EXHIBIT: PacifiCorp PAC_007
CPUC PROCEEDING: H.25-07-005
SPONSOR/WITNESS: PacifiCorp/Brian King
DESCRIPTION: OEIS Audit Report on PAC's Substantial Vegetation Management Work in 2020 (PAC0006923)
DATE IDENT. 6/9/2026 RECD. _____
ALJ: GERALD F. KELLY

PAC_007

State of California – A Natural Resources Agency
Gavin Newsom, Governor
Caroline Thomas Jacobs, Director

OFFICE OF ENERGY INFRASTRUCTURE SAFETY
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August 24, 2022

TO: PacifiCorp
Allen Berreth, Vice President of Transmission and Distribution Operations
825 NE Multnomah, Suite 2000
Portland, OR 97232

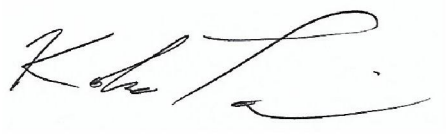
SUBJECT: Office of Energy Infrastructure Safety's Audit Report on PacifiCorp's Substantial Vegetation Management Work in 2020

Pursuant to the requirements of California Public Utilities Code Section 8386.3(c)(5)(A), the Office of Energy Infrastructure Safety (Energy Safety) has completed and enclosed its audit of PacifiCorp's substantial vegetation management work in 2020.

During the audit, Energy Safety reviewed data provided by PacifiCorp, which Energy Safety compared to the representations PacifiCorp made in its 2020 Wildfire Mitigation Plan (WMP). A copy of the audit is enclosed. Please submit by electronic copy the requested Substantial Vegetation Management Audit Response & Corrective Action Plan no later than 30 days from issuance of this letter to the 2020-SVM docket in Energy Safety's e-filing system with a file named "PacifiCorp 2020 SVM Audit Corrective Action Plan."

Thank you for your courtesy and cooperation throughout the audit process. If you have any questions concerning this audit, please contact MaryBeth Farley at Marybeth.Farley@energysafety.ca.gov, with a copy to compliance@energysafety.ca.gov.

Sincerely,

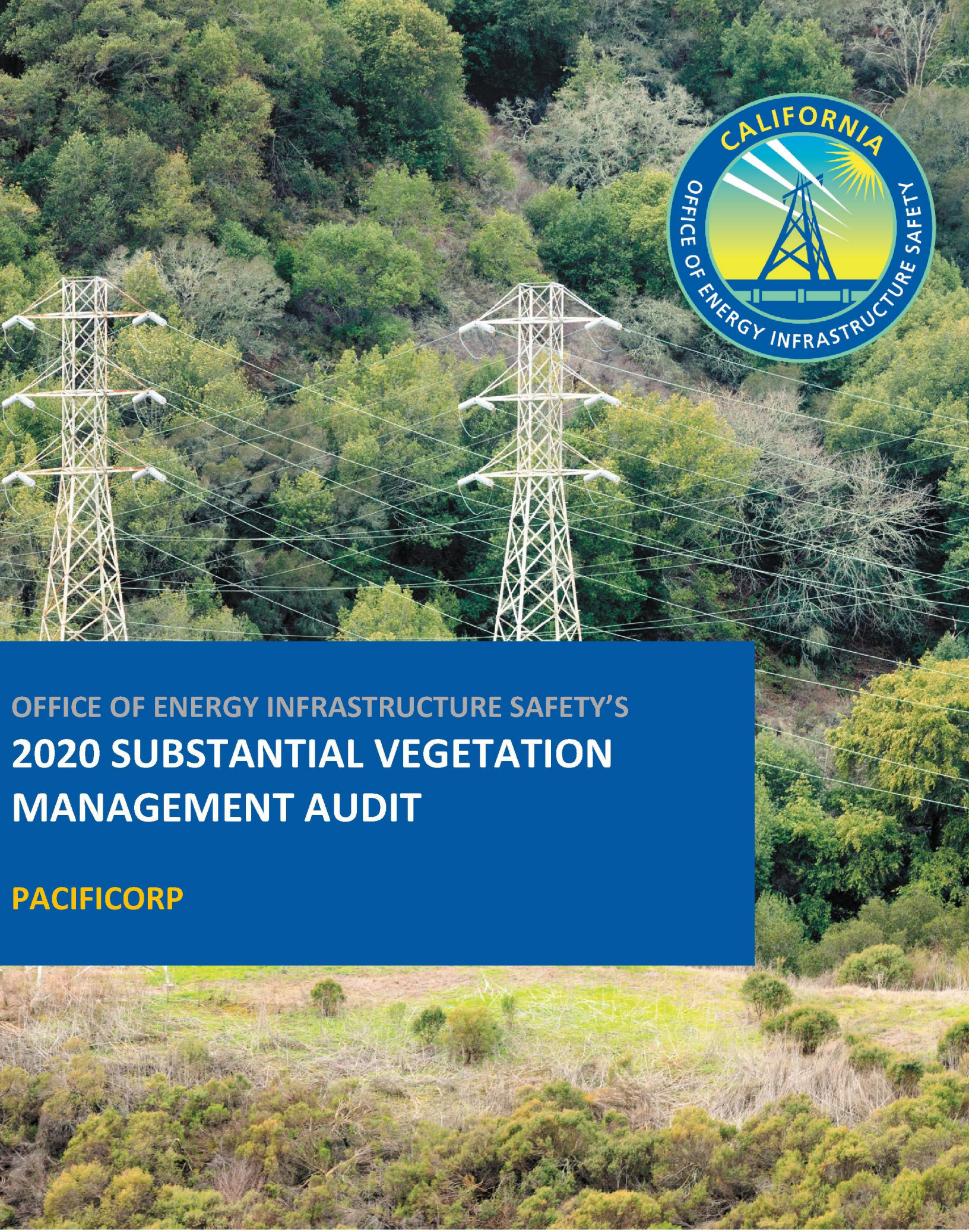


Koko Tomassian
Compliance Program Manager
Compliance Assurance Division
Office of Energy Infrastructure Safety

Attachment: Audit

Cc:
Amy McCluskey, PacifiCorp
Pooja Kishore, PacifiCorp

Tim Clark, PacifiCorp
MaryBeth Farley, Energy Safety
Elizabeth McAlpine, Energy Safety



OFFICE OF ENERGY INFRASTRUCTURE SAFETY'S

2020 SUBSTANTIAL VEGETATION MANAGEMENT AUDIT

PACIFICORP

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1.0 EXECUTIVE SUMMARY

Statute requires electrical corporations (utilities) to notify Energy Safety after completing substantial portions of vegetation management requirements in their approved Wildfire Mitigation Plans (WMPs) and requires Energy Safety to audit compliance with these requirements.[1] Energy Safety refers to this audit as the "Substantial Vegetation Management" (SVM) audit.

To conduct this audit, Energy Safety evaluated the vegetation management section of PacifiCorp's 2020 WMP.[2] 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. In reviewing the vegetation management section and initiatives in PacifiCorp's 2020 WMPs, Energy Safety identified both quantitative commitments (e.g., miles of lines to inspect, minimum work quality thresholds, etc.) and verifiable statements (e.g., the utility will hold public meetings with communities regarding future vegetation management activities, the utility will train personnel on utilities protocols, etc.) made by PacifiCorp. Energy Safety then reviewed available information and requested additional documentation to support the assessment of whether utilities met its quantitative commitments and executed its verifiable statements.

Based on the scope above and subsequent analysis, Energy Safety found PacifiCorp was not compliant in 11 of the 21 vegetation initiatives audited in its 2020 WMP. 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. See Table 1 below.

[1] Cal. Pub. Util. Code § 8386.3, subd. (c)(5)(A)
[2] 2020 WMP Guidelines, R.18-10-007 page 78, the 2020 WMP had 10 categories such as asset management and inspections, vegetation management and inspections, data governance, etc.

Table 1: Energy Safety's Analysis of PacifiCorp's 2020 WMP Vegetation Management Initiatives

2020 WMP Initiative Number	2020 WMP Initiative Name	Determination[3]
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[4]**
5.3.5.12	Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment	**Noncompliant[5]**
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[6]**
5.3.5.16	Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment	**Noncompliant[7]**

[3] 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.

[4] 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.

[5] 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.

[6] 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.

[7] 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.

2020 WMP Initiative Number	2020 WMP Initiative Name	Determination[3]
5.3.5.17	Substation Inspections	**Noncompliant**[8]
5.3.5.18	Substation Vegetation Management	**Noncompliant**[9]
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**

The 2020 WMP was the first year for which these SVM audit requirements were in effect. As with any inaugural process or effort, there was no existing precedent. Lessons learned in the execution of this audit will be carried over into future WMP Guidelines and compliance operations. Energy Safety looks forward to further refining and developing these SVM audits as the program matures.

2.0 PURPOSE

A utility must notify Energy Safety when it completes a substantial portion of the vegetation management requirements in its WMP on an annual basis.[10] Energy Safety is then required to audit the utility's vegetation management work and specify any failure of the utility to comply with the vegetation management requirements in its WMP.[11]

Energy Safety conducted this audit based on the statutory language as described below:

Pursuant to the California Public Utilities Code (PUC), section (§)8386.3(c)(5)(A):

> An electrical corporation shall notify the Wildfire Safety Division, within one month after it completes a substantial portion of the vegetation management requirements in its wildfire mitigation plan, of the completion. Upon receiving the notice from the electrical corporation, the division shall, consistent with its authority pursuant to paragraph (1) of subdivision (a) of section 326, promptly audit the work performed by, or on behalf of, the electrical corporation. The audit shall specify any failure of the electrical corporation to fully comply with the vegetation management requirements in the wildfire mitigation plan. The division shall provide the audit to the

[8] 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.
[9] 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.
[10] Cal. Pub. Util. Code § 8386.3, subd. (c)(5)(A)
[11] Cal. Pub. Util. Code § 8386.3, subd. (c)(5)(A)

electrical corporation. The electrical corporation shall have a reasonable time, as determined by the division, to correct and eliminate any deficiency specified in the audit.

3.0 SCOPE OF THE SUBSTANTIAL VEGETATION MANAGEMENT AUDIT

To conduct this audit, Energy Safety evaluated the vegetation management section of PacifiCorp's 2020 WMP.[12] The 2020 WMP contained 21 initiatives in the vegetation management section. In reviewing the vegetation management section and initiatives in PacifiCorp's 2020 WMP, Energy Safety identified both quantitative commitments (e.g., miles of lines to inspect, minimum work quality thresholds, etc.) and verifiable statements (e.g., the utility will hold public meetings with communities regarding future vegetation management activities, the utilities will train personnel on utility protocols, etc.) made by PacifiCorp. Energy Safety then reviewed available information and requested additional documentation to support the assessment of whether PacifiCorp met their quantitative commitments and executed their verifiable statements.

PacifiCorp notified Energy Safety[13] upon completion of a substantial portion of its 2020 WMP vegetation management requirements on May 3, 2021. In support of its audit, Energy Safety requested documentation to verify PacifiCorp compliance with verifiable statements and quantifiable commitments in the vegetation management sections of its 2020 WMP. This audit did not assess the quality of how PacifiCorp vegetation management programs were executed, beyond PacifiCorp's own self-assessments of work quality.

4.0 BACKGROUND

[12] 2020 WMP Guidelines, R.18-10-007 p.78, the 2020 WMP had 10 categories such as asset management and inspections, vegetation management and inspections, data governance, etc.

[13] Pursuant to Public Utilities Code section 326, subdivision (b), on July 1, 2021, the Wildfire Safety Division (WSD) transitioned from the Commission into the Office of Energy Infrastructure Safety (Energy Safety), a new department under the California Natural Resources Agency. Energy Safety "is the successor to" and "is vested with all of the duties, powers, and responsibilities of the Wildfire Safety Division" (Government Code Section 15475), including, but not limited to, jurisdiction for evaluating and approving or denying electrical corporations' WMPs and evaluating compliance with regulations related to the WMPs. The Commission and the newly formed Energy Safety will adhere to all statutory requirements pertaining to the WMP process. WSD is used to describe the work of the WSD prior to July 1, 2021. Energy Safety is used to describe the work of Energy Safety beginning on July 1, 2021. Any references to WSD action post July 1, 2021, or to Energy Safety action prior to July 1, 2021, are inadvertent and should be interpreted as the actions of WSD or Energy Safety as appropriate.

4.1 Vegetation Management Programs

PacifiCorp implements the following programs to perform vegetation management work along its distribution and transmission lines: Detailed, Patrol, and Radial Pole Clearing Inspections on Distribution, and Detailed Inspections on Transmission Lines. Each of these programs is described in more detail below for reference throughout the report.

- **Detailed Inspections on Distribution Lines:** "regular vegetation management work on any particular circuit is done every two years; full clearance is done on a four-year cycle, with interim work at the two-year mark between each cycle."[14]

- **Patrol Inspections on Distribution Lines:** "In the [High Fire Threat District] HFTD, however, regular vegetation management work is done annually, consistent with current regulations."[15]

- **Detailed Inspections on Transmission Lines:** "maintaining extended clearances and employing practices to prevent any future vegetation growth disrupting clearances" and is done on an as-needed basis.[16]

- **Radial Pole-Clearing:** pursuant to Public Resources Code 4292 and 9423, PacifiCorp clears a ten-foot cylinder around "subject" poles (i.e., poles with clamps, fuses or other spark-creating devices)[17] in State Regulated Areas (SRA),[18] and expanded the program into Local Responsibility Areas (LRA).

4.2 2020 WMP Vegetation Management Initiatives

In its 2020 WMP, PacifiCorp identified 21 vegetation management initiatives, as listed below.

1. Additional efforts to manage community and environmental impacts
2. Detailed inspections of vegetation around distribution electric lines and equipment
3. Detailed inspections of vegetation around transmission electric lines and equipment
4. Emergency response vegetation management due to red flag warning or other urgent conditions
5. Fuel management and reduction of "slash" from vegetation management activities
6. Improvement of inspections
7. LiDAR inspections of vegetation around distribution electric lines and equipment
8. LiDAR inspections of vegetation around transmission electric lines and equipment

[14] 2020 WMP, page 212
[15] 2020 WMP, page 212
[16] 2020 WMP, page 212
[17] 2020 WMP, page 249
[18] 2020 WMP, page 213

9. Other discretionary inspection of vegetation around distribution electric lines and equipment, beyond inspections mandated by rules and regulations
10. Other discretionary inspection of vegetation around transmission electric lines and equipment, beyond inspections mandated by rules and regulations
11. Patrol inspections of vegetation around distribution electric lines and equipment
12. Patrol inspections of vegetation around transmission electric lines and equipment
13. Quality assurance / quality control of inspections
14. Recruiting and training of vegetation management personnel
15. Remediation of at-risk species
16. Removal and remediation of trees with strike potential to electric lines and equipment
17. Substation inspections
18. Substation vegetation management
19. Vegetation inventory system
20. Vegetation management to achieve clearances around electric lines and equipment
21. Other - Radial Pole Clearing

4.3 PacifiCorp's Vegetation Management Programs and the 2020 WMP Initiatives

Through a review of PacifiCorp's 2020 WMP, Energy Safety related PacifiCorp's vegetation management programs listed in the section above to the following initiatives listed in its 2020 WMP:

Table 2: PacifiCorp Vegetation Management Program and Corresponding 2020 WMP Vegetation Management Initiative

VM Program	2020 WMP Initiative Number
Detailed Inspections on Distribution and Transmission Lines	5.3.5.2 5.3.5.3 5.3.5.9 5.3.5.12 5.3.5.18 5.3.5.20
Patrol Inspections on Distribution Lines	5.3.5.2 5.3.5.11 5.3.5.20
Radial Pole-Clearing	5.3.5.5 5.3.5.21

The above vegetation management program names are based on Energy Safety's assessment of PacifiCorp's various vegetation management programs.

4.3.1 Documents Reviewed

In performing this audit, Energy Safety reviewed the following records and documents:

1. PacifiCorp 2020 Wildfire Mitigation Plan (WMP)
2. PacifiCorp's Transmission and Distribution Vegetation Management Program Standard Operating Procedures manual[19]
3. PacifiCorp's responses to data request DR29-SVM20210602
4. PacifiCorp's response to data request DR044-SVM-20211022
5. PacifiCorp's response to data request DR096-SVM-20220516
6. PacifiCorp's response to data request DR108-SVM-20220713
7. PacifiCorp's response to data request DR-109-SVM-20220802
8. PacifiCorp's notification of completing a substantial portion of its vegetation management

Below is timeline of events that outlines Energy Safety communication with PacifiCorp pertaining to this SVM audit. Communication below includes data requests, as listed above, and PacifiCorp's subsequent responses.

[19] Sent via email from PacifiCorp to Energy Safety on October 22, 2021; last revised August 19, 2019

Table 3 Timeline of Events PacifiCorp's Communication with Energy Safety Regarding SVM Audit

Number	Date(s)	Event
1	April 29, 2021	Energy Safety emailed PacifiCorp requesting PacifiCorp's notification for completing a substantial portion of its vegetation management requirements in its 2020 WMP.
2	May 3, 2021	PacifiCorp notified Energy Safety that it completed a substantial portion of its vegetation management.
3	June 2, 2021	Energy Safety sent PacifiCorp DR29-SVM-20210602 requesting documentation to support initiative competition as reported in the 2021 WMP Update and the Q4 2020 Quarterly Initiative Update for initiatives 5.3.5.2, 5.3.5.5, 5.3.5.11, and 5.3.5.12.
4	June 16, 2021	PacifiCorp provided its response to DR29-SVM-20210602.
5	August 16, 2021	Energy Safety requested a meeting with PacifiCorp to review data submitted in response to DR29-SVM-20210602.
6	August 19, 2021	Energy Safety and PacifiCorp met to review data submitted in response to DR29-SVM-20210602. During the meeting, Energy Safety requested further documentation on PacifiCorp's quality assurance program and the data inputs for the spreadsheets provided in DR29-SVM-020210602.
7	September 1, 2021	PacifiCorp provided the additional documentation and data Energy Safety requested during the meeting pertaining to PacifiCorp's quality assurance process and data spreadsheets provided in DR29-SVM-020210602.
8	October 19, 2021	Energy Safety requested to meet with PacifiCorp to review the additional data provided as inputs to the spreadsheets from DR29-SVM-020210602.
9	October 22, 2021	PacifiCorp and Energy Safety met to review the additional data that PacifiCorp provided on September 1, 2021.
10	October 22, 2021	Energy Safety sent PacifiCorp DR044-SVM-20211022 requesting documentation to support initiative completion as reported in the Q4 2020 Quarterly Initiative Update for initiative 5.3.5.13.
11	November 5, 2021	PacifiCorp provided its response to DR044-SVM-20211022.
12	May 16, 2022	Energy Safety sent PacifiCorp DR-096-SVM-20220516 asking for documentation supporting statements made in the 2020 WMP.
13	May 31, 2022	PacifiCorp provided its response to DR-096-SVM-20220516.
14	July 7, 2022	PacifiCorp and Energy Safety met to review PacifiCorp's response to DR-096-SVM-20220516.
15	July 13, 2022	Energy Safety sent PacifiCorp DR-108-SVM-20220713.
16	July 20, 2022	PacifiCorp provided its response to DR-108-SVM-20220713.
17	August 2, 2022	Energy Safety sent PacifiCorp DR-109-SVM-20220802, due on August 9, 2022.
18	August 10, 2022	As a result of not receiving a response to DR109-SVM-20220802 on August 9, 2022, Energy Safety emailed PacifiCorp requested PacifiCorp provided its response. Subsequently, PacifiCorp provided its response to DR-109-SVM-20220802.

5.0 ANALYSIS

This section contains an initiative-by-initiative analysis of all vegetation management initiatives in PacifiCorp's 2020 WMP. Within each subsection verifiable statements, supporting information, and Energy Safety analysis are provided for each initiative followed by a summary of Energy Safety's disposition on utility compliance.

5.1 Initiative 5.3.5.1: Additional Efforts to Manage Community and Environmental Impacts

The purpose of this initiative is to describe the utility's "strategy to mitigate negative impacts from utility vegetation management to local communities and the environment."[20]

5.1.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

In its 2020 WMP, PacifiCorp states it "collaborates with local emergency responders or state organizations as needed to reduce fuel and facilitate improved escape or evacuation routes.... These efforts are on an as-needed basis and incorporate additional efforts to manage community environments within other programs."[21] Energy Safety reviewed email correspondence from 2020 with the local United States Forest Service (USFS) unit[22] coordinating timber removal and fuel reduction to help improve right of way access along Highway 89.[23] In response to DR-096-SVM-20220516, PacifiCorp stated this was the only instance in which it collaborated with the USFS in 2020 to reduce fuel within the utility's corridor. This supports PacifiCorp's statement regarding its collaboration efforts on an as-needed basis with local emergency responders. Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the statement above in its 2020 WMP about collaborating with local emergency responders or state organizations to reduce fuel and facilitate improved escape or evacuation routes.

5.1.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.1

Based on the analysis above, Energy Safety finds PacifiCorp compliant with the 2020 WMP Initiative 5.3.5.1: Additional Efforts to Manage Community and Environmental Impacts.

[20] 2020 WMP Guidelines, R.18-10-007, page 78
[21] 2020 WMP, page 216
[22] DR-096-SVM-20220516, response to question 1a, Attach OEIS 8.1.pdf, page 1
[23] DR-096-SVM-20220516, response to question 1a, Attach OEIS 8.1.pdf, page 9

5.2 Initiative 5.3.5.2: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment

The purpose of this initiative is to describe the utility's visual inspections of tree conditions within the utility's distribution right-of-way.[24]

5.2.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

In its 2020 WMP, PacifiCorp states that inspections include "the identification of imminent threats, including high risk vegetation."[25] Energy Safety reviewed PacifiCorp's Transmission & Distribution Vegetation Management Program Standard Operating Procedures manual (SOP), which directed inspectors to identify imminent threats,[26] including high risk vegetation.[27] Additionally, as a sample of this, Energy Safety reviewed data from PacifiCorp's field audits conducted in 2020 that identified dead "hazard" trees for removal.[28] Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the statement above in its 2020 WMP.

PacifiCorp's 2020 WMP continues by stating

> PacifiCorp's vegetation management program includes conducting inspections on distribution lines in advance of distribution cycle maintenance work… pre-work inspections are done immediately prior to the cycle work to identify which trees will be worked in the cycle, which would also include correction of any imminent threats or hazards.[29]

Energy Safety reviewed an Excel file supporting PacifiCorp's inspections and corrective work on approximately 909 miles of distribution lines accomplished in 2020.[30] The Excel file included the location, work code description, and the whether the work was completed.[31] Additionally, Energy Safety reviewed a sample of invoices from 2020 supporting distribution cycle maintenance work.[32] As part of its response to DR29-SVM20210602, PacifiCorp provided Energy Safety with an Excel file listing 19,065 trees that were pruned[33] and 2,895 trees that

[24] 2020 WMP Guidelines, R.18-10-007, page 78
[25] 2020 WMP, page 217
[26] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, pages 5, 39, 47, and 48
[27] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 15
[28] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx, cell J186
[29] 2020 WMP, page 217
[30] DR29-SVM-20210602, response to question 1a, DetailedInspCorrect_CA_2020.xlsx, sum of column "H"
[31] DR29-SVM-20210602, response to question 1a, DetailedInspCorrect_CA_2020.xlsx
[32] DR-096-SVM-20220516, response to question 2b, Attach OEIS 8.2-2.pdf
[33] DR29-SVM-20210602, response to question 1a, StatisticsHistoryReport_CA_2020_DetailedInspCorrect.xlsx, sum of column "K"

were removed[34] because of these pre-work inspections. Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the statement above in its 2020 WMP regarding distribution inspections resulting in trees being worked including imminent threats or hazards.

In its 2020 WMP, PacifiCorp states that "prior to the height of fire season, a vegetation inspection is conducted in the HFTD," and that "[b]eginning in 2019, PacifiCorp implemented an additional vegetation management inspection of all overhead lines in HFTD areas in California."[35] In data request DR-096-SVM-20220516, Energy Safety requested an Excel file showing distribution circuits and the respective HFTD tier, the "detailed inspection" dates, and the secondary "patrol inspection"[36] dates from 2020.[37] In response, PacifiCorp provided an Excel file of inspections without designation of HFTD tier nor program descriptions such as "detailed inspection" and "patrol inspection."[38] Moreover, the inspection dates provided spanned the calendar year indicating inspections are conducted throughout the year, not specifically "prior to the height of fire season."[39] Additionally, PacifiCorp stated in the response that its "reporting capability does not allow the separation between cycle work and high fire threat district."[40] Furthermore, it is Energy Safety's understanding that PacifiCorp does not have the capability to provide the requested information due to the "transition from paper reports to a computerized tracking system" in 2020.[41] Without supporting documentation showing distribution lines with their respective location (i.e., HFTD tier) and the inspection type (i.e., patrol or detailed) from 2020, Energy Safety cannot confirm a second inspection was conducted on all overhead lines in HFTD areas as stated in PacifiCorp's 2020 WMP. Therefore, Energy Safety's audit found that PacifiCorp was unable to produce information consistent with the statement above in its 2020 WMP regarding conducting additional vegetation management inspections in HFTD areas.

In its 2020 WMP, PacifiCorp states, "...a Level 1 assessment is conducted to identify any trees which may have become high risk trees over the course of the prior year; suspect trees are subject to a Level 2 assessment, as outlined in ANSI A300 (Part 9)."[42] ANSI A300 (Part 9) defines Level 1 inspections as a limited visual inspection to identify obvious defects or damage to the tree that would result in an imminent or probable likelihood of failure.[43] Level 2 inspections are more detailed assessments of the tree (i.e., a 360-degree visual inspection around the tree including its roots, trunk, and branches) and the surrounding area.[44] PacifiCorp stated in its

[34] DR29-SVM-20210602, response to question 1a, StatisticsHistoryReport_CA_2020_DetailedInspCorrect.xlsx, sum of columns "N," "O," and "P"
[35] 2020 WMP, page 217
[36] "Detailed inspection" and "patrol inspection" were agreed-upon terms during a Microsoft Teams meeting between Energy Safety and PacifiCorp on May 16, 2022 while reviewing DR-096-SVM-20220516 prior to submission.
[37] DR-096-SVM-20220516, question 3
[38] DR-096-SVM-20220516, response to question 3, Attach OEIS 8.3.xlsx
[39] DR-096-SVM-20220516, response to question 3, Attach OEIS 8.3.xlsx, column B "Date inspected"
[40] DR-096-SVM-20220516, response to question 3
[41] DR-096-SVM-20220516, response to question 3
[42] 2020 WMP, page 217
[43] ANSI A300 Part 9 companion publication, "Tree Risk Assessment," Second Edition, published in 2017, pages 13-14
[44] ANSI A300 Part 9 companion publication, "Tree Risk Assessment," Second Edition, published in 2017, page 16

response to DR-096-SVM-20220516 that, "All inspectors are provided a copy of PacifiCorp's Transmission and Distribution Vegetation Management Program standard operating procedures (SOP) and are to adhere to the SOP and other guidance documents referenced in the SOP."[45] ANSI A300 (Part 9) is referenced in PacifiCorp's SOP.[46] As a sample of direction to inspectors to identify high risk trees, PacifiCorp provided a "benchmark agenda" (i.e., meeting agenda) with PacifiCorp employees and contractors from 2020 that discussed hazard trees and "resource guides."[47] However, the benchmark agenda did not specify Level 1 nor Level 2 assessments. Energy Safety met with PacifiCorp asking for clarification on its response to DR-096-SVM-20220516, during which PacifiCorp stated it does not have documentation supporting inspectors being directed to conduct Level 1 and Level 2 assessments on suspect trees from 2020.[48] Therefore, Energy Safety's audit found that PacifiCorp was unable to produce information consistent with the statement above in its 2020 WMP regarding inspectors conducting Level 1 and Level 2 assessments.

In its 2020 WMP, PacifiCorp states, "the inspector will identify for pruning or removal vegetation which is likely to violate minimum clearance distances prior to the next annual inspection."[49] Energy Safety reviewed PacifiCorp's SOP, which instructs inspectors on minimum clearance distances along distribution circuits for vegetation management.[50] Additionally, Energy Safety reviewed data from PacifiCorp audits of vegetation management work in 2020 that identified trees that would not maintain clearances until the next inspection, for which the trees were recommended for pruning.[51] Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with identifying vegetation that could violate minimum clearance distances prior to the next annual inspection.

PacifiCorp's 2020 WMP continues by stating that "vegetation management annually completes correction work based on the inspection results, including the prompt removal of all high risk trees identified during the annual vegetation inspection."[52] PacifiCorp provided an Excel file showing the location and miles completed, totaling approximately 909 miles of distribution circuits inspected.[53] In the Excel file, there is a column indicating that the tree work prescribed in the grid was either "Complete" or "Working."[54] "Working" meant work was completed in the first quarter of 2021, per PacifiCorp's response.[55] When filtering out work completed in 2020, PacifiCorp completed tree work on 784.56 miles of the 908.66 miles inspected. Therefore, there were approximately 124 miles of work of the approximately 909 miles claimed left uncorrected in 2020 that were carried over to the first quarter of 2021. Consequentially, Energy Safety's review of the documents showed PacifiCorp did not complete correction work annually.

[45] DR-096-SVM-20220516, response to question 18
[46] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 2 and 66
[47] DR-096-SVM-20220516, response to question 4, Attach OEIS 8.4.pdf
[48] Microsoft Teams meeting between Energy Safety and PacifiCorp on July 7, 2022
[49] 2020 WMP, page 217
[50] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 37
[51] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx, cells J61 and J88
[52] 2020 WMP, page 217
[53] DR29-SVM-20210602, response to question 1a, DetailedInspCorrect_CA_2020.xlsx, sum of column "H"
[54] DR29-SVM-20210602, response to question 1a, DetailedInspCorrect_CA_2020.xlsx, column "G"
[55] CA R.18-10-007 WSD Compliance Set 2 (1-4) 6-16-21.pdf, response to question 2a

Additionally, Energy Safety requested documentation supporting inspections identifying vegetation management work of high-risk trees along a distribution circuit in 2020.[56] In its response, PacifiCorp referenced its response to a similar question for a transmission line.[57] Though the response for the transmission line question did support PacifiCorp's inspection program identifying high-risk trees, the response was for transmission inspections, not distribution inspections. Therefore, Energy Safety's audit found that PacifiCorp could not produce information consistent with the statement in its 2020 WMP regarding annually completing correction work based on inspection results, including the prompt removal of high-risk trees, along distribution lines.

Under Table 25 of this initiative in its 2020 WMP, PacifiCorp targeted 825 line miles[58] to be "treated."[59] Energy Safety reviewed a PacifiCorp Excel file supporting inspections and corrective work completed on approximately 909 miles of inspections along distribution lines accomplished in 2020, including the location, work code description, and whether the work was completed.[60] Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement that it targeted 825 line miles under this initiative.

5.2.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.2

Based on the analysis above, Energy Safety finds PacifiCorp not compliant with the 2020 WMP Initiative 5.3.5.2: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment. See Section 6.0 of this audit for a list of corrective actions.

5.3 Initiative 5.3.5.3: Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment

The purpose of this initiative is to describe the utility's visual inspections of the tree's conditions within the utility's transmission right-of-way.[61]

5.3.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

In its 2020 WMP, PacifiCorp states, inspections include "the identification of imminent threats, including high risk vegetation."[62] Energy Safety reviewed PacifiCorp's SOP, which included

[56] DR-096-SVM-20220516, question 5
[57] DR-096-SVM-20220516, response to question 5, Attach OEIS 8.7-1.pdf
[58] 2020 WMP, page 251
[59] "Treated" in Table 25 can mean vegetation inspections or tree work depending on the WMP initiative.
[60] DR29-SVM-20210602, response to question 1a, DetailedInspCorrect_CA_2020.xlsx, sum of column "H"
[61] 2020 WMP Guidelines, R.18-10-007, page 78
[62] 2020 WMP, page 217

direction to inspectors to identify imminent threats,[63] including high risk vegetation.[64] As a sample of this, Energy Safety reviewed an Excel file showing transmission circuits, inspection dates, and notes from the inspection, including prescribing the removal of dead trees.[65] Therefore Energy Safety's audit found PacifiCorp was able to produce information consistent with the 2020 WMP statement above.

PacifiCorp's 2020 WMP continues by stating,

> To determine whether work is needed, an "Action Threshold" is applied, meaning that work is done if vegetation has grown within the action threshold distance. Additionally, PacifiCorp employs "Integrated Vegetation Management" (IVM) practices to prevent vegetation growth from ever violating clearances which are further described in Section 5.3.5.20.[66]

Energy Safety reviewed PacifiCorp's SOP that describes "Action Thresholds"[67] and IVM practices.[68] The SOP defines "Action Thresholds" as being "roughly a ten-foot buffer" beyond the regulatorily-required clearance distances.[69] The SOP describes IVM practices as manual, mechanical, chemical (such as herbicide), biological, and cultural.[70] Additionally, Energy Safety reviewed a sample of PacifiCorp inspection data prescribing vegetation management work along transmission lines for 2020, including the location, circuit name, inspection date, type of work required (i.e., herbicide use and right of way clearing), the work location (i.e., right of way and beyond the right of way[71]), inspection notes, and the type of tree clearances prescribed (i.e., 10 to 15 feet, 15 to 20 feet, and greater than 20 feet).[72] Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the above statement from the 2020 WMP.

In its 2020 WMP, PacifiCorp states that "beginning in 2019, PacifiCorp implemented an additional vegetation management inspection for all overhead lines in HFTD areas in [California]."[73] Energy Safety requested supporting documentation showing all transmission circuits inspected under "detailed inspections" and transmission circuits inspected under the secondary "patrol inspections"[74] in 2020 with HFTD tiers listed.[75] In response, PacifiCorp provided an Excel file of inspections without designation of HFTD tier nor program description

[63] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, pages 5, 39, 47, and 48
[64] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 15
[65] DR-096-SVM-20220516, response to question 8, Attach 8.8-2.xlsx
[66] 2020 WMP, page 220
[67] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, pages 46, 47, and 49
[68] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, pages 50-51
[69] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 46
[70] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, pages 50-51
[71] The Excel file used the terms "Edge" and "ROW." Energy Safety understands "Edge" to mean beyond the right of way (ROW).
[72] DR-096-SVM-20220516, response to question 6, Attach OEIS 8.6.xlsx
[73] 2020 WMP, page 220
[74] "Detailed inspection" and "patrol inspection" were agreed-upon terms during a Microsoft Teams meeting between Energy Safety and PacifiCorp on May 16, 2022 while reviewing DR-096-SVM-20220516prior to submission.
[75] DR-096-SVM-20220516, question 6

(i.e. "detailed inspection" and "patrol inspection").[76] Additionally, PacifiCorp stated that its "reporting capability does not allow the separation between detailed inspections and patrol inspections."[77] Furthermore, it is Energy Safety's understanding that PacifiCorp does not have the capability to provide the requested information due to the transition "from paper reports to a computerized tracking system" in 2020.[78] Without supporting documentation showing transmission lines with their respective HFTD tier and the inspection type from 2020, Energy Safety cannot confirm a secondary inspection was conducted on all overhead lines in HFTD areas as stated in the 2020 WMP. Therefore, Energy Safety's audit found that PacifiCorp was unable to produce information with the 2020 WMP statement regarding additional vegetation management inspections for overhead lines in HFTD areas.

PacifiCorp states in its 2020 WMP that

> Each year, prior to the height of fire season, a vegetation inspection is conducted in the HFTD. Consistent with existing procedures, a Level 1 assessment is conducted to identify any trees which may have become high risk trees over the course of the prior year; suspect trees are subjected to a Level 2 assessment, as outlined in ANSI A300 (Part 9). In addition, the inspector will identify for pruning or removal vegetation which is likely to violate minimum clearance distances prior to the next annual inspection.[79]

Energy Safety reviewed a sample work release form from 2020 of a transmission circuit inspected prior to fire season, with the inspection period starting in January and completing in April.[80] The work release form directed contractors to remediate "high risk/hazard trees." Additionally, the work release form directed tree crews to "work vegetation that will encroach upon or be within 12.5 [feet], including consideration for line sag and other conditions by end of 2020."[81] Also, Energy Safety reviewed PacifiCorp's transmission inspection and vegetation management data from 2020, which included location, forester name, HFTD tier, work code descriptions, and miles inspected.[82] Additionally, Energy Safety reviewed PacifiCorp's SOP, which instructs inspectors on minimum clearance distances along transmission circuits for vegetation management.[83] PacifiCorp stated in its response to DR-096-SVM-20220516 that, "All inspectors are provided a copy of PacifiCorp's Transmission and Distribution Vegetation Management Program standard operating procedures (SOP) and are to adhere to the SOP and other guidance documents referenced in the SOP."[84] ANSI A300 (Part 9) is referenced in

[76] DR-096-SVM-20220516, response to question 6, Attach OEIS 8.6.xlsx
[77] DR-096-SVM-20220516, response to question 6
[78] DR-096-SVM-20220516, response to question 6b
[79] 2020 WMP, page 220
[80] DR-096-SVM-20220516, question 7, Attach OEIS 8.7-1.pdf
[81] DR-096-SVM-20220516, question 7, Attach OEIS 8.7-1.pdf
[82] DR29-SVM-20210602, response to question 4a, CaliforniaTierIITierIIITracker_CY_2020.xlsx
[83] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 47
[84] DR-096-SVM-20220516, response to question 18

PacifiCorp's "Transmission & Distribution Vegetation Management Program Standard Operating Procedures" manual.[85]

As a sample of direction to inspectors to identify high risk trees, PacifiCorp provided a "benchmark agenda" (i.e., meeting agenda) with PacifiCorp employees and contractors from 2020 that discussed hazard trees and "resource guides."[86] However, the benchmark agenda did not specify Level 1 nor Level 2 assessments. Energy Safety met with PacifiCorp asking for clarification on its response to DR-096-SVM-20220516, during which PacifiCorp stated it does not have documentation supporting inspectors being directed to conduct Level 1 and Level 2 assessments on suspect trees from 2020.[87] Despite Energy Safety's audit finding that PacifiCorp was able to produce information consistent with identifying vegetation likely to violate minimum clearance distances, Energy Safety's audit found that PacifiCorp was unable to produce information consistent with the statement above from the 2020 WMP regarding Level 1 and Level 2 inspections along transmission lines.

PacifiCorp's 2020 WMP continues by stating, "In conjunction with such annual inspections, vegetation management annually completes correction work based on the inspection results, including the prompt removal of all high-risk trees identified during the annual vegetation inspection."[88] Energy Safety reviewed a sample work release form from 2020 of a transmission circuit inspected prior to fire season, with the inspection period starting in January and completing in April.[89] The work release form directed contractors to remediate "high risk/hazard trees." Additionally, Energy Safety reviewed an Excel file showing inspections of vegetation along transmission lines, including the treatment of vegetation (i.e., removal or prune).[90] Despite the Excel file including the inspection dates, it does not include the dates of the corrective work identified from the inspections, as requested in DR-096-SVM-20220516.[91] Without the inspection dates and corresponding corrective work completion dates, Energy Safety cannot confirm correction work is annually completed based on inspection results. Therefore, Energy Safety's audit found that PacifiCorp was not able to produce information consistent with the above statement from the 2020 WMP regarding annually completing corrective work identified during inspections.

Under this initiative in its 2020 WMP, Table 25, PacifiCorp targeted 345 miles to be treated.[92] Energy Safety reviewed inspection data for 322.65 miles of transmission lines inspected,[93] 22.35 miles short of the target as stated in the 2020 WMP. Therefore, Energy Safety's audit

[85] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 2 and 66
[86] DR-096-SVM-20220516, response to question 4, Attach OEIS 8.4.pdf
[87] Microsoft Teams meeting between Energy Safety and PacifiCorp on July 7, 2022
[88] 2020 WMP, page 221
[89] DR-096-SVM-20220516, question 8a, Attach OEIS 8.8-1.pdf
[90] DR-096-SVM-20220516, question 8b, Attach OEIS 8.8-2.xlsx, column R
[91] DR-096-SVM-20220516, question 8b
[92] 2020 WMP, page 251
[93] DR-029-SVM-20210602, response to question 4a, CaliforniaTierIITierIIITracker_CY_2020.xlsx, sum of column "M" after filtering column "G" by work code "FMT" and column "H" by blank cells only

found PacifiCorp could not provide information consistent with treating 345 miles of transmission lines.

5.3.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.3

Based on the analysis above, Energy Safety finds PacifiCorp not compliant with the 2020 WMP Initiative 5.3.5.3: Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment.

5.4 Initiative 5.3.5.4: Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions

The purpose of this initiative is to describe the utility's vegetation management in advance of weather conditions that increase ignition probability and wildfire consequence.[94]

5.4.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states that, "the emergency response vegetation management due to red flag warning or other urgent conditions is a subset and component of both the company's general emergency response plans and the company's grid operations and protocols wildfire mitigation program focused on personnel work procedures and training conditions of elevation fire risk."[95] Energy Safety reviewed the "Emergency Response" section of PacifiCorp's SOP, PacifiCorp's vegetation management manual for grid operations.[96] This section directs contractors to dispatch "crews whenever emergency restoration services are needed," generally during storm response.[97] Energy Safety then requested supporting documentation showing emergency response vegetation management was as a subset of PacifiCorp's "emergency response plans."[98] PacifiCorp provided Energy Safety with a presentation titled "Wildfire Preparedness, Prevention & Response," revised in April 2021 (2021 presentation).[99] Despite the 2021 presentation describing enhanced vegetation management as being a component of the Wildfire Mitigation Plan,[100] Energy Safety cannot use the 2021 presentation to support statements made in the 2020 WMP. Therefore Energy Safety asked for the version of the presentation used in 2020.[101] Similar to the 2021 presentation, the 2020 version referenced best practices of working with equipment during fire season such as "spraying dry

[94] 2020 WMP Guidelines, R.18-10-007, page 78
[95] 2020 WMP, page 223
[96] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, pages 16-17
[97] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 16
[98] DR-096-SVM-20220516, question 9
[99] DR-096-SVM-20220516, response to question 9, Attach OEIS 8.9.pdf
[100] DR-096-SVM-20220516, response to question 9, Attach OEIS 8.9.pdf, slides 5, 6, 8, 9
[101] DR-108-SVM-20220713, question 1

vegetation with water prior to work,"[102] and requiring crews to not park vehicles on tall grass.[103] However, the 2020 version did not reference enhanced vegetation management activities nor any other form of "emergency response vegetation management" along electrical equipment in PacifiCorp's general emergency response plans and response to urgent conditions or red flag warning. Therefore, Energy Safety's audit found that PacifiCorp was unable to produce information consistent with the above statement from the 2020 WMP.

5.4.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.4

Based on the analysis above, Energy Safety finds PacifiCorp not compliant with the 2020 WMP initiative 5.3.5.4: Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions.

5.5 Initiative 5.3.5.5: Fuel Management and Reduction of "Slash" From Vegetation Management Activities

The purpose of this initiative is to describe the utility's efforts to reduce "the availability of fuel in proximity to potential sources of ignition, including "slash" from vegetation."[104]

5.5.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states

> PacifiCorp's fuel management and reduction of "slash" from vegetation management activities, which are described further within the company's Transmission and Distribution Vegetation Management Program Standard Operating Procedures manual, focus on ensuring that these materials are not left within the tree canopy and that they are disposed of properly to reduce the volume of available fuel within the right of way.[105]

Energy Safety reviewed PacifiCorp's SOP and found it describes slash management in a manner consistent with the language in the 2020 WMP.[106] Specifically, the SOP instructs crews to not allow trimmed branches to be "left in the tree canopy."[107] Additionally, the SOP directs crews to pile slash "at the sides of distribution rights-of-way and outside the wire zone of transmission

[102] DR-108-SVM-20220713, response to question 1, 5.3.5.4 – Wildfire Preparedness_Prevention_Response_2020 (002).pdf, slide 6
[103] DR-108-SVM-20220713, response to question 1, 5.3.5.4 – Wildfire Preparedness_Prevention_Response_2020 (002).pdf, slide 5
[104] 2020 WMP Guidelines, R.18-10-007, page 78
[105] 2020 WMP, page 224
[106] Transmission and Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 16
[107] Transmission and Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 16

rights-of-ways."[108] Finally, Energy Safety reviewed a PacifiCorp-provided Excel files showing fuel management work around poles[109] beyond the regulatorily required areas[110] and slash management work along distribution lines[111] from 2020. Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the above statement from the 2020 WMP.

5.5.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.5

Based on the analysis above, Energy Safety finds PacifiCorp compliant with the 2020 WMP Initiative 5.3.5.5: Fuel Management and Reduction of "Slash" From Vegetation Management Activities.

5.6 Initiative 5.3.5.6: Improvement of Inspections

The purpose of this initiative is to describe the utility's efforts to improve "inspection protocols and implementation of training and the evaluation of inspectors."[112]

5.6.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

In its 2020 WMP, PacifiCorp states that it "is evaluating and working to implement electronic and GIS-based planning, tracking, and recording of vegetation management activities."[113] Similarly, the WMP initiative continues by stating "Foresters will begin working [with] the GIS [geographic information system] department to secure digital maps consistent with the company's master version and use electronic forms and records to capture activities."[114] Energy Safety reviewed email correspondences from early January 2020 between a vendor and PacifiCorp employees activating accounts for a GIS planning and tracking program named "MapItFast."[115] Additionally, PacifiCorp provided Energy Safety with the MapItFast user guide showing the various capabilities of the program, including its ability to record vegetation management activities such as "notifying customers of pole treating,"[116] plotting geolocation points along a map,[117] entering completed vegetation management work,[118] and tracking property owner's permission for removal of trees.[119] Also, Energy Safety reviewed an email

[108] Transmission and Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 16
[109] DR29-SVM-20210602, response to question 2a, StatisticsHistoryReport_CA_2020_PoleClearing.xlsx
[110] These poles were located in the Local Responsibility Area, which are not required to be cleared under Public Resource Code 4292.
[111] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx, cell J167
[112] 2020 WMP Guidelines, R.18-10-007, page 79
[113] 2020 WMP, page 225
[114] 2020 WMP, page 226-227
[115] DR-096-SVM-20220516, response to question 10, Attach OEIS 8.10.pdf
[116] DR-096-SVM-20220516, response to question 10, Attach OEIS 8.10.pdf, page 6
[117] DR-096-SVM-20220516, response to question 10, Attach OEIS 8.10.pdf, page 4
[118] DR-096-SVM-20220516, response to question 10, Attach OEIS 8.10.pdf, page 4
[119] DR-096-SVM-20220516, response to question 10, Attach OEIS 8.10.pdf, page 4

between a PacifiCorp Utility Forestry Arborist and a vendor from November 2020, which showed the Utility Forestry Arborist working with the GIS department via acquiring shapefiles.[120] Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the above statement from the 2020 WMP.

In its 2020 WMP, PacifiCorp states it "adopted increased minimum clearance specifications beginning in 2020. The new minimum clearance specifications require pruning to at least twelve (12) feet, in all directions and for all types of trees."[121] Energy Safety's review of PacifiCorp's SOP found the minimum clearance specifications require pruning to at least 12 feet for all trees.[122] Also, PacifiCorp provided Energy Safety with supporting Excel files listing trees that were pruned in 2020, and the corresponding distance prescribed for pruning (i.e., 10 to 15 feet, 15 to 20 feet, and more than 20 feet).[123] Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the above statement from the 2020 WMP.

PacifiCorp's 2020 WMP continues by stating

> As included in Section 5.3.5.9, PacifiCorp vegetation management has implemented expanded pole clearing in addition to previous programs and regulations on subject equipment poles located in the HFTD. Pole clearing involves removing all vegetation within a ten-foot radius cylinder of clear space around a subject pole and applying herbicides and soil sterilants to prevent any vegetation regrowth (unless prohibited by law or the property owner).[124]

Energy Safety's found PacifiCorp's SOP defines subject equipment poles having "fuses, air switches, clamps or other devices that could create sparks and start fires."[125] The SOP continues by describing pole clearing activities as applying herbicides, including soil sterilants, and removing all vegetation for a ten-foot radius around poles.[126] Additionally, Energy Safety reviewed samples of PacifiCorp's pole clearing data for poles beyond the regulatory requirements in 2020.[127] Finally, Energy Safety reviewed an Excel file provided by PacifiCorp showing herbicide use by contractors around subject equipment poles in 2020.[128] Therefore, Energy Safety's audit found that PacifiCorp was able to produce information consistent with the above statement from the 2020 WMP.

[120] DR-096-SVM-20220516, response to question 12, Attach OEIS 8.12.pdf
[121] 2020 WMP, page 226
[122] Transmission and Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 37, Table 5.2
[123] DR29-SVM-20210602, response to question 1a, StatisticsHistoryReport_CA_2020_DetailedInspCorrect.xlsx; and DR-096-SVM-20220516, response to question 2c, Attach OEIS 8.2-3.xlsx
[124] 2020 WMP, page 226
[125] Transmission and Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 43
[126] Transmission and Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 43
[127] DR29-SVM-20210602, response to question 2a, StatisticsHistoryReport_CA_2020_PoleClearing.xlsx and DR-096-SVM-20220516, response to question 11, Attach OEIS 8.11.xlsx
[128] DR-109-SVM-20220802, response to question 1, DR-109-SVM-20220802_5.3.5.6_Question 1.xlsx

5.6.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.6

Based on the analysis above, Energy Safety finds PacifiCorp compliant with the 2020 WMP Initiative 5.3.5.6: Improvement of Inspections.

5.7 Initiative 5.3.5.7: LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment

The purpose of this initiative is to describe the utility's Light Detection and Ranging (LiDAR) distribution right of way inspection program.[129]

5.7.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states it "does not have a specific vegetation management and inspections wildfire mitigation program focused on LiDAR inspections of vegetation around distribution electric lines and equipment"[130] and refers readers to initiative 5.3.4.7.[131] In initiative 5.3.4.7, PacifiCorp stated it "performed LiDAR… data collection, analysis, and system modeling on the PacifiCorp network in four select areas of Northern California."[132] Energy Safety requested LiDAR inspection data for vegetation in the "four selected areas" mentioned in the 2020 WMP.[133] PacifiCorp provided Energy Safety with its third-party report of a 2020 LiDAR pilot project, titled "Pacific Power Enhanced Transmission & Distribution LiDAR Survey for 3D Clearance Modeling."[134] One of the purposes of the pilot was to measure vegetation clearances[135] and identify vegetation intrusions[136] along distribution and transmission lines. The report aggregated all circuits' LiDAR data; however, PacifiCorp provided a list of the circuits and their location respective to the "four selected areas" mentioned in the 2020 WMP.[137] Energy Safety's review of the report showed PacifiCorp collected LiDAR data in the four areas described in the WMP and analyzed it for modeling purposes in 2020. Therefore, Energy Safety's audit found PacifiCorp was able to provide information consistent with the WMP regarding performing LiDAR, data collection, analysis and system modeling work in four select areas.

[129] 2020 WMP Guidelines, R.18-10-007, page 79
[130] 2020 WMP, page 229
[131] 2020 WMP, page 229
[132] 2020 WMP, page 191
[133] DR29-SVM-20210602, question 13
[134] DR-108-SVM-20220713, response to question 2, 5.3.5.7 - ROAMES Pilot Project-FInalSummaryReport_Fugro_20200409.pdf
[135] DR-108-SVM-20220713, response to question 2, 5.3.5.7 - ROAMES Pilot Project-FInalSummaryReport_Fugro_20200409.pdf, page 8
[136] DR-108-SVM-20220713, response to question 2, 5.3.5.7 - ROAMES Pilot Project-FInalSummaryReport_Fugro_20200409.pdf, page 9
[137] DR-108-SVM-20220713, response to question 2

5.7.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.7

Based on the analysis above, Energy Safety finds PacifiCorp compliant with the 2020 WMP Initiative 5.3.5.7: LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment.

5.8 Initiative 5.3.5.8: LiDAR Inspections of Vegetation Around Transmission Electric Lines and Equipment

The purpose of this initiative is to describe the utility's Light Detection and Ranging (LiDAR) transmission right of way inspection program.[138]

5.8.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

Similar to initiative 5.3.5.7, under initiative 5.3.5.8 PacifiCorp's 2020 WMP states it "does not have a specific vegetation management and inspections wildfire mitigation program focused on LiDAR inspections of vegetation around transmission electric lines and equipment"[139] and refers readers to initiative 5.3.4.8.[140] In initiative 5.3.4.8, PacifiCorp stated it "performed LiDAR… data collection, analysis, and system modeling on the PacifiCorp network in four select areas of Northern California."[141] See Section 5.7 above where Energy Safety analyzed an identical statement.

5.8.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.8

See Energy Safety's determination for initiative 5.3.5.7 above.

5.9 Initiative 5.3.5.9: Other Discretionary Inspection of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations

[138] 2020 WMP Guidelines, R.18-10-007, page 79
[139] 2020 WMP, page 230
[140] 2020 WMP, page 230
[141] 2020 WMP, page 191

The purpose of this initiative is to describe the utility's inspection program of the distribution right of ways and the adjacent vegetation that may be hazardous, which goes beyond the minimum standards in rules and regulations.[142]

5.9.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states, "At this time, PacifiCorp does not have any other discretionary inspection of vegetation around transmission[sic] electric lines and equipment, beyond inspections mandated by rules and regulations, and other described programs." Therefore, Energy Safety did not conduct an analysis of this initiative.

5.9.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.9

Based on the information above, Energy Safety did not conduct an analysis of this initiative.

5.10 Initiative 5.3.5.10: Other Discretionary Inspection of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations

The purpose of this initiative is to describe the utility's inspection program of the transmission right of ways and the adjacent vegetation that may be hazardous which goes beyond the minimum standards in rules and regulations.[143]

5.10.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states that "At this time, PacifiCorp does not have any other discretionary inspection of vegetation around transmission electric lines and equipment, beyond inspections mandated by rules and regulations, and other described programs."[144] Therefore, Energy Safety did not conduct an analysis of this initiative.

5.10.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.10

Based on the information above, Energy Safety did not conduct an analysis of this initiative.

[142] 2020 WMP Guidelines, R.18-10-007, page 79
[143] 2020 WMP Guidelines, R.18-10-007, page 79
[144] 2020 WMP, page 232

5.11 Initiative 5.3.5.11: Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment

The purpose of this initiative is to describe the utility's distribution right of way inspection program to identify "obvious [vegetation] hazards."[145]

5.11.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states, "PacifiCorp's description of patrol inspections of vegetation around distribution electric lines and equipment is included in the company's description of detailed inspections of vegetation around distribution lines and equipment. See Section 5.3.5.2."[146] Therefore, Energy Safety did not conduct a separate analysis. See Energy Safety's analysis for initiative 5.3.5.2 under section 5.2 of this audit.

5.11.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.11

See Energy Safety's determination for compliance under initiative 5.3.5.2.

5.12 Initiative 5.3.5.12: Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment

The purpose of this initiative is to describe the utility's transmission right of way inspection program to identify "obvious [vegetation] hazards."[147]

5.12.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states, "PacifiCorp's description of patrol inspections of vegetation around transmission electric lines and equipment is included in the company's description of detailed inspections of vegetation around transmission lines and equipment. See Section 5.3.5.3."[148] Therefore, Energy Safety did not conduct a separate analysis. See Energy Safety's analysis for initiative 5.3.5.3 under section 5.3 of this audit.

5.12.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.12

See Energy Safety's determination for compliance under initiative 5.3.5.3.

[145] 2020 WMP Guidelines, R.18-10-007, page 79
[146] 2020 WMP, page 233
[147] 2020 WMP Guidelines, R.18-10-007, page 79
[148] 2020 WMP, page 234

5.13 Initiative 5.3.5.13: Quality Assurance / Quality Control of Inspections

The purpose of this initiative is to describe the utility's program to audit completed vegetation work, including its input into "decision-making and related integrated workforce management processes."[149]

5.13.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states:

> Each audit includes a Forester, crew leader, and, optionally, the Supervisor. During these audits, standard forms are used to capture any observations and exceptions along with comments, required corrective work, and feedback for the inspectors…. if during the course of the audit, an exception is identified that violates either federal or state law or poses as imminent safety or reliability risk, the audit will be temporarily suspended, the crew may be shut down, and the corrective work will be performed immediately.[150]

Energy Safety reviewed PacifiCorp's standard Tree Crew Field Audit Form[151] as well as exception reports from the audits conducted in 2020.[152] Exceptions found during audits include the identification of dead trees along a span, bird nests in and around the equipment on a pole, broken cross arm support brackets on a pole, poles with cracks, and dead limbs overhanging the lines. PacifiCorp does not track whether exceptions found pose imminent safety or reliability risk separately;[153] however, PacifiCorp stated in its data request response that "21 lines that were audited resulted in exceptions."[154] Additionally, Energy Safety's review of PacifiCorp's exception reports from the audits found that there was an instance when the auditor found a broken crossarm and waited on site until a line crew arrived to correct the work.[155] Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement regarding conducting audits.

[149] 2020 WMP Guidelines, R.18-10-007, page 79
[150] 2020 WMP, page 235
[151] Transmission and Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 77
[152] DR-096-SVM-20220516, response to question 14a, "Attach OEIS 8.14.xlsx"
[153] DR-096-SVM-20220516, response to question 14b
[154] DR-096-SVM-20220516, response to question 14c
[155] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx, cell J196

5.13.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.13

Based on the analysis above, Energy Safety finds PacifiCorp compliant with the 2020 WMP initiative 5.3.5.13: Quality Assurance / Quality Control of Inspections.

5.14 Initiative 5.3.5.14: Recruiting and Training of Vegetation Management Personnel

The purpose of this initiative is to describe the utility's program to "identify and hire qualified vegetation management personnel" and to ensure they are "adequately trained to perform vegetation management work, according to the utility's wildfire mitigation plan, in addition to rules and regulations for safety."[156]

5.14.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states PacifiCorp "takes advantage of training that is provided by the company and arboriculture industry and issues materials as needed, such as a High Risk Tree Identification presentation created in 2019 to educate inspectors on proper identification of defective trees that have the potential to strike the facilities."[157] PacifiCorp provided the following trainings in 2020: annual environmental training, high risk tree training, wildfire response training, and tree removal training.[158] PacifiCorp also provided Energy Safety with sign-in sheets for the "Wildland Fire Preparedness and Prevention Plan training,"[159] the "Wildfire Training" from Trees, LLC,[160] the "Tree Felling Training" class,[161] and a training that included "avian/environmental" topics[162] from 2020. Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement above about training.

5.14.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.14

Based on the analysis above, Energy Safety finds PacifiCorp compliant with the 2020 WMP initiative 5.3.5.14: Recruiting and Training of Vegetation Management Personnel.

5.15 Initiative 5.3.5.15: Remediation of At-Risk Species

[156] 2020 WMP Guidelines, R.18-10-007, page 79
[157] 2020 WMP, page 237
[158] DR-096-SVM-20220516, response to question 15a
[159] DR-096-SVM-20220516, response to question 15b, Attach OEIS 8.15.pdf, pages 1-3, 5
[160] DR-096-SVM-20220516, response to question 15b, Attach OEIS 8.15.pdf, page 4
[161] DR-096-SVM-20220516, response to question 15, Attach OEIS 8.15.pdf, pages 6-7
[162] DR-096-SVM-20220516, response to question 15, Attach OEIS 8.15.pdf, pages 8-10

The purpose of this initiative is to describe the utility's actions to "reduce the ignition probability and wildfire consequence attributable to at-risk vegetation species…."[163]

5.15.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states, "Remediation of at-risk species is a subset to the company's vegetation management to achieve clearances around electric lines and equipment program as it contains, as an element, the company's practices procedures, and funding to remediate at-risk species. See Section 5.3.5.18."[164] Under initiative 5.3.5.18, PacifiCorp's 2020 WMP directs readers to initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9, and 5.3.5.20.[165] Therefore, Energy Safety did not conduct a separate analysis for this initiative. See Energy Safety's analysis for initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9, and 5.3.5.20.

5.15.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.15

See Energy Safety's determination for compliance under initiative 5.3.5.18.

5.16 Initiative 5.3.5.16: Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment

The purpose of this initiative is to describe the utility's program to remove or remediate strike-potential trees."[166]

5.16.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states,

> Removal and remediation of trees with strike potential to electric lines and equipment is a subset to the company's vegetation management to achieve clearances around electric lines and equipment program as it contains, as an element, the company's practices procedures, and funding to remove and remediate trees with strike potential to electric lines and equipment. See Section 5.3.5.18.[167]

[163] 2020 WMP Guidelines, R.18-10-007, page 79
[164] 2020 WMP, page 238
[165] 2020 WMP, page 241
[166] 2020 WMP Guidelines, R.18-10-007, page 79
[167] 2020 WMP, page 239

Under initiative 5.3.5.18, the 2020 WMP directs readers to initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9 and 5.3.5.20.[168] Therefore, Energy Safety did not conduct a separate analysis. See Energy Safety's analysis for initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9 and 5.3.5.20 under sections 5.2, 5.3, 5.9, and 5.20 of this audit.

5.16.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.16

See Energy Safety's determination for compliance under initiative 5.3.5.18.

5.17 Initiative 5.3.5.17: Substation Inspections

The purpose of this initiative is to describe the utility's vegetation inspection program around its substations."[169]

5.17.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP refers readers to initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9, and 5.3.5.20 under this initiative.[170] 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 did not conduct a separate analysis for this initiative. See Energy Safety's analysis for initiatives 5.3.5.2 and 5.3.5.3.

5.17.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.17

See Energy Safety's analysis for initiatives 5.3.5.2 and 5.3.5.3.

5.18 Initiative 5.3.5.18: Substation Vegetation Management

The purpose of this initiative is to describe the utility's vegetation management program for substations in terms of "actions taken to reduce the ignition probability and wildfire consequence attributable to contact from vegetation to substation equipment."[171]

[168] 2020 WMP, page 214
[169] 2020 WMP Guidelines, R.18-10-007, page 79
[170] 2020 WMP, page 240
[171] 2020 WMP Guidelines, R.18-10-007, page 80

5.18.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP directs readers to initiatives 5.3.5.2, 5.3.5.3, 5.3.5.9, and 5.3.5.20.[172] 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 did not conduct a separate analysis for this initiative. See Energy Safety's analysis for initiatives 5.3.5.2 and 5.3.5.3.

5.18.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.18

See Energy Safety's determination for compliance under initiatives 5.3.5.2 and 5.3.5.3.

5.19 Initiative 5.3.5.19: Vegetation Inventory System

The purpose of this initiative is to describe the utility's efforts toward having a "centralized inventory of vegetation clearances" that includes species, growth forecast, and grow-in, fly-in, or fall-in risk."[173]

5.19.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states that it "does not have a defined vegetation inventory system program."[174] The WMP continues by stating PacifiCorp, "is currently evaluating required steps, funding, and technology requirements to develop, implement, and incorporate a new tree density inventory system targeted initially within the HFTD to inform risk assessment and prioritization of efforts."[175] Energy Safety reviewed presentations titled "Analysis of Salo Vegetation Beta Trial Data" and "Extracting Vegetation Information Near PacifiCorp Resources from Public Data Sets" from 2020.[176] The presentations provided an overview of results of trial testing of the technology,[177] comparing different modeling technologies in terms of vegetation density,[178] and the statuses of using public data sets in PacifiCorp territory.[179] PacifiCorp provided additional slides from the Analysis of the Salo Vegetation Beta Trial Data presentation, which showed a cost analysis for the program.[180] Therefore, Energy Safety's audit found PacifiCorp was able to provide information consistent with the WMP statement above

[172] 2020 WMP, page 241
[173] 2020 WMP Guidelines, R.18-10-007, page 80
[174] 2020 WMP, page 242
[175] 2020 WMP, page 242
[176] DR-096-SVM-20220516, response to question 16, Attach OEIS 8.16.pdf
[177] DR-096-SVM-20220516, response to question 16, Attach OEIS 8.16.pdf, page 3
[178] DR-096-SVM-20220516, response to question 16, Attach OEIS 8.16.pdf, page 13
[179] DR-096-SVM-20220516, response to question 16, Attach OEIS 8.16.pdf, page 17-19, 21, 24, 27
[180] DR-108-SVM-20220713, response to question 3, Salo Beta Test Short.pdf, slide 10

regarding evaluating the steps, funding and technology requirements to incorporate a tree density inventory system to inform risk assessment and prioritization of efforts.

5.19.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.19

Based on the analysis above, Energy Safety finds PacifiCorp compliant with the 2020 WMP initiative 5.3.5.19: Vegetation Inventory System.

5.20 Initiative 5.3.5.20: Vegetation Management to Achieve Clearances Around Electric Lines and Equipment

The purpose of this initiative is to describe the utility's actions to safeguard vegetation so that it does not encroach upon the minimum clearances in GO 95.[181]

5.20.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states that it "adopted a minimum clearance distance, at time of work, of at least twelve (12) feet for all distribution lines and at least twenty (20) feet for transmission lines under 115 kV and thirty (30) feet for any transmission lines of 115 kV or above."[182] Energy Safety reviewed PacifiCorp's SOP, which prescribes at least 12 feet for all distribution lines in California,[183] 20 feet for transmission lines under 115 kV,[184] and 30 feet for transmission lines of 115 kV or above.[185] Additionally, Energy Safety reviewed PacifiCorp inspection data prescribing vegetation clearance work along transmission lines[186] and distribution lines[187] for 2020; see Sections 5.2 and 5.3 of this audit above. Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement above regarding required clearances.

The 2020 WMP continues by stating that,

> PacifiCorp uses increased clearance distances on distribution lines for certain species of trees, depending on tree growth rate. PacifiCorp separates vegetation into three categories (a) slow growing; (b) moderate growing; and (c) fast growing. In all cases, PacifiCorp applies the minimum clearance of

[181] 2020 WMP Guidelines, R.18-10-007, page 80
[182] 2020 WMP, page 243
[183] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 37, Table 5.2
[184] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 47, Table 6.1
[185] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 47, Table 6.1
[186] DR-096-SVM-20220516, response to question 6, Attach OEIS 8.6.xlsx
[187] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx

> twelve (12) feet for slow growing species. In certain cases, PacifiCorp applies an increased clearance for moderate growing and fast-growing species.[188]

Energy Safety reviewed PacifiCorp's SOP, which categorized vegetation as slow, moderate, and fast growing; with clearances of a minimum of 12 feet, and increased clearances for moderate (12 to 14 feet) and fast (14 to 16 feet) growing vegetation.[189] Additionally, Energy Safety reviewed PacifiCorp inspection data prescribing vegetation clearance work along transmission lines[190] and distribution lines[191] for 2020; see Sections 5.2 and 5.3 of this audit above. Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the clearances and vegetation categories described in the 2020 WMP.

In its 2020 WMP, PacifiCorp states that it:

> integrates spatial concepts to distinguish between (i) side clearances, (ii) under clearances, and (iii) overhang clearances. Recognizing that certain trees grow vertically faster than other trees, it is appropriate to use an increased clearance when moderate or fast-growing trees are under a conductor. Increasing overhang clearances also reduces the potential for faults due to overhang.[192]

Energy Safety reviewed PacifiCorp's SOP, which distinguished prescribed clearances specific to side, under, and overhang clearances.[193] Additionally, the SOP prescribed greater under clearances for moderate and fast-growing vegetation compared to slow growing vegetation. Also, Energy Safety's review of the SOP showed overhang clearances were greater for moderate and fast-growing vegetation compared to slow growing vegetation. Finally, Energy Safety reviewed PacifiCorp inspection data prescribing vegetation management work along transmission lines[194] and distribution lines[195] for 2020; see Sections 5.2 and 5.3 of this audit, above. Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement above.

PacifiCorp's 2020 WMP continues by stating it "uses natural target pruning for all prune work…."[196] Energy Safety reviewed PacifiCorp's SOP, which directs contractors to use natural targets as the "proper final pruning cut locations" for vegetation.[197] Additionally, as a sample of PacifiCorp conducting a quality control assessment of this standard, Energy Safety reviewed a sample audit report that showed the auditor documenting improper pruning by a contractor.[198]

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[188] 2020 WMP, page 243
[189] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 37, Table 5.2
[190] DR-096-SVM-20220516, response to question 6, Attach OEIS 8.6.xlsx
[191] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx
[192] 2020 WMP, page 243
[193] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 37, Table 5.2
[194] DR-096-SVM-20220516, response to question 6, Attach OEIS 8.6.xlsx
[195] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx
[196] 2020 WMP, page 243
[197] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 22
[198] DR-109-SVM-20220802, response to question 2, DR-109-SVM-20220802_Question 2.xlsx

Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement regarding using natural target pruning for vegetation management work.

In its 2020 WMP, PacifiCorp states that it "uses forty (40) feet for minimum clearance work on a 345 kV transmission line." Energy Safety reviewed PacifiCorp's SOP, which directs contractors to achieve 40 feet minimum clearances on 345 kV lines.[199] Additionally, Energy Safety reviewed PacifiCorp inspection data prescribing vegetation clearance work along transmission lines[200] for 2020, see Section 5.3 of this audit above. Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with clearances described in the 2020 WMP.

PacifiCorp's 2020 WMP states that its "existing Standard Operating Procedures require the removal of hazard trees... [and] encourage removal even when removal is not required under GO 95, Rule 35 or PRC 4293."[201] Energy Safety reviewed PacifiCorp's SOP, which describes hazard trees as "High Risk Trees."[202] The SOP encourages contractors to remove trees within distribution right of ways.[203] Additionally, in terms of transmission vegetation management, the SOP informs contractors that "removal of trees is generally superior to pruning. Removal minimizes the possibility of conflicts between energized conductors and vegetation."[204] Finally, Energy Safety reviewed PacifiCorp inspection data prescribing tree removals along transmission lines[205] and distribution lines[206] for 2020; see Sections 5.2 and 5.3 of this audit above. Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement regarding encouraging removal of hazard trees.

In its 2020 WMP, PacifiCorp states that PacifiCorp identifies hazard trees during inspections "with particular attention to the prevailing winds and trees on any uphill slope."[207] Energy Safety reviewed PacifiCorp's SOP, which directs contractors to consider slope when assessing boundaries of the wire and border zone for transmission lines.[208] PacifiCorp's response to DR-096-SVM-20220516 states "All inspectors are provided a copy of PacifiCorp's Transmission and Distribution Vegetation Management Program standard operating procedures (SOP) and are to adhere to the SOP and other guidance documents referenced in the SOP."[209] The SOP references ANSI A300 (Part 9) Tree Risk Assessment,[210] which directs contractors to consider site factors including "wind exposure" and "site topography, including slope and aspect" when evaluating for tree failure.[211] Additionally, Energy Safety reviewed a benchmark agenda from

[199] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 47
[200] DR-096-SVM-20220516, response to question 6, Attach OEIS 8.6.xlsx
[201] 2020 WMP, page 244
[202] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 15
[203] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 15
[204] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 54
[205] DR-096-SVM-20220516, response to question 6, Attach OEIS 8.6.xlsx
[206] DR-096-SVM-20220516, response to question 14a, Attach OEIS 8.14.xlsx
[207] 2020 WMP, page 244-245
[208] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 51
[209] DR-096-SVM-20220516, response to question 18
[210] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 2
[211] ANSI A300 (Part 9), Second edition published in 2017, page 26

2020 that discussed hazard trees and "resource guides."[212] Therefore, Energy Safety's audit found PacifiCorp was able to provide information consistent with the WMP statement regarding contractors accounting for slope and prevailing winds when assessing for hazard trees.

PacifiCorp's 2020 WMP states:

> PacifiCorp plans to be more aggressive in generally reducing total inventory, thereby proactively removing more trees before such trees ever become hazard trees. While it would be unfeasible to remove all trees which have the potential to become hazard trees (i.e. by definition, all trees eventually become hazard trees when they die), PacifiCorp plans to remove a greater number of trees in the HFTD which have a higher potential of becoming a hazard tree.[213]

PacifiCorp stated in its response to DR-096-SVM-20220516 that in 2020 it "did not differentiate between hazard trees and other tree removals"[214] and provided two Excel files showing the number of tree removals from 2019[215] and 2020.[216] Energy Safety's review of the files showed PacifiCorp removed 7,695 trees in 2019[217] and 8,070 trees in 2020.[218] Therefore, Energy Safety's audit found PacifiCorp was able to produce information supporting the removal of a greater number of trees in 2020 compared to 2019.

In its 2020 WMP, PacifiCorp states the "removal of cycle buster trees, which are extremely fast growing species, is encouraged."[219] Energy Safety reviewed PacifiCorp's SOP, which states that "interim work is focused on the fastest growing trees, referred to as 'cycle-busters,' which may not hold for an entire cycle."[220] Additionally, Energy Safety reviewed a sample of a "Contractor Work Release" form from 2020 directing contractors to "record locations for cycle buster trees that are good candidates for tree growth regulator applications."[221] Finally, Energy Safety reviewed an Excel file showing that contractors removed 8,070 trees in 2020.[222] The removal of cycle buster trees would be included in this total number of trees removed in 2020. Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement above.

PacifiCorp's 2020 WMP states it "is targeting particular areas of high density vegetation for increased removal of non-compatible tree species that have a potential to encroach on

[212] DR-096-SVM-20220516, response to question 17, Attach OEIS 8.17.pdf
[213] 2020 WMP, page 245
[214] DR-096-SVM-20220516, response to question 19
[215] DR-096-SVM-20220516, response to question 19, Attach OEIS 8.19-1.xlsx
[216] DR-096-SVM-20220516, response to question 19, Attach OEIS 8.19-2.xlsx
[217] DR-096-SVM-20220516, response to question 19, Attach OEIS 8.19-1.xlsx, sum of columns G, H, and I
[218] DR-096-SVM-20220516, response to question 19, Attach OEIS 8.19-2.xlsx, sum of columns H, I and J
[219] 2020 WMP, page 245
[220] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 40
[221] DR-096-SVM-20220516, response to question 20, Attach OEIS 8.20-2.pdf, page 1
[222] DR-096-SVM-20220516, response to question 19, Attach OEIS 8.19-2.xlsx, sum of columns H, I and J

facilities."[223] Energy Safety reviewed a presentation titled "Extracting Vegetation Information Near PacifiCorp Resources from Public Data Sets" from March 2020.[224] The presentation provided the statuses of using public data sets in PacifiCorp territory.[225] PacifiCorp's response to DR-096-SVM-20220516 provided more context for the provided presentation, stating, "The document provided is an overview of analysis conducted incorporating tree density/canopy into Localized Risk Assessment Model (LRAM) which is available to foresters for consideration when competing[sic] vegetation management activities."[226] Although the information provided supported the exploration of using public data to analyze tree density along its infrastructure, PacifiCorp failed to provide documentation supporting it used the data to target areas of high density of vegetation for increased removal. Therefore, Energy Safety's audit found PacifiCorp was unable to provide information consistent with the WMP statement that it targeted areas of high density vegetation for increased removal of incompatible tree species.

Finally, in its 2020 WMP, PacifiCorp states it "will consider tree height as a factor in determining whether any particular tree is a candidate for preemptive removal."[227] PacifiCorp's SOP directs contractors to evaluate tree height when considering if a tree should be removed.[228] Additionally, Energy Safety reviewed PacifiCorp inspection data showing inspectors noted tree height when recommending the trees for removal.[229] Therefore, Energy Safety's audit found PacifiCorp was able to provide supporting documentation supporting the WMP statement above regarding inspectors considering tree height during inspections.

Under this initiative in its 2020 WMP, Table 25, PacifiCorp provided an annual target to treat 3,195 line miles[230] based off of previous years (2019) data.[231] In its response to DR-096-SVM-20220516, PacifiCorp resubmitted an Excel file of its fourth quarter (Q4) 2020 Quarterly Initiative Update (QIU) previously submitted to Energy Safety on April 1, 2021.[232] Summing the projected targets for initiatives 5.3.5.2, 5.3.5.3, 5.3.5.11 and 5.3.5.12[233] in that dataset totals 2,201 miles for treatment. This response detailing 2,201 miles for treatment marked a significant change compared to the initiative target stated in PacifiCorp's 2020 WMP (i.e., 3,195 miles for treatment). Energy Safety notes that at the time, the only mechanism for changing initiative targets in an approved WMP is to go through the formal process of requesting a Change Order. PacifiCorp made no such requests for its 2020 WMP. Note that in the QIU, PacifiCorp did not report any targeted or completed miles under initiative 5.3.5.20 but instead reported a financial target for the initiative. Regardless of the miles reported in the QIU, PacifiCorp providing Energy Safety with the Q4 2020 QIU as supporting evidence for completion of 3,195 miles, as targeted in its approved 2020 WMP, is not sufficient documentation in terms

[223] 2020 WMP, page 245
[224] DR-096-SVM-20220516, response to question 21, Attach OEIS 8.21.pdf
[225] DR-096-SVM-20220516, response to question 21, Attach OEIS 8.21.pdf, pages 3-5
[226] DR-096-SVM-20220516, response to question 21
[227] 2020 WMP, page 245-246
[228] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 15
[229] DR-096-SVM-20220516, response to question 3, Attach OEIS 8.3.xlsx, column "U"
[230] 2020 WMP, page 251
[231] DR-096-SVM-20220516, response to question 23
[232] DR-096-SVM-20220516, response to question 23, Attach OEIS 8.23.xlsx
[233] DR-096-SVM-20220516, response to question 23, Attach OEIS 8.23.xlsx, sum of cells Q19, Q20, Q22 and Q23

of this audit. Therefore, Energy Safety's audit found PacifiCorp was unable to provide supporting documentation consistent with the completion of 3,195 miles under this initiative in 2020.

5.20.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.20

Based on the analysis above, Energy Safety finds PacifiCorp not compliant with the 2020 WMP initiative 5.3.5.20: Vegetation Management to Achieve Clearances Around Electric Lines and Equipment.

5.21 Initiative 5.3.5.21: Other – Radial Pole Clearing

This initiative was not a part of the 2020 WMP Guidelines but is an initiative PacifiCorp added to its 2020 WMP.

5.21.1 2020 WMP Initiative Statements, Supporting Information, and Analysis

PacifiCorp's 2020 WMP states it "expanded pole clearing to include 2,768 Local Responsibility Area (LRA) subject equipment poles located in the HFTD in addition to its existing program in compliance with regulations of clearing 12,292 State Responsibility Area (SRA) subject poles."[234] The sum of which equates to 15,060 poles cleared of vegetation, PacifiCorp's target as stated in the 2020 WMP in Table 25.[235] Energy Safety reviewed an Excel file that showed contractors cleared 2,164 LRA subject poles,[236] 604 poles short of the number targeted in the WMP. The file also showed contractors cleared 12,885[237] "Distribution Pole Clearing"[238] poles, 593 over the number stated in the WMP. The total number of poles cleared equates to 15,049 cleared poles, 11 poles short of the target in the 2020 WMP. Therefore, Energy Safety's audit found PacifiCorp was unable to provide information consistent with the WMP statement regarding the number of poles it would clear of vegetation in 2020, primarily LRA subject poles.

In its 2020 WMP, PacifiCorp states "Pole clearing involves the removal of all vegetation within a ten-foot radius cylinder of clear space around a subject pole and the application of herbicides and soil sterilants to prevent any vegetation regrowth (unless prohibited by law or the property owner)."[239] Energy Safety reviewed PacifiCorp's SOP which directs contractors to remove vegetation within a ten-foot radius "around subject poles, [and] herbicides, including soil sterilants, should be applied, unless expressly prohibited or it is against the customer's

[234] 2020 WMP, page 248
[235] 2020 WMP, page 256
[236] DR-096-SVM-20220516, response to question 22, Attach OEIS 8.22, sheet "Summary by Work Cd & Work ID," column S "#Poles Cleared" after filtering column F "Work Code" to LRA
[237] DR-096-SVM-20220516, response to question 22, Attach OEIS 8.22.xlsx, sheet "Summary by Work Cd & Work ID," column S "#Poles Cleared" after filtering column F "Work Code" to Distribution Pole Clearing (DPL)
[238] DR-108-SVM-20220713, response to question 4: "Distribution Pole Clearing" are poles cleared in SRA for PRC 4292
[239] 2020 WMP, page 248

wishes."[240] Additionally, Energy Safety reviewed an Excel file provided by PacifiCorp showing herbicide use by contractors around subject equipment poles in 2020.[241] Therefore, Energy Safety's audit found PacifiCorp was able to produce information consistent with the WMP statement above regarding vegetation management around poles.

5.21.2 Energy Safety's Determination for 2020 WMP Initiative 5.3.5.21

Based on the analysis above, Energy Safety finds PacifiCorp not compliant with the 2020 WMP initiative 5.3.5.21: Other – Radial Pole Clearing.

6.0 CONCLUSION

Energy Safety reviewed all 21 initiatives pertaining to vegetation management in PacifiCorp's 2020 WMP. Energy Safety's audit found PacifiCorp noncompliant with 13 of the 21 vegetation management initiatives in its 2020 WMP. In these instances of noncompliance, Energy Safety's audit found that PacifiCorp was unable to provide supporting documentation or information consistent with statements made in its 2020 WMP regarding its vegetation management initiatives.

This audit is not an assessment of the quality of PacifiCorp's execution of its vegetation management programs.

See Table 4 below for a summary of Energy Safety's findings and corrective actions for PacifiCorp pertaining to this audit. Within 30 days following receipt of this audit, PacifiCorp shall file its response to the below Corrective Actions on the 2020 SVM Docket with a file named "PacifiCorp 2020 SVM Audit Corrective Action Plan."

Corrective Actions

Table 4: Findings from Energy Safety's 2020 SVM Audit

Noncompliant Initiative Number	Finding	Corrective Action
5.3.5.2	1i: PacifiCorp's transition to a computerized tracking system in 2020 prevents PacifiCorp from being able to provide documentation to support commitments made in its 2020 WMP.	PacifiCorp shall detail the steps it is taking to ensure that its data management process allows PacifiCorp to readily verify and produce documentation showing its vegetation management programs are consistent with statements made in the WMP.

[240] Transmission & Distribution Vegetation Management Program Standard Operating Procedures.pdf, page 43
[241] DR-109-SVM-20220802, response to question 1, DR-109-SVM-20220802_5.3.5.6_Question 1.xlsx

Noncompliant Initiative Number	Finding	Corrective Action
5.3.5.2	1ii: PacifiCorp failed to provide documentation demonstrating that inspectors were directed to conduct Level 1 and Level 2 assessments to identify high risk trees along distribution lines in 2020.	PacifiCorp shall detail the steps it is taking to ensure that it can readily verify and produce documentation showing its vegetation management programs are consistent with statements made in the WMP.
5.3.5.2	1iii: PacifiCorp failed to provide documentation demonstrating that correction work is completed annually based on distribution inspections, including the identification of high-risk trees.	PacifiCorp shall a) provide an explanation of why PacifiCorp failed to complete all correction work identified in inspections in 2020, b) provide an explanation of why PacifiCorp failed to provide documentation supporting inspections identifying vegetation management work of high risk trees along a distribution circuit in 2020 as requested in DR-096-SVM-20220516, and c) provide the steps it is taking to ensure its vegetation management operations are consistent with the statements made in the WMP.
5.3.5.3	2i: PacifiCorp's transition to a computerized tracking system in 2020 prevents PacifiCorp from being able to provide documentation to support commitments made in its 2020 WMP.	PacifiCorp shall detail the steps it is taking to ensure that its data management process allows PacifiCorp to readily verify and produce documentation showing its vegetation management programs are consistent with statements made in the WMP.
5.3.5.3	2ii: PacifiCorp failed to provide documentation demonstrating that inspectors were directed to conduct Level 1 and Level 2 assessments to identify high risk trees along transmission lines in 2020.	PacifiCorp shall detail the steps it is taking to ensure that it can readily verify and produce documentation showing its vegetation management programs are consistent with statements made in the WMP.
5.3.5.3	2iii: PacifiCorp failed to provide documentation demonstrating that correction work is completed annually based on transmission inspections.	PacifiCorp shall a) provide an explanation of why PacifiCorp failed to provide documentation showing that correction work is completed annually based on transmission inspections, and b) provide the steps it is taking to ensure its vegetation management operations are consistent with the statements made in the WMP.
5.3.5.3	2iv: PacifiCorp targeted inspecting 345 miles of transmission lines, but	PacifiCorp shall a) explain why it failed to reach its target of miles of transmission line inspected in 2020, and b) provide the steps it is taking to ensure its

Noncompliant Initiative Number	Finding	Corrective Action
	provided documentation showing inspection of 322.65 miles, 22.35 miles short of the target.	vegetation management operations are consistent with the targets set in the WMP.
5.3.5.4	3: PacifiCorp failed to provide documentation showing vegetation management along electrical equipment was a subset of PacifiCorp's general emergency response plans and response to urgent conditions or red flag warning in 2020.	PacifiCorp shall a) provide an explanation of why PacifiCorp was unable to provide documentation showing that vegetation management along electrical equipment was a subset of PacifiCorp's general emergency response plans and response to urgent conditions or red flag warnings in 2020, and b) provide the steps it is taking to ensure its vegetation management emergency response operations are consistent with the statements made in the WMP.
5.3.5.20	4i: PacifiCorp failed to provide documentation demonstrating it targeted areas of high density of vegetation for increased removal.	PacifiCorp shall a) provide an explanation for why it failed to provide a plan for implementing a program for increased removal of high-risk trees in areas high density vegetation, b) if available, provide an example of the plan for the program implementation, and c) detail the steps it is taking to ensure vegetation management operations are consistent with statements made in the WMP.
5.3.5.20	4ii: PacifiCorp failed to provide sufficient documentation demonstrating the completion of 3,195 miles treated.	PacifiCorp shall a) provide Energy Safety an Excel file or other form of documentation that is an output of PacifiCorp's data management system that shows PacifiCorp completed 3,195 miles treated under this initiative or b) if PacifiCorp cannot provide the supporting documentation, explain why.
5.3.5.21	5: PacifiCorp failed to clear 2,768 LRA poles as targeted, only clearing 2,164 LRA poles in 2020.	PacifiCorp shall a) provide an explanation of why it failed to clear 604 LRA poles in 2020, and b) detail the steps it is taking to ensure the vegetation management operations are consistent with statements made in the WMP.

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