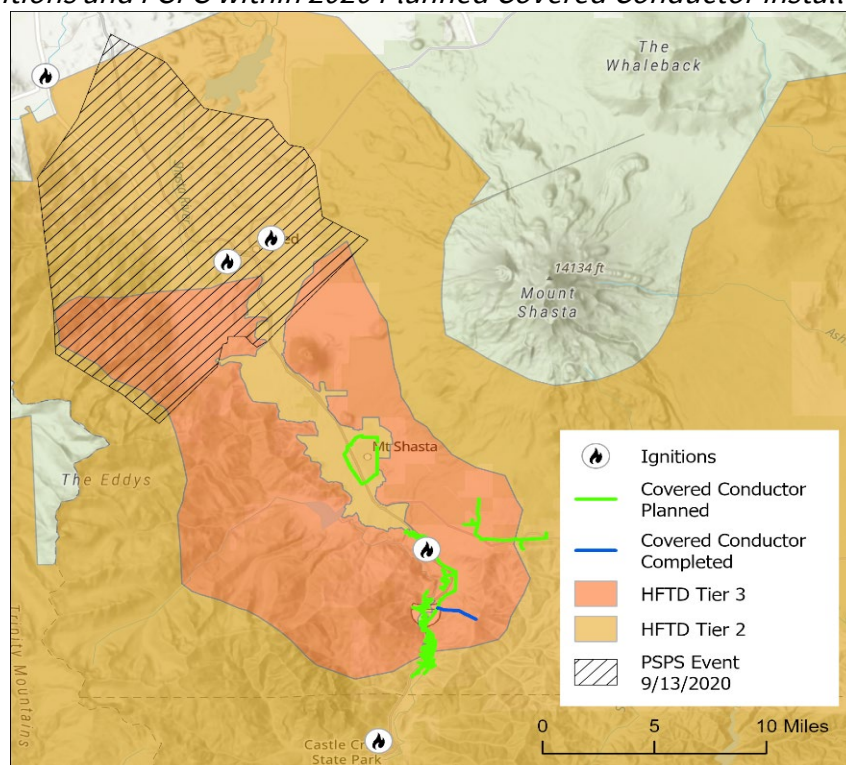
¹¹⁷ PacifiCorp 2020 WMP, section 5.3.3.3, pages 140-141.

¹¹⁸ PacifiCorp 2020 WMP page 86.

¹¹⁹ PacifiCorp’s email DR response on September 9, 2022 – “Attach OEIS 1-2.KMZ”

¹²⁰ PacifiCorp’s email DR response on September 9, 2022 – “Attach OEIS 1-2.KMZ”

Figure 12: Ignitions and PSPS within 2020 Planned Covered Conductor Installation Footprint



The blue line in the figure above shows the location of PacifiCorp’s 1.4 miles of covered conductor installation completed in 2020 for the “Radio Tower” project.¹²¹ The green lines in the figure show the locations of covered conductor installations planned for completion in 2020 but were not completed. One of these planned but incomplete covered conductor installation projects was called the “Dunsmuir Tie Taps” project and covered a 3.2-mile stretch of lines near the Dunsmuir Municipal Mott Airport.¹²² The black flame icons in the figure above represent the locations of PacifiCorp’s reported 2020 ignitions. As seen in the figure, Energy Safety observed that PacifiCorp had an ignition (caused by a lightning arrester) in a Tier 3 HFTD area in a location in which it planned to install covered conductor but failed to do so.

Moreover, the hatched area in the figure above illustrates the boundaries of PacifiCorp’s lone PSPS event from September 13, 2020. While PacifiCorp’s planned 2020 covered conductor installation projects did not intersect the boundaries of the PSPS event area, Energy Safety notes that the planned covered conductor installation projects were connected to the same substation as the PSPS event area. As posited by PacifiCorp in its 2020 WMP, and discussed above, PacifiCorp’s expectation was that implementation of its system hardening initiatives, of which covered conductor installation is the largest, would “significantly decrease” the impacts of its PSPS events.

¹²¹ PacifiCorp’s email DR response on September 9, 2022 – Attach OEIS 1-1.

¹²² PacifiCorp’s email DR response on September 9, 2022 – Attach OEIS 1-1.

5.7 Disposition of 2020 WMP Conditions

In 2020, Energy Safety issued a conditional approval of PacifiCorp's 2020 WMP. The conditional approval identified the severity of each issue (as set forth below) and set forth required remediations.

1. **Class A** – aspects of the WMP are lacking or flawed
2. **Class B** – insufficient detail or justification provided in WMP
3. **Class C** – gaps in baseline or historical data, as required in 2020 WMP Guidelines

Class A deficiencies were of the highest concern and required electrical corporations to submit a remedial compliance plan (RCP) within 45 days of approval. Class B deficiencies were of moderate concern and required electrical corporations to submit to quarterly reporting, with the first of such reports being due 90 days after approval. Finally, Class C deficiencies were of least concern and required electrical corporations to submit additional detail and information or otherwise come into compliance in its 2021 annual WMP update. Accordingly, Energy Safety only considers PacifiCorp's resolution of its Class A and Class B conditions in this ARC. Responses to and resolution of Class C deficiencies will be evaluated with respect to Energy Safety's assessment of PacifiCorp's 2021 WMP update.

PacifiCorp timely submitted its RCP and first Quarterly Report (QR) as required by Resolutions WSD-002 and WSD-008. On December 30, 2020, Energy Safety issued its evaluation of PacifiCorp's RCP and issued a Notice of Noncompliance. On January 8, 2021, Energy Safety issued its evaluation of PacifiCorp's QR and issued a Notice of Noncompliance. Table 16 and Table 17 below provide a summary of the conditions and Energy Safety's determination of sufficiency.

PacifiCorp failed to resolve its lone Class A deficiency and nine out of 15 Class B deficiencies within the 2020 WMP compliance period.

Table 15: Class A Deficiencies from PacifiCorp's 2020 WMP

Type of Deficiency	Class	Deficiency Title	Sufficiency Finding
Guidance-3	Class A	Lack of risk modeling to inform decision-making	Insufficient

While PacifiCorp timely filed its RCP, upon review by Energy Safety, its responses to the Class A Deficiency were found to be insufficient. Energy Safety determined that PacifiCorp failed to adequately provide the required information needed to properly inform and sufficiently address its Class A Deficiency. Accordingly, Energy Safety determined that PacifiCorp was out of compliance with California Public Utilities Code section 8386, Resolution WSD-002, and

Resolution WSD-008 for failure to adequately meet all the requirements to address its Class A Deficiency. Energy Safety issued a Notice of Non-Compliance on December 30, 2020.¹²³

Table 16: Class B Deficiencies from PacifiCorp's 2020 WMP

Deficiency/ Condition Number	Class	Description	Sufficiency Status
Guidance-1	B	Lack of risk-spend efficiency (RSE) information	Insufficient
Guidance-2	B	Lack of alternatives analysis for chosen initiatives	Sufficient
Guidance-4	B	Lack of discussion on PSPS impacts	Insufficient
Guidance-5	B	Aggregation of initiatives into programs	Sufficient
Guidance-6	B	Failure to disaggregate WMP initiatives from standard operations	Sufficient
Guidance-7	B	Lack of detail on effectiveness of “enhanced” inspection programs	Sufficient
Guidance-9	B	Insufficient discussion of pilot programs	Sufficient
Guidance-10	B	Data issues – general	Insufficient
Guidance-11	B	Lack of detail on plans to address personnel shortages	Insufficient
Guidance-12	B	Lack of detail on long-term planning	Insufficient
PacifiCorp-1	B	PacifiCorp’s WMP does not report adequate planning for climate change	Insufficient
PacifiCorp-2	B	PacifiCorp has not demonstrated effective weather station utilization	Sufficient
PacifiCorp-3	B	PacifiCorp did not explain how it would track effectiveness of its covered conductor initiative	Insufficient
PacifiCorp-4	B	PacifiCorp’s WMP lacks a QA/QC program for inspections	Insufficient
PacifiCorp-6	B	PacifiCorp does not have a specific data governance wildfire mitigation program	Insufficient

Energy Safety’s review of PacifiCorp’s response to its Class B Deficiencies found that nine out of 15 responses were insufficient. Energy Safety determined that PacifiCorp failed to adequately provide the required information needed to properly inform and sufficiently address its Class B Deficiencies. Accordingly, Energy Safety determined that PacifiCorp was out of compliance with California Public Utilities Code section 8386, Resolution WSD-002, and

¹²³ Notice of Non-Compliance (NONC) Identified During 2020 Wildfire Mitigation Plan (WMP) Remedial Compliance Plan (RCP) Review.

Resolution WSD-008 for failure to adequately meet all the requirements to address its Class B Deficiencies. Energy Safety issued a Notice of Non-Compliance (NONC) on January 8, 2021.¹²⁴

6.0 DISCUSSION

Energy Safety considered the totality of the evidence before it in determining whether an electrical corporation substantially complied with its WMP. Energy Safety finds that PacifiCorp failed to substantially comply with its 2020 WMP. PacifiCorp had two systemic issues that hindered its ability to reduce the risk of catastrophic wildfire—lack of effective planning and poor data governance. Energy Safety finds that PacifiCorp’s lack of effective planning of its wildfire mitigation initiatives and poor data governance led to an inability to accurately plan, execute, and track implementation of WMP initiatives. Effective planning and data governance are foundational capabilities and fundamental to any electrical corporation’s ability to effectively implement wildfire mitigation measures and mitigate wildfire risk.

Below, Energy Safety presents its assessment of PacifiCorp’s performance to each of the evaluation criteria set forth in the Compliance Framework followed by an assessment of the systemic issues.

6.1 Completion of 2020 Initiatives

As discussed in Section 5.5.1.1, PacifiCorp’s Q4 2020 QIU reported progress on only 26 of the 86 initiatives in PacifiCorp’s 2020 WMP (or 30%). Of the 26 initiatives reported in its Q4 2020 QIU, eight included targets that did not exist in the 2020 WMP.¹²⁵ Accordingly, Energy Safety did not assess PacifiCorp’s completion of these eight initiatives, as they did not include targets in PacifiCorp’s 2020 WMP, which is the document against which this compliance assessment is made. Of the eighteen initiatives reported in its Q4 2020 QIU with targets that aligned with the 2020 WMP, PacifiCorp failed to meet its targets for eight. In addition, Energy Safety finds that PacifiCorp did not report progress on another initiative 5.3.3.18 Other – Replace small size [Copper] conductor, which it identified as a “key objective”¹²⁶ in its 2020 WMP. For initiative 5.3.3.18, which was not reported in PacifiCorp’s Q4 2020 QIU, Energy Safety finds that PacifiCorp also failed to meet its target. In total, Energy Safety reviewed PacifiCorp’s filings and finds that it failed to meet the targets for nine of 19 (47%) initiatives with targets identified in its 2020 WMP.

PacifiCorp’s missed targets were substantive. On average, PacifiCorp completed less than half of the target for each of its missed targets for which progress was reported. Most notably, PacifiCorp met only 4% of its covered conductor initiative (5.3.3.3) installing only 1.4 miles

¹²⁴ Notice of Non-Compliance Identified During 2020 Wildfire Mitigation Plan Quarterly Report Review.

¹²⁵ PacifiCorp’s Q4 QIU had eight targets for initiatives that had no targets in the 2020 WMP.

¹²⁶ PacifiCorp 2020 WMP, Executive Summary, page 15.

against a target of 38 miles. In addition, PacifiCorp exceeded its planned spend per mile of covered conductor installed by nearly 1,400%.¹²⁷ Moreover, PacifiCorp allocated nearly one-third of its entire 2020 WMP planned budget on this initiative. The large financial allocation coupled with PacifiCorp's assertion that implementation of its system hardening and situational awareness initiatives was expected to "significantly decrease" the impacts of its PSPS events, demonstrates that the covered conductor initiative was a priority initiative for PacifiCorp. Energy Safety also finds that PacifiCorp substantively failed to complete its implementation of weather station installations, as it installed only two of 10 planned weather stations. Further discussion on other incomplete initiatives that PacifiCorp identified as "key objectives" of its 2020 WMP is provided in Section 6.2 below.

For these reasons, Energy Safety finds that PacifiCorp failed to effectively implement its 2020 WMP through substantive completion of its approved initiatives. Further, Energy Safety finds that PacifiCorp's missed targets and the impacts of those failures significantly hindered PacifiCorp's ability to effectively mitigate its wildfire risk. As discussed further in Section 6.4, Energy Safety finds that the prevalence of large variances from planned to actual implementation and spending throughout many of PacifiCorp's 2020 WMP initiatives results from PacifiCorp's systemic failure to effectively plan, implement, track, and report its wildfire mitigation initiatives.

6.2 Achieving 2020 WMP Objectives

Energy Safety's analysis of PacifiCorp's performance to its objectives is broken into two sections. First, Energy Safety discusses PacifiCorp's "key objectives" set to be achieved in 2020. It then presents its findings on PacifiCorp's performance to its overarching objectives. The objectives are listed in full in Section 4.2.

Key Objectives for 2020:

PacifiCorp stated that its key objectives for 2020 included:¹²⁸

- Installation of 38 miles of covered conductor.
- Replacement of 3 miles of small diameter copper conductor with aluminum stranded conductor.
- Proactive replacement of 189 in-service wooden poles with fiberglass for enhanced structural resilience.
- Installation and commissioning of 31 system automation devices.
- Evaluation of various pilot project results.
- Continued implementation of enhanced inspection and correction programs.

¹²⁷ Energy Safety notes that although PacifiCorp only completed four percent of its target, it spent 55% of its planned budget for this initiative.

¹²⁸ PacifiCorp 2020 WMP, Executive Summary, page 15.

Energy Safety finds that PacifiCorp failed to meet most of its key objectives planned for 2020. Four of the six key objectives contained specific quantitative targets for implementation. PacifiCorp failed to meet its targets for all four of the quantitative targets. Most notably, as discussed in Section 6.1 above, PacifiCorp only completed four percent of its targeted miles for covered conductor installation – its highest priority initiative as a function of planned spending. As reported in its Q4 2020 QDR, table 12¹²⁹ and 2021 WMP,¹³⁰ PacifiCorp did not make any progress in completing its target to replace three miles of small diameter copper conductor. In addition, PacifiCorp only completed 15% (29 of 189) of its target for pole replacements. However, Energy Safety finds that while PacifiCorp failed to meet its target to install 31 system automation devices, its installation of 28 devices represented a good faith effort at implementing this initiative.

Regarding its key objectives with qualitative targets, Energy Safety finds that PacifiCorp met its objective to implement and evaluate various pilot programs. However, as discussed in Section 5.6.3, PacifiCorp's failure to timely correct deficiencies identified on its system through its inspection programs did not meet the intent of its objective to implement inspection and correction programs in 2020. Importantly, Energy Safety finds that PacifiCorp's volume of priority Level 1 and Level 2 conditions left unresolved on its system in 2020 contributed to its failure.

PacifiCorp's Overarching 2020 WMP Objective:

PacifiCorp's overarching objectives in the immediate, near, and longer term were to implement the programs included in section 5 of its 2020 WMP.¹³¹ As discussed in Section 5.5.1.1, PacifiCorp inconsistently and inaccurately reported its progress towards completion of initiatives included in section 5 of its 2020 WMP. Moreover, while section 5 of PacifiCorp's 2020 WMP listed a total of 86 initiatives, PacifiCorp reported progress on only 26. Energy Safety finds PacifiCorp failed to effectively implement nearly half of the 18 initiatives with corresponding WMP targets that PacifiCorp reported progress on. In addition, as stated above, Energy Safety finds that PacifiCorp's misses were substantial, only accomplishing approximately half of its planned initiative targets for reported initiatives on average, and often coupled with extreme variances in planned versus actual expenditures. As such, Energy Safety finds that PacifiCorp failed to achieve its overarching 2020 WMP objective.

Due to PacifiCorp's failure to meet its objectives, it is unclear that PacifiCorp's actions resulted or will result in significant wildfire risk reduction.

¹²⁹ PacifiCorp's Q4 2020 QDR, table 12, row 30.

¹³⁰ PacifiCorp 2021 WMP, page 137.

¹³¹ PacifiCorp 2020 WMP, section 4.1: The objectives of the plan, page 71.

6.3 Reducing Wildfire Risk

Pursuant to Government Code section 15475.1, Energy Safety's primary objective is to ensure that electrical corporations reduce wildfire risk and comply with energy infrastructure safety measures. Therefore, as stated in the Compliance Framework, Energy Safety's evaluation of PacifiCorp's performance to its 2020 WMP went beyond a check-box exercise of whether PacifiCorp met its initiative targets to instead evaluate whether PacifiCorp's performance in 2020 reduced the risk of PacifiCorp equipment igniting a catastrophic wildfire. As noted in the Compliance Framework, given that 2020 is the first year in a three-year cycle and the benefits of work deployed in 2020 may accrue over time, Energy Safety's evaluation largely focused on establishing baseline measures against which to measure PacifiCorp's performance over time. However, even with limited data, Energy Safety makes some initial findings about PacifiCorp's ability to reduce wildfire risk on its system in 2020.

Measuring ignitions provided the most direct measure of electrical corporation wildfire risk. Other metrics, such as wire down events and unplanned outages correlated with wildfire risk because some portion of these events will result in ignitions. As presented in Section 5.6.1, a review of normalized ignitions in Tier 2 HFTD areas showed an increase of over 30% when compared to the historical five-year average from 2015 through 2019. Energy Safety finds that this increase was primarily driven by a 76% increase in equipment/facility failure caused ignitions in 2020 when compared to historical averages. Conversely, PacifiCorp experienced a significant decrease in normalized ignitions in non-HFTD areas, wire down events, and outages in 2020 when compared to historical five-year averages.

Energy Safety also finds that PacifiCorp's failures in completing its 2020 WMP initiatives (see Section 6.1) and fulfilling its 2020 WMP objectives hindered its ability to effectively reduce its wildfire and PSPS risk. As discussed in Section 5.6.5, PacifiCorp expected to achieve significant reductions in PSPS impacts through implementation of its system hardening and situational awareness initiatives. However, Energy Safety finds that PacifiCorp failed to effectively complete these initiatives, as reflected in it missing the targets for nearly all its identified "key objectives." Energy Safety finds that PacifiCorp also failed to complete its initiative to install weather stations (5.3.2.1), completing just 20% of its targeted installations.

Furthermore, based on the analysis presented in Section 5.6.5, Energy Safety finds that PacifiCorp failed to install covered conductor for the "Dunsmuir Tie Taps" project, as planned, and later experienced an ignition on or near that exact location in 2020. While that ignition fortunately did not manifest into a wildfire of catastrophic consequence and impact, PacifiCorp's failure to act and effectively implement its covered conductor initiative may have impacted its ability to prevent such an ignition. Moreover, this same location was also adjacent to the circuit on which PacifiCorp implemented its first PSPS event in 2020. Had

PacifiCorp completed its planned system hardening in this location, it is possible that such an event could have been avoided. PacifiCorp acknowledged this point in its EC ARC, as it identified the delayed grid hardening work, specifically its lack of covered conductor installation, as a factor in its inability to make a “significant impact” in reducing its PSPS risks (See Section 5.1.4).

Finally, as discussed in Section 5.6.3, PacifiCorp fixed 93% of the priority Level 1 conditions found on its distribution infrastructure and 91% of the priority Level 1 conditions found on its transmission infrastructure, which equates to 26 Level 1 findings on its distribution and two on its transmission infrastructure being left unresolved. Level 1 conditions present an immediate risk of high potential impact to safety or reliability and require immediate corrective action. A delay in resolution of these conditions disregards significant risks remaining on the system, risks that are known to be of immediate concern and high potential impact to safety and reliability. It takes just one such condition to potentially spark a wildfire that could have catastrophic consequences.

For these reasons, Energy Safety finds that PacifiCorp’s implementation of its 2020 WMP failed to sufficiently reduce the wildfire risk on its infrastructure in 2020. Also, as described in more detail below, PacifiCorp’s systemic issues increase the likelihood PacifiCorp will miss opportunities to reduce risk on its system and fail to adequately deploy mitigations, which increases the risk of an ignition and, depending on ignition location and time, the risk of a catastrophic wildfire.

6.4 Systemic Issues

To fully evaluate PacifiCorp’s compliance with its 2020 WMP, including its initiative targets and objectives, Energy Safety evaluated whether there were any systemic issues that hindered PacifiCorp’s ability to achieve its desired wildfire risk and consequence outcomes. In PacifiCorp’s case, there are many instances of issues related to data governance and ineffective planning.

6.4.1 Data Governance

An analysis of PacifiCorp’s performance in 2020 revealed numerous and extensive issues with data governance, including poor and inaccurate record-keeping. Examples include:

- When conducting the SVM audit, PacifiCorp failed to provide audit-specific documentation due to lack of or outdated methods for tracking and record keeping.
- PacifiCorp’s self-reports (i.e., Q4 2020 QIU, Q4 2020 QDR, etc.) and its own EC ARC showed numerous discrepancies and did not meet all the reporting requirements outlined by Energy Safety in the Compliance Operational Protocols.

- PacifiCorp's EC ARC did not contain an initiative-level discussion on its implementation of 2020 WMP initiatives, but rather aggregated that information and reported it at the category-level.
- PacifiCorp only included 26 initiatives in its Q4 2020 QIU when its 2020 WMP contained 86.
- PacifiCorp reported targets in its Q4 2020 QIU that were substantively different than those reported in its 2020 WMP.
- PacifiCorp conflated and indiscriminately changed targets and units of numerous initiatives (e.g., initiatives 5.3.2.5 and 5.3.7.1 had qualitative targets in the 2020 WMP and PacifiCorp changed the targets to dollar values in its Q4 2020 QIU).
- PacifiCorp reported that 25 structures were damaged or destroyed from wildfires ignited by its infrastructure in 2020 but reported the total value of assets damaged or destroyed as \$0.

Energy Safety cannot emphasize enough the importance of accurate recordkeeping and data management to achieving wildfire risk reduction. An electrical corporation must accurately track the assets on its system, and it must be able to adequately track deployment of initiatives, identify and track defects, and track remedies to those defects. PacifiCorp's insufficient data governance resulted in missed opportunity to reduce risk and potentially increased the likelihood of negative outcomes. PacifiCorp's reporting reveals pervasive data governance issues throughout its operations, pointing to a systemic issue.

6.4.2 Ineffective Planning

Energy Safety finds that PacifiCorp's failures to effectively plan and execute its wildfire mitigation work were extensive, as evidenced by its overall lack of completion of many WMP initiative targets. Examples include:

- Of the limited number of initiatives for which PacifiCorp reported progress in its Q4 2020 QIU that aligned with the targets in its 2020 WMP, on average, PacifiCorp succeeded in completing only about half of its WMP targets for those initiatives.
- While PacifiCorp substantively missed targets for numerous WMP initiatives, it also spent significantly more than its planned budget on many of those same initiatives.
 - PacifiCorp reported completing only 4% of its target for the covered conductor installation initiative (5.3.3.3) but spent 55% of its planned budget in doing so and increased the cost per mile installed by nearly 1,400% from what was reported in its 2020 WMP.
 - Weather monitoring and weather stations (initiative 5.3.3.1) was reported to be more than \$40,000 over budget, a 29% increase, while only 20% completed.
 - Vegetation management to achieve clearances around electric lines and equipment (initiative 5.3.5.20) was reported to be more than \$3 million over budget, a 104% increase, while only 67% completed. In other words, PacifiCorp

- completed approximately two-thirds of its planned work and, in doing so, spent more than twice as much as it planned.
- For half of its initiatives with missed targets, PacifiCorp overspent, on average, by nearly 400%.
 - PacifiCorp failed to effectively implement four of its six (or 67%) initiatives listed as “key objectives” in its 2020 WMP.
 - Of these incomplete initiatives, three had quantitative targets for which PacifiCorp completed just 6% of its 2020 WMP targets on average.
 - In its response to the SVM audit, PacifiCorp demonstrated a fundamental misunderstanding of the WMP process and its purpose by asserting that it did not meet initiative targets because they were treated as “estimates.”

While Energy Safety recognizes that there may have been some understandable supply chain and COVID-19-related challenges that contributed to PacifiCorp’s failure to implement some of its initiatives, those reasons are not sufficient rationale for failure to miss so many of its targets, including planned vegetation inspections for infrastructure safety (See Section 5.4.1, Initiative 5.3.3 Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment) and the bulk of its planned grid hardening work (e.g., installation of covered conductor, replacement of wood poles with fiberglass poles, replacement of small diameter copper conductor, etc.).

As communicated to PacifiCorp via the SVM Audit Report,¹³² PacifiCorp’s interpretation of WMP targets as “estimates” demonstrated a fundamental misunderstanding of the WMP process and its requirements. Pursuant to Public Utilities Code, section 8386.3(c), after approval of a WMP, Energy Safety must oversee compliance with the plan. Energy Safety is charged with ensuring that the requirements of the WMP are achieved, it may also issue notices of defect and compliance for failing to abide by an approved WMP.¹³³ Clearly the statutory scheme that created the WMP process and Energy Safety’s role did not envision the WMPs and their required elements as aspirational. The commitments made in PacifiCorp’s approved WMP are to be treated as requirements and not estimates. Based on PacifiCorp’s treatment of WMP targets as “estimates,” Energy Safety concludes that PacifiCorp does not hold themselves accountable to the commitments it made in the 2020 WMP.

Finally, Energy Safety finds that PacifiCorp’s consistent overspending on initiatives while making minimal progress in its implementation demonstrates a significant lack of adequate project planning, resource allocation, and execution that negatively affected the safety of its infrastructure, service reliability, and ability to reduce wildfire risk. Even when PacifiCorp underfunded initiatives, which in and of itself is not necessarily a negative, the magnitude of that underfunding (approximately 60% on average) is also indicative of ineffective planning.

¹³² Report on PacifiCorp’s 2020 SVM Audit.pdf, pages 10-11.

¹³³ See e.g. Pub. Util. Code, § 8386.3(c)(5); Gov. Code, § 15475.2.

7.0 CONCLUSION

After considering all the sources of information before it, Energy Safety finds that PacifiCorp failed to substantially comply with its 2020 WMP during the compliance period. PacifiCorp's failure to meet targets highly correlated with risk, failure to meet stated key objectives, failure to sufficiently address risk on the system, and the persistence of systemic data governance and WMP initiative planning issues demonstrate that PacifiCorp has significant operational and organizational improvements to make to reduce the risk of its infrastructure causing a catastrophic wildfire.

Energy Safety acknowledges that PacifiCorp has taken steps to improve the failings identified in this ARC in 2021 and 2022. Nevertheless, the scope of this assessment was limited to the 2020 compliance period—January 1 to December 31, 2020. Energy Safety, through its ongoing compliance assurance activities, is committed to holding PacifiCorp and all electrical corporations to the highest standards in their implementation of their wildfire mitigation plans to ensure they move as quickly and effectively as possible. PacifiCorp's performance over time will reveal whether it is successfully reducing wildfire risk.

DATA DRIVEN FORWARD-THINKING INNOVATIVE SAFETY FOCUSED

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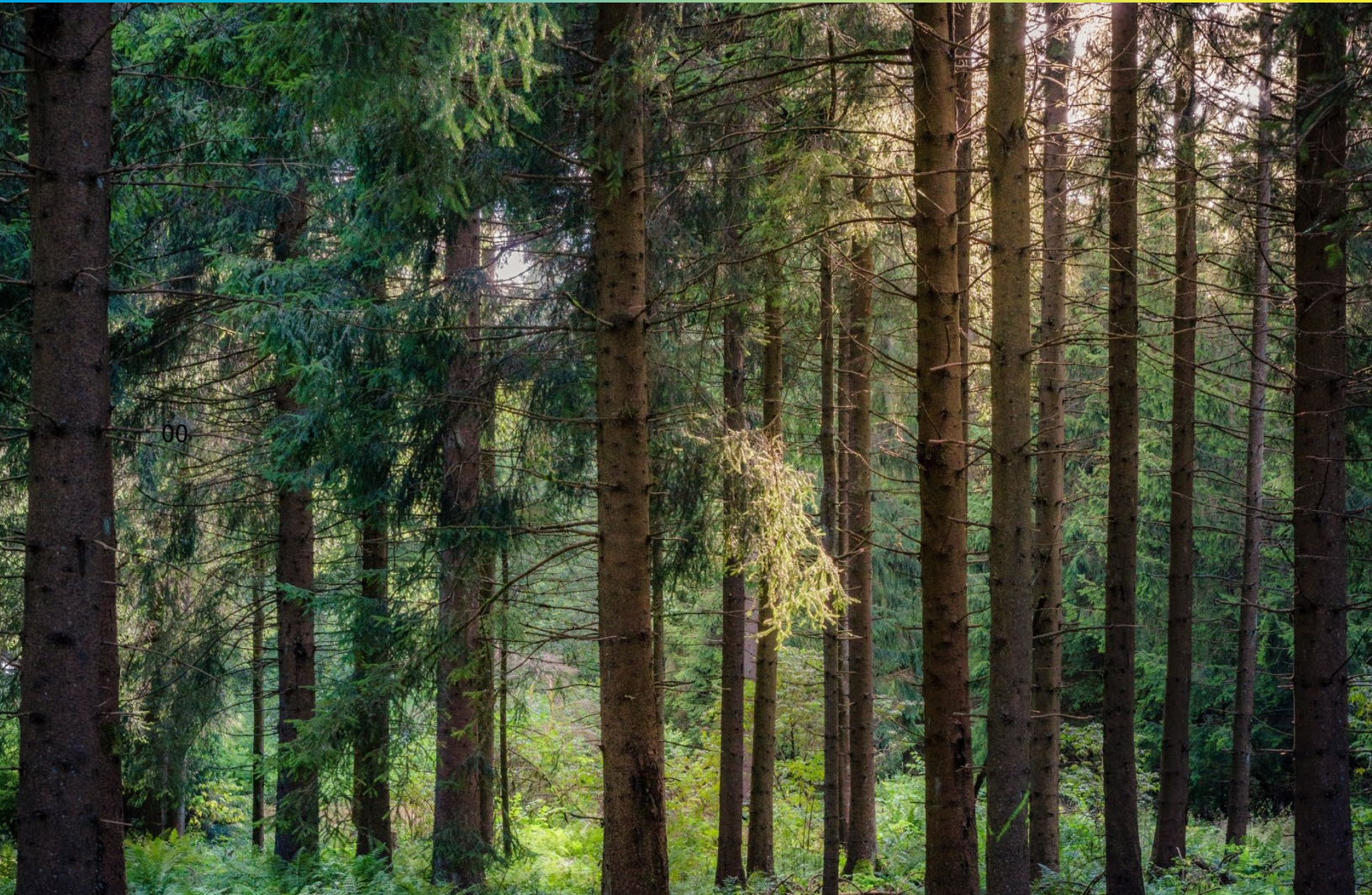


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APPENDIX

LIST OF PUBLIC DOCUMENTS REFERENCED



APPENDIX

In performing this ARC, Energy Safety reviewed the following publicly available records and documents:

1. PacifiCorp 2020 WMP
https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/wildfire-mitigation/R18-10-007_PacifiCorp_WF_Plan.pdf
2. PacifiCorp 2020 WMP Tables
<https://www.pacificorp.com/community/safety/wildfire-mitigation-plans.html>
3. PC 2020 Q4 QIU
<https://efiling.energysafety.ca.gov/Lists/DocketLog.aspx?docketnumber=2020-QIU>
4. CPUC Resolution WSD-001
<https://www.cpuc.ca.gov/-/media/cpuc-website/industries-and-topics/documents/wildfire/wildfire-2021/wsd-guidance-on-resolution-wsd-001-20210129.pdf>
5. CPUC Resolution WSD-002
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M340/K859/340859823.PDF>
6. CPUC Resolution WSD-003
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M340/K895/340895473.PDF>
7. CPUC Resolution WSD-007
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M340/K965/340965516.PDF>
8. CPUC Resolution WSD-008
<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M340/K953/340953493.PDF>
9. CPUC Resolution WSD-012
<https://www.cpuc.ca.gov/industries-and-topics/wildfires/wildfire-related-resolutions>
10. Compliance Operational Protocols, dated February 16, 2021
<https://energysafety.ca.gov/wp-content/uploads/docs/misc/wsd/2021.02.16-compliance-operational-protocols.pdf>
11. PacifiCorp EC ARC
https://efiling.energysafety.ca.gov/Search.aspx?docket=2020-EC_ARC
12. 2020 IE ARC on PacifiCorp
<https://efiling.energysafety.ca.gov/Search.aspx?docket=2021-IE>
13. PacifiCorp Response on IE ARC
<https://efiling.energysafety.ca.gov/Search.aspx?docket=2021-IE>
14. PacifiCorp Engagement Letter dated December 4, 2020,
<https://energysafety.ca.gov/wp-content/uploads/docs/misc/wsd/wsd-pacificorp-crowe-notification-20201204.pdf>

15. PacifiCorp WMP Expenditures Performance Audit Report
(https://energysafety.ca.gov/wp-content/uploads/docs/audits/20211227_pacificorp-wmp-expenditures-performance-audit-report.pdf)
16. Notice of Non-Compliance (NONC) Identified During 2020 Wildfire Mitigation Plan (WMP) Remedial Compliance Plan (RCP) Review
(<https://energysafety.ca.gov/wp-content/uploads/docs/misc/wsd/pacificorp-rcp-nonc-20201230.pdf>)
17. Notice of Non-Compliance Identified During 2020 Wildfire Mitigation Plan Quarterly Report Review
(<https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2020/pacificorp-qr-nonc.pdf>)
18. 2020 WMP Guidelines
(<https://energysafety.ca.gov/wp-content/uploads/docs/misc/docket/322133494.pdf>)
19. Attachment 4 of CPUC Resolution WSD-001, titled “WMP Metrics.”
(<https://energysafety.ca.gov/wp-content/uploads/docs/misc/docket/322232145.pdf>)
20. PacifiCorp 2021 WMP
(https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/pacificorp_2021_wmp.pdf)