



March 26, 2024

To: PacifiCorp  
Allen Berreth  
VP of T&D Operations  
825 NE Multnomah, Ste. 2000  
Portland, OR 97232

**Subject:** Office of Energy Infrastructure Safety’s Audit on PacifiCorp’s 2021 Substantial Vegetation Management Work.

Pursuant to the requirements of Public Utilities Code section 8386.3(c)(5)(A), the Office of Energy Infrastructure Safety (Energy Safety) has completed and enclosed the audit of PacifiCorp’s 2021 Substantial Vegetation Management work.

During the audit, Energy Safety reviewed data provided by PacifiCorp and compared it to the representations PacifiCorp made in its 2021 Wildfire Mitigation Plan Update. In performing the audit, Energy Safety found that PacifiCorp did not complete the work required for two (2) of the 18 applicable initiatives. PacifiCorp must submit its responsive Corrective Action Plan to the 2021-SVM docket<sup>1</sup> in Energy Safety’s e-filing system within 10 business days from the issuance of this audit. If you have any questions concerning this audit, please e-mail Sheryl Bilbrey at [Sheryl.Bilbrey@energysafety.ca.gov](mailto:Sheryl.Bilbrey@energysafety.ca.gov), and provide a copy to [compliance@energysafety.ca.gov](mailto:compliance@energysafety.ca.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Shannon O'Rourke".

Shannon O’Rourke  
Deputy Director | Electrical Infrastructure Directorate  
Office of Energy Infrastructure Safety  
Cc:  
Megan Buckner, PacifiCorp  
Pooja Kishore, PacifiCorp

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<sup>1</sup> All documents related to PacifiCorp’s 2021 SVM audit are available on Energy Safety’s e-filing under the “[2021-SVM](#)” docket and available here: (<https://efiling.energysafety.ca.gov/Lists/DocketLog.aspx?docketnumber=2021-SVM> [accessed March 14, 2024]).



State of California – A Natural Resources Agency

Gavin Newsom, Governor

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**OFFICE OF ENERGY INFRASTRUCTURE SAFETY**  
**2021 SUBSTANTIAL VEGETATION**  
**MANAGEMENT AUDIT**  
**PACIFICORP**

March 2024

## TABLE OF CONTENTS

1.	Introduction and Framework .....	1
2.	Scope of the Substantial Vegetation Management Audit .....	4
3.	PacifiCorp’s Vegetation Management Programs .....	5
4.	2021 WMP Update Vegetation Management Initiatives .....	6
5.	Documents Reviewed .....	7
6.	Analysis.....	8
6.1	Initiative 7.3.5.1: Additional Efforts to Manage Community and Environmental Impacts	8
6.1.1	2021 WMP Update Initiative Statements, Supporting Information, and Analysis.	8
6.1.2	Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.1 .....	14
6.2	Initiative 7.3.5.2: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment .....	15
6.2.1	2021 WMP Update Statements, Supporting Information, and Analysis .....	15
6.2.2	Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.2 .....	17
6.3	Initiative 7.3.5.3: Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment .....	17
6.3.1	2021 WMP Update Statements, Supporting Information and Analysis .....	17
6.3.2	Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.3 .....	18
6.4	Initiative 7.3.5.4: Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions.....	19
6.4.1	2021 WMP Update Statements, Supporting Information and Analysis .....	19
6.4.2	Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.4 .....	20
6.5	Initiative 7.3.5.5: Fuel Management and Reduction of “Slash” from VM Activities.....	20
6.5.1	2021 WMP Update Statements, Supporting Information and Analysis .....	20
6.5.2	Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.5 .....	23
6.6	Initiative 7.3.5.6: Improvement of Inspections .....	23
6.6.1	2021 WMP Update Statements, Supporting Information and Analysis .....	23
6.6.2	Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.6 .....	25

6.7 Initiative 7.3.5.7: LiDAR Inspections of Vegetation Around Distribution Electric Lies and Equipment.....	25
6.7.1 2021 WMP Update Statements, Supporting Information and Analysis .....	25
6.7.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.7 .....	26
6.8 Initiative 7.3.5.8: LiDAR Inspections of Vegetation Around Transmission Electric Lines and Equipment.....	26
6.8.1 2021 WMP Update Statements, Supporting Documentation, and Analysis .....	26
6.8.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.8. ....	26
6.9 Initiative 7.3.5.9: Other Discretionary Inspection of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations...	27
6.9.1 2021 WMP Update Statements, Supporting Information and Analysis .....	27
6.9.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.9 .....	27
6.10 Initiative 7.3.5.10: Other Discretionary Inspection of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations...	28
6.10.1 2021 WMP Update Statements, Supporting Information, and Analysis .....	28
6.10.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.10 .....	28
6.11 Initiative 7.3.5.11: Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment.....	28
6.11.1 2021 WMP Update Statements, Supporting Information, and Analysis .....	29
6.11.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.11 .....	31
6.12 Initiative 7.3.5.12: Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment .....	31
6.12.1 2021 WMP Update Statements, Supporting Information, and Analysis .....	31
6.12.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.12. ....	32
6.13 Initiative 7.3.5.13: Quality Assurance/Quality Control of Inspections.....	32
6.13.1 2021 WMP Update Statements, Supporting Information, and Analysis .....	32
6.13.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.13 .....	34
6.14 Initiative 7.3.5.14: Recruiting and Training of Vegetation Management Personnel ...	34
6.14.1 2021 WMP Update Statements, Supporting Information, and Analysis .....	35
6.14.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.14 .....	36

- 6.15 Initiative 7.3.5.15: Remediation of At-Risk Species ..... 36
  - 6.15.1 2021 WMP Update Statements, Supporting Information, and Analysis ..... 36
  - 6.15.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.15 ..... 37
- 6.16 Initiative 7.3.5.16: Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment ..... 38
  - 6.16.1 2021 WMP Update Statements, Supporting Information, and Analysis ..... 38
  - 6.16.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.16 ..... 39
- 6.17 Initiative 7.3.5.17: Substation Inspections ..... 39
  - 6.17.1 2021 WMP Update Statements, Supporting Information, and Analysis ..... 40
  - 6.17.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.17 ..... 40
- 6.18 Initiative 7.3.5.18: Substation Vegetation Management..... 40
  - 6.18.1 2021 WMP Update Statements, Supporting Information, and Analysis ..... 41
  - 6.18.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.18 ..... 41
- 6.19 Initiative 7.3.5.19: Vegetation Inventory System ..... 41
  - 6.19.1 2021 WMP Update Statements, Supporting Information, and Analysis ..... 41
- 6.20 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.19 ..... 43
- 6.21 Initiative 7.3.5.20: Vegetation Management to Achieve Clearances around Electric Lines and Equipment ..... 43
  - 6.21.1 2021 WMP Update Statements, Supporting Information, and Analysis ..... 43
  - 6.21.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.20 ..... 47
- 7. Corrective Actions ..... 47

**LIST OF TABLES**

- Table 1. Energy Safety’s Audit Determinations for PacifiCorp’s 2021 WMP Update Vegetation Management Initiatives ..... 2
- Table 2. Findings from Energy Safety’s 2021 SVM Audit of PacifiCorp..... 48

# 1. Introduction and Framework

The Office of Energy Infrastructure Safety (Energy Safety) must, on an annual basis, audit the vegetation management work performed by an electrical corporation upon notification that the electrical corporation has completed a substantial portion of the vegetation management requirements in its Wildfire Mitigation Plan (WMP).<sup>1</sup> In each audit, Energy Safety must specify any failure of the electrical corporation to fully comply with the vegetation management requirements in the WMP.<sup>2</sup> The 2021 WMP guidelines contained 20 initiatives in the vegetation management section. Two (2) of the initiatives from the WMP guidelines do not apply to the 2021 vegetation management activities conducted by PacifiCorp. Therefore, Energy Safety completed an audit of the 18 applicable vegetation management initiatives from PacifiCorp's WMP Update. To effectuate this requirement, Energy Safety identified both quantitative commitments (e.g., miles of lines to inspect) and verifiable statements (e.g., training of personnel) in the vegetation management section of PacifiCorp's (PacifiCorp) 2021 WMP Update and conducted this audit to determine if PacifiCorp performed the work required by each of those commitments and statements.

In performing the audit, Energy Safety found that PacifiCorp did not complete the work required for two (2) initiatives, as summarized below:

- Initiative 7.3.5.2: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment
  - PacifiCorp completed 1,471 miles of its target of 1,476 miles of inspections in 2021. Although PacifiCorp missed its target by five (5) miles, it completed the remaining five (5) miles of missed inspections in early 2022. Energy Safety acknowledges that PacifiCorp ultimately completed all 1,476 inspection miles shortly after the end of 2021. Therefore, PacifiCorp is not required to include corrective actions for this initiative in the Corrective Action Plan.
- Initiative 7.3.5.5: Fuel Management and Reduction of “Slash” from VM Activities
  - PacifiCorp completed clearance on 2,872 poles of its target of clearing 3,047 poles in 2021.

Energy Safety found that PacifiCorp performed the work required for the other 16 initiatives in the WMP, as detailed in Table 1 below.

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<sup>1</sup> Cal. Pub. Util. Code §8386.3, subd. (c)(5)(A); 2023 Compliance Guidelines, Section 6.1, page 14.

<sup>2</sup> *Id.*

Table 1. Energy Safety's Audit Determinations for PacifiCorp's  
2021 WMP Update Vegetation Management Initiatives

2021 WMP Update Initiative Number	2021 WMP Update Initiative Name	Determination
7.3.5.1	Additional Efforts to Manage Community and Environmental Impacts	Performed all required work
7.3.5.2	Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment	<b>Did not perform all required work</b>
7.3.5.3	Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment	Performed all required work
7.3.5.4	Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions	Performed all required work
7.3.5.5	Fuel Management and Reduction of "Slash" from VM Activities	<b>Did not perform all required work</b>
7.3.5.6	Improvement of Inspections	Performed all required work
7.3.5.7	LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment	Performed all required work
7.3.5.8	LiDAR Inspections of Vegetation Around Transmission Electric Lines and Equipment	Performed all required work
7.3.5.11	Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment	Performed all required work
7.3.5.12	Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment	Performed all required work
7.3.5.13	Quality Assurance/Quality Control of Inspections	Performed all required work

2021 WMP Update Initiative Number	2021 WMP Update Initiative Name	Determination
7.3.5.14	Recruiting and Training of Vegetation Management Personnel	Performed all required work
7.3.5.15	Remediation of At-Risk Species	Performed all required work
7.3.5.16	Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment	Performed all required work
7.3.5.17	Substation Inspections	Performed all required work
7.3.5.18	Substation Vegetation Management	Performed all required work
7.3.5.19	Vegetation Inventory System	Performed all required work
7.3.5.20	Vegetation Management to Achieve Clearances Around Electric Lines and Equipment	Performed all required work

## 2. Scope of the Substantial Vegetation Management Audit

To conduct this audit, Energy Safety evaluated the vegetation management section of PacifiCorp's 2021 WMP Update.<sup>3</sup> The 2021 WMP guidelines contained 20 initiatives in the vegetation management section. Two (2) of the initiatives from the WMP guidelines do not apply to the 2021 vegetation management activities conducted by PacifiCorp. In reviewing the remaining 18 initiatives from the vegetation management section in PacifiCorp's 2021 WMP Update, 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.

On February 7, 2022, PacifiCorp submitted a letter to Energy Safety via Energy Safety's e-filing system notifying that it had "completed a substantial portion of the vegetation management requirements of its 2021 Wildfire Mitigation Plan."<sup>4</sup>

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<sup>3</sup> 2021 WMP Update guidelines, Resolution WSD-011, page 43. <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf>.

<sup>4</sup> Notification of Completion of Substantial Vegetation Management. <https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=52017&shareable=true> (February 7, 2022).

### 3. PacifiCorp's Vegetation Management Programs

PacifiCorp implements the following programs to perform vegetation management work along its distribution and transmission lines: Detailed Inspections on Distribution Lines, Fuel Management and Reduction of “slash,” Readiness Patrols and Quality Assurance / Quality Control Program. Each of these programs is described in more detail below for reference throughout the report.

- **Detailed Inspections on Distribution Lines:** Inspections of vegetation around distribution lines and equipment to identify imminent threats or hazards and vegetation conditions that do not comply with PacifiCorp's program standards/specifications.<sup>5</sup>
- **Fuel Management and Reduction of “slash”:** PacifiCorp conducts fuel management through removal of slash from the tree canopy, chipping debris where accessible, and removes (recycles where practicable) slash in developed areas unless the property owner indicates otherwise.<sup>6</sup>
- **Readiness Patrols:** PacifiCorp implemented “readiness patrols” of overhead lines in High Fire Threat District (HFTD). This initiative facilitates removal and or pruning of vegetation that may pose an ignition risk, such as hazard trees. Prior to the height of the fire season, PacifiCorp conducts these readiness patrols of overhead distribution lines located within HFTD Tier II and Tier III, where program cycle work has not been completed or is not scheduled.<sup>7</sup>
- **Quality Assurance/Quality Control Program:** PacifiCorp's Vegetation SOP includes the company's standard procedures and protocols for performing vegetation management audits. In general, this standard includes routine tree crew audits of transmission, distribution and pole clearing activities where the primary purpose is an assessment of quality assurance.<sup>8</sup>

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<sup>5</sup> PacifiCorp 2021 WMP Update, page 159. [https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/pacifcorp\\_2021\\_wmp.pdf](https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/pacifcorp_2021_wmp.pdf).

<sup>6</sup> PacifiCorp 2021 WMP Update, page 161.

<sup>7</sup> PacifiCorp 2021 WMP Update, page 165.

<sup>8</sup> PacifiCorp 2021 WMP Update, page 166.

## 4. 2021 WMP Update Vegetation Management Initiatives

In its 2021 WMP Update, PacifiCorp identified 20 vegetation management initiatives (no activities were applicable for 2 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
9. Other discretionary inspection of vegetation around distribution electric lines and equipment, beyond inspections mandated by rules and regulations (not applicable)
10. Other discretionary inspection of vegetation around transmission electric lines and equipment, beyond inspections mandated by rules and regulations (not applicable)
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

## 5. Documents Reviewed

To complete this audit, Energy Safety reviewed the following records and documents:

1. PacifiCorp's 2021 Wildfire Mitigation Report Update, revised March 5, 2021 (PacifiCorp's 2021 WMP Update).
2. PacifiCorp's notification letter.
3. PacifiCorp's 2021 Quarterly Data Reports for quarters 1, 2, 3 and 4.
4. PacifiCorp's response to Energy Safety's data request DR-116.
5. PacifiCorp's response to Energy Safety's data request DR-131.
6. PacifiCorp's response to Energy Safety's data request DR-133.
7. PacifiCorp's response to Energy Safety's data request DR-198.
8. PacifiCorp's response to Energy Safety's data request DR-211.

## 6. Analysis

This section contains an initiative-by-initiative analysis of all vegetation management initiatives in PacifiCorp’s 2021 WMP Update. Within each subsection, verifiable statements, supporting information, and Energy Safety analysis are provided for each initiative followed by a summary of Energy Safety’s determination on utility compliance.

### 6.1 Initiative 7.3.5.1: Additional Efforts to Manage Community and Environmental Impacts

The purpose of this initiative is to describe the utility’s “plan and execution strategy to mitigate negative impacts from utility vegetation management to local communities and the environment, such as coordination with communities to plan and execute vegetation management work or promotion of fire-resistant planting practices.”<sup>9</sup>

#### 6.1.1 2021 WMP Update Initiative Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, “as a customer courtesy, at least five business days in advance of vegetation management work, customers are notified. Notification includes personal notification, door hangers, mail, and consent forms.”<sup>10</sup> Energy Safety reviewed an example Inventory Form,<sup>11</sup> example Work Completeness report,<sup>12</sup> and a Yreka District Pacific Power Owner Permission form<sup>13</sup> from 2021. PacifiCorp provided the inventory form from its mobile data management software. The inventory form included the date inspected, contact type (i.e., personal, door hangers, mail, or consent forms), location, and work description for each quarter of 2021. The distribution work completeness report describes the date the work was completed and whether there were any exceptions related to the inspections included in the inventory form. PacifiCorp also provided the property owner permission form that describes the property being inspected and the services performed during the inspection. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of the work identified in this statement regarding customer notification of impending vegetation management work.

PacifiCorp’s 2021 WMP Update continues by stating that “when a tree is identified to be removed or herbicide or growth regulators are to be used, PacifiCorp makes reasonable

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<sup>9</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 3, 2023).

<sup>10</sup> PacifiCorp 2021 WMP Update, page 157.

<sup>11</sup> DR-131, response to OEIS data request 11.1a, “Attachment 1 Example Inventory.”

<sup>12</sup> DR-131, response to OEIS data request 11.1a, “Attachment 2 Example Work Complete.”

<sup>13</sup> DR-131, response to OEIS data request 11.1b, “Attachment 3 Yreka\_District\_PP\_Owner\_Permission.”

attempts to obtain customer consent. Where customers refuse to allow PacifiCorp to conduct required vegetation management work, attempts are made to further coordinate with the customer to resolve concerns. If resolution cannot be achieved by PacifiCorp's contracted representative, PacifiCorp's Senior Utility and/or Utility Forester will coordinate with the customer to attempt to resolve concerns and acquire customer consent."<sup>14</sup> Energy Safety reviewed e-mail communication<sup>15</sup> documenting that the PacifiCorp forester met with a customer and resolved concerns communicated between PacifiCorp and the customer. Energy Safety also reviewed the herbicide inventory report<sup>16</sup> provided by PacifiCorp, which included notes that inspectors take regarding use of herbicide and to document customer preference.<sup>17</sup> Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of the work identified in this statement regarding obtaining customer consent and resolving customer concerns related to vegetation management work.

In its 2021 WMP Update, PacifiCorp states "through this customer interaction, PacifiCorp will take opportunities to provide or present through discussion, a variety of educational materials regarding tree-power line conflicts and planting the right tree in the right place."<sup>18</sup> Energy Safety reviewed a brochure,<sup>19</sup> which includes the following information: energy efficiency resources and incentives, the right tree for every season, tree placement for shade and energy savings, the right place for shade, planting considerations and precautions, the right place for wind protection, and selecting and planting trees. Energy Safety also reviewed a brochure for small tree uses adjacent to power lines.<sup>20</sup> The brochure describes how to plant the right tree in the right place, pruning trees in proximity to distribution lines, choosing the appropriate small tree for planting, the 100 tree species to use adjacent to power lines, how to plant a tree (i.e., planting trees for energy efficiency, environmental benefits, tree maintenance, and safety matters), index of common tree species, and resources for more information. PacifiCorp also provided a brochure for trees and power lines,<sup>21</sup> which includes safety tips around power lines, the work that professional arborists and tree crews perform, limitations to pruning around certain property, and ways property owners can help to avoid tree-related power outages. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of the work identified in this statement regarding providing educational materials to customers.

PacifiCorp's 2021 WMP Update explains that "where larger- scale projects are planned that will have community impacts, PacifiCorp coordinates with leadership at the state and local levels, including cities, counties, and neighborhood associations or groups, such as fire safe

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<sup>14</sup> PacifiCorp 2021 WMP Update, page 157.

<sup>15</sup> DR-131, response to OEIS data request 11.2a, "Re\_Shadow Valley Ranch – 2525 Stewart Springs Rd\_Weed CA."

<sup>16</sup> DR-131, response to OEIS data request 11.2b, "PplInventory 202 Herbicide\_Customer Note."

<sup>17</sup> DR-131, response to OEIS data request 11.2b.

<sup>18</sup> PacifiCorp 2021 WMP Update, page 157.

<sup>19</sup> DR-131, response to OEIS data request 11.3, "Attachment 1 – Planting Trees for Energy Efficiency Pacific."

<sup>20</sup> DR-131, response to OEIS data request 11.3, "Attachment 2 – Small Trees for Small Places Pacific 8.5x11."

<sup>21</sup> DR-131, response to OEIS data request 11.3, "Attachment 3 – Trees & Power Lines Brochure Pacific."

councils.”<sup>22</sup> Energy Safety reviewed contractor work release forms<sup>23</sup> provided to PacifiCorp’s inspection contractor, ACRT Incorporated, to inspect the project area and identify trees for removal. Energy Safety also reviewed the California Department of Forestry and Fire Protection Environmental Review Report<sup>24</sup> for an Exempt Project which was an environmental review conducted by CAL FIRE in support of the fuel reduction project. Per the report, the project entails the installation of a narrow (10 – 60 feet) shaded fuel break directly adjacent to Interstate 5 within a portion of the Caltrans’s right-of-way and Siskiyou County property. PacifiCorp also provided a map of the South Dunsmuir Fuel Break,<sup>25</sup> which shows the project area covered per their inspection. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of the work identified in this statement regarding community impacts where PacifiCorp coordinates with leadership at the state and local levels.

PacifiCorp’s 2021 WMP Update continues by stating “where work will take place on municipal, county, state or federal properties, the appropriate authorizing officer or agency representative is notified and coordinated with. PacifiCorp routinely collaborates with local land managers in obtaining permits, scheduling work, and addressing issues as they arise. PacifiCorp works closely with various local offices of federal agencies to ensure there are approval processes in place for vegetation management work, including hazard tree removals. Annual meetings are held with agencies where applicable, to enhance communication, discuss scope of work, and identify permit requirements and potential environmental impacts of scheduled vegetation management work.”<sup>26</sup> Energy Safety reviewed a copy of Pacific Power’s<sup>27</sup> email notification to the Shasta-Trinity National Forest (Forest)<sup>28</sup> for hazard tree removal and provided the notice to proceed. The email documentation includes the work described as hazardous vegetation removal along Pacific Power between Mt. Shasta City and the Gray Butte junction across roughly 4 miles of National Forest System lands. Energy Safety also reviewed the Encroachment Permit<sup>29</sup> which was granted by the Caltrans to Pacific Power to trim trees and clear powerlines within Caltrans right-of-way for State conventional highways. Energy Safety noted that the permit was approved by Caltrans and dated December 22, 2020. PacifiCorp also provided the Encroachment Permit Rider form<sup>30</sup> which describes the authorization given to Pacific Power’s contractor, Arborworks, to conduct work under the 2021 encroachment permit. Energy Safety

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<sup>22</sup> PacifiCorp 2021 WMP Update, page 157.

<sup>23</sup> DR-131, response to OEIS data request 11.4, “Attachment 1 - 7G71 FIN WR Dunsmuir Fuel Reduction Project.” and “Attachment 2 - 7G75 FIN WR Dunsmuir Fuel Reduction Project.”

<sup>24</sup> DR-131, response to OEIS data request 11.4, “Attachment 3 - South Dunsmuir CE.”

<sup>25</sup> DR-131, response to OEIS data request 11.4, “Attachment 4 – South Dunsmuir Fuel Break Aerial.”

<sup>26</sup> PacifiCorp 2021 WMP Update, page 157.

<sup>27</sup> Pacific Power is PacifiCorp’s operating name in its service territory.

<sup>28</sup> DR-131, response to OEIS data request 11.7a, “Attachment 1 Project 32640 Circuit 5G79 Notice to Proceed.”

<sup>29</sup> DR-131, response to OEIS data request 11.7b, “Attachment 2 CA – 2021 Encroachment Permit.”

<sup>30</sup> DR-131, response to OEIS data request 11.7b, “Attachment 3 Arborworks\_Rider\_2021\_pacpwr.”

also reviewed meeting notes between Klamath National Forest and SWCA<sup>31</sup> to discuss operations and maintenance plan development and environmental analysis of PacifiCorp maintenance projects including vegetation management planned activities. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to collaboration of the appropriate authorizing officer or agency representative on obtaining permits, scheduling work, and addressing issues as they arise.

PacifiCorp's 2021 WMP Update states that "PacifiCorp conducts environmental reviews (biological and cultural) of vegetation management activities where warranted. Supporting fieldwork and environmental surveys are also conducted where applicable to protect sensitive resources."<sup>32</sup> Energy Safety reviewed email correspondence<sup>33</sup> between PacifiCorp and Shasta-Trinity National Forest regarding hazard tree removals on Circuit 5G79. The email documentation included an environmental review (biological and cultural) of vegetation management activities. The cultural environmental review included four (4) historic roads within the project areas and noted no road improvements were needed for completing tree work at the time. If a road improvement project is planned, a monitor will be required to facilitate the process and protect cultural sites. The biological environmental review included that Aleppo avens are known to occur in proximity to a few sites within the project area. Crews will be made aware of the plant and be on the lookout while performing work across the project area. If the plant is found within a work area and could potentially be impacted, work will cease until measures are made to protect the plant. Energy Safety also reviewed a Vegetation Management Monitoring report from SWCA,<sup>34</sup> which includes fieldwork (cultural monitoring) performed during vegetation management work to ensure no impacts occurred to sensitive cultural resources. Per the report, PacifiCorp, doing business as Pacific Power, retained SWCA to complete archaeological monitoring during vegetation removal for Pacific Power's Line on U.S. Forest Service lands near Cedarville, California. SWCA staff observed cultural materials associated with archaeological sites and near hazard trees. The monitor directed the Tree LLC, crew to fell trees and drop trimmings into areas that would not impact the cultural resources. No archaeological materials were observed during archaeological monitoring of the remaining three locations between November 16 and 17, 2021. Upon further discussion with PacifiCorp, Energy Safety noted that a total of 46 reviews were performed for cultural and/or biological for pole replacements and wildfire hardening projects in 2021.<sup>35</sup> Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to the conduction of environmental reviews (biological and cultural) of vegetation management activities.

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<sup>31</sup> DR-131, response to OEIS data request 11.7c, "Attachment 4 KNF Meeting Notes\_01272021."

<sup>32</sup> PacifiCorp 2021 WMP Update, page 157.

<sup>33</sup> DR-131, response to OEIS data request 11.8a, "Attachment 1 - Hazard Tree Removal on 5G79."

<sup>34</sup> DR-131, response to OEIS data request 11.8b, "Attachment 2 - Vegetation Management Monitoring\_Circuit5L9712kV."

<sup>35</sup> DR-131, response to OEIS data request 11.8c.

PacifiCorp’s 2021 WMP Update continues by stating that “PacifiCorp will continue [to] develop Operations and Maintenance Plans (O&M Plan) in accordance with applicable regulation and guidance. O&M Plan(s) will establish agreed upon agency review times of proposed maintenance activities based on activity type and presence or absence of sensitive resources that may be impacted. The O&M Plan will outline measures to be implemented by PacifiCorp for the protection of sensitive resources based on maintenance activity type, including vegetation management activities. The O&M Plan will also include agreed upon roles and responsibilities of PacifiCorp and the applicable land managing agency to support PacifiCorp’s rapid response to correct conditions identified in a timely manner. The O&M Plan with the KNF will be completed in 2021. After completing the O&M Plan with the KNF, PacifiCorp will engage with other land managing agencies within its service territory in 2021 to initiate O&M Plan development with them. In support of this effort, PacifiCorp is also hiring an additional staff resource to oversee development and long-term implementation of the O&M Plans and associated environmental screening process.”<sup>36</sup>

Energy Safety reviewed PacifiCorp’s Operations and Maintenance Plan for Electric Facilities on United States Forest Service Lands Klamath National Forest (“KNF”)<sup>37</sup> to determine that the agency has procedures related to review times of proposed maintenance activities, measures implemented by PacifiCorp for the protection of sensitive resources, and the roles and responsibilities of PacifiCorp and the applicable land managing agency to support the rapid corrections of conditions. PacifiCorp’s O&M Plan includes the following classification of activities:

- **Class I:** de minimis activities that are conducted on a regular basis and have been carried out historically to identify and repair deficiencies.
  - Class I activities are performed by implementing applicable Best Management Practices (“BMPs”) and have little to no impact on environmental resources. No further action or approval is needed from KNF.
  - KNF may monitor Class I activities at their discretion.<sup>38</sup>
- **Class IIa:** includes routine activities in locations with no known resources; all environmental impacts can be managed through application of BMPs.
- **Class IIb:** represents routine activities within areas with known resources for which resource-specific Resource Protection Measures (“RPMs”) are needed to avoid impacts.<sup>39</sup>
- **Non-emergency:** activities that do not fit the scope and scale of Class I and Class II are considered Class III activities.

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<sup>36</sup> PacifiCorp 2021 WMP Update, page 157-159.

<sup>37</sup> DR-131, response to OEIS data request 11.9a, “OMP\_Pacific Power\_FINAL\_DRAFT\_20211209.”

<sup>38</sup> DR-131, response to OEIS data request 11.9a, “OMP\_Pacific Power\_FINAL\_DRAFT\_20211209.”

<sup>39</sup> DR-131, response to OEIS data request 11.9a, “OMP\_Pacific Power\_FINAL\_DRAFT\_20211209.”

- **Class III:** involve non-routine O&M activities, as well as new, changed, or additional uses or areas under 36 Code of Federal Regulations 251.61. These activities may require more extensive environmental analysis and review before initiating work.<sup>40</sup>

Energy Safety also reviewed Appendix C – Best Management Practices and Appendix D – Site-Specific Resource Protection Measures in the Utility Action Area in the O&M Plan to determine if there were protective measures implemented by PacifiCorp to protect resources. Per Appendix C of the O&M Plan, the National Core BMPs require the development of site-specific BMP prescriptions based on local site conditions and requirements to achieve compliance with established state, tribal, or national water quality goals. BMPs developed specifically to address known sensitive resources are provided in Appendix D of the O&M Plan as resource protection measures. According to Appendix D, Resource Protection Measures are specific measures used to avoid and minimize impacts on special-status species, sensitive habitats, and heritage resources. Because Class I activities are considered de minimis and will have little to no potential to disturb or unduly affect resources, the RPMs will apply only to Class II and Class III activities.<sup>41</sup> Additionally, Energy Safety reviewed Chapters 3 and 5 of the O&M Plan<sup>42</sup> for roles and responsibilities of PacifiCorp and the land management agency. Chapter 3 of the O&M Plan relates to the activity review, notification, and approval processes. Chapter 5 of the O&M Plan outlines roles and responsibilities for each entity related to communication and coordination of the O&M Plan.

PacifiCorp also provided email correspondence<sup>43</sup> to determine that PacifiCorp engaged with land managing agencies within its service territory to initiate O&M Plan development. Per the e-mail documentation, meetings were held with the U.S. Forest Service (USFS) Region 5 Lands Special Use program manager and the Modoc, Shasta-Trinity, and Six Rivers National Forests in December 2021. According to PacifiCorp, these were informal meetings to initiate discussions with the region and the forests to gauge interest and availability in developing O&M Plans with the purpose of kicking off a more formal effort. Energy Safety also reviewed a screenshot from PacifiCorp’s internal system showing that PacifiCorp hired an additional staff resource to oversee the development and long-term implementation of the O&M Plans and associated environmental screening process.<sup>44</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the development and implementation of the O&M Plans.

In its 2021 WMP Update, PacifiCorp states “to manage environmental compliance PacifiCorp prioritizes environmental reviews and agency coordination based upon project schedule considering agency review and permitting timelines. Projects are reviewed and packaged

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<sup>40</sup> DR-131, response to OEIS data request 11.9a, “OMP\_Pacific Power\_FINAL\_DRAFT\_20211209.”

<sup>41</sup> DR-131, response to OEIS data request 11.9b, “OMP\_Pacific Power\_FINAL\_DRAFT\_20211209.”

<sup>42</sup> DR-131, response to OEIS data request 11.9c, “OMP\_Pacific Power\_FINAL\_DRAFT\_20211209.”

<sup>43</sup> DR-131, response to OEIS data request 11.10, “Pacific Power O&M Plan\_Region 5 Email Correspondence.”

<sup>44</sup> DR-131, response to OEIS data request 11.11, “Emily Newell\_Hire\_Date.”

together where feasible to streamline review and coordination with authorizing agencies.”<sup>45</sup> Energy Safety reviewed a Pole Replacement Project Environmental Review Summary Form<sup>46</sup> provided by PacifiCorp that includes the biological and cultural resource analysis performed for replacement of deteriorating poles. According to the Environmental Review Form, no cultural resources have been previously identified within the project area, but the proposed pole replacement work has the potential to affect nesting birds, and three special-status plants species – Greene’s tuctoria (*Tuctoria greenei*), playa phacelia (*Phacelia inundata*), and Slender Orcutt grass (*Orcuttia tenuis*). In addition, aerial imagery shows potentially hydrophytic markers indicative to episodic and/or seasonal ponding in and adjacent to all four pole locations. The presence of/absence of nesting birds, special-status plants, and aquatic features within the work area should be field verified. If present, measures would be implemented to avoid and/or minimize potential impacts.<sup>47</sup> In 2021, seven pole replacement projects notification packages were submitted for review by applicable agencies. In addition, several notification packages were submitted in support of wildfire hardening projects and in support of vegetation management.<sup>48</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the prioritization of environmental reviews and agency coordination based upon project schedules.

PacifiCorp’s 2021 WMP Update explains that “PacifiCorp plans to improve and expand the environmental screening process to include a broader scope of project activities in 2021.”<sup>49</sup> According to PacifiCorp, in 2021, it expanded their environmental screening process to include distribution poles. In previous years, environmental screening had focused on transmission structure replacement. This is a significant expansion due to how many distribution poles exist throughout the service territory. Environmental reviews also include any access improvements required to perform the pole replacement activity.<sup>50</sup> Additionally, PacifiCorp provided support related to the environmental review of distribution pole replacement in 2021. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the improvement and expansion to the environmental screening process.

### **6.1.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.1**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.1: Additional Efforts to Manage Community and Environmental Impacts.

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<sup>45</sup> PacifiCorp 2021 WMP Update, page 158.

<sup>46</sup> DR-131, response to OEIS data request 11.12a, “0023\_5L70\_CA\_EnvReview\_FINAL\_DRAFT.”

<sup>47</sup> DR-131, response to OEIS data request 11.12a, “0023\_5L70\_CA\_EnvReview\_FINAL\_DRAFT.”

<sup>48</sup> DR-131, response to OEIS data request 11.12c.

<sup>49</sup> PacifiCorp 2021 WMP Update, page 158.

<sup>50</sup> DR-131, response to OEIS data request 11.13b.

## 6.2 Initiative 7.3.5.2: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment

The purpose of this initiative is to detail the utility’s “careful visual inspections of vegetation around the right-of way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.”<sup>51</sup>

### 6.2.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp stated, “PacifiCorp conducts inspections of vegetation around distribution lines and equipment to identify imminent threats or hazards and vegetation conditions that do not comply [with] PacifiCorp’s program standards/specifications. These pre-work inspections are typically conducted within weeks to 1-2 months by contractors prior to the scheduled program work. Inspectors/pre-listers utilize tablets to record vegetation conditions to be corrected.”<sup>52</sup> Energy Safety reviewed an Excel spreadsheet titled, “Contractor Miles Tracker,” which includes total miles of distribution circuits inspected in calendar year 2021. The tracking spreadsheet includes the forester, contractor, district, distribution grid or circuit, and total miles per inspection. Energy Safety also reviewed an Excel spreadsheet,<sup>53</sup> which included the duration between the inspection date and the correction date. According to PacifiCorp, there are several reasons why work may not be completed within two months of the inventory; including weather, customer refusals, specialized equipment needs, land managing agency requirements, and environmental restrictions. These factors are always present and may result in deviations from the targeted two-month timeframe. Additionally, PacifiCorp stated that it does not have documentation regarding imminent vegetation threats or vegetation hazards. If such conditions are identified, they are generally communicated by telephone calls to dispatch tree crews to address the condition identified. PacifiCorp does not have a separate tracking system for imminent threat conditions. Records of the corrective work related to these conditions are embedded within the general vegetation management inventory and work complete<sup>54 55</sup> to discuss the use of tablets relative to the vegetation management program. Per review of the meeting agenda, Energy Safety was able to verify that discussion topics within the agenda included, but were not limited to, use of the tablets, closing locations at

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<sup>51</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 23, 2023).

<sup>52</sup> PacifiCorp 2021 WMP Update, page 159.

<sup>53</sup> DR-131, response to OEIS data request 11.14aii, “0023\_5L70\_CA\_EnvReview\_FINAL\_DRAFT.”

<sup>54</sup> DR-131, response to OEIS data request 11.14b.

<sup>55</sup> DR-131, response to OEIS data request 11.14c, “Attachment 3 – PacifiCorp-Tree’s LLC Meeting\_01272021.”

site, and work releases/SDS/labels/Caltrans permit in tablets. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to inspections of vegetation around distribution lines and equipment.

PacifiCorp's 2021 WMP Update continues by stating that "PacifiCorp Senior Utility Foresters prioritize scheduling inspections and subsequent corrective work considering HFTD, efficient workload distribution, weather conditions, and resource availability."<sup>56</sup> Energy Safety reviewed support provided by PacifiCorp which contained an example of the circuit prioritization in order of planned work/sequence.<sup>57</sup> The distribution schedule support includes the work type, the HFTD tier, line miles, inspection complete percentage, work complete percentage, and the Forest Technician assigned. PacifiCorp also provided a copy of a meeting agenda referenced California Organization Call between the Senior Utility Foresters and the inspectors.<sup>58</sup> The meeting agenda includes the assigning of circuits to inspectors for inspection and the discussion of sequencing of circuit inspections. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to the Senior Utility Foresters prioritizing scheduled inspections and subsequent corrective work.

PacifiCorp's 2021 WMP Update explains that "in 2020, PacifiCorp completed rollout of the electronic planning and tracking system, Section 7.3.1.6, with few exceptions that will be addressed in 2021."<sup>59</sup> Energy Safety reviewed the FPI form and Adder Request report<sup>60</sup> provided by PacifiCorp. The FPI form included the description of work, action taken place, contact type, inspection company, and the date completed. The Adder Request report includes the details on the additional work that was added to the inventory, the company information, and the email contact information. Therefore, Energy Safety's audit found PacifiCorp did provide information consistent with the completion of work related to the completed rollout of the electronic planning and tracking system.

Per PacifiCorp's 2021 WMP Update, "in 2021, PacifiCorp expects to inspect over 1,476 miles of distribution lines associated with routine vegetation management."<sup>61</sup> Energy Safety reviewed the Contractor Miles Tracker Distribution spreadsheet<sup>62</sup> and determined PacifiCorp inspected 1,471 miles during 2021. The five miles not completed was on Circuit 5R152. The five miles on Circuit 5R152 were then rolled over and completed shortly after 2021. The audit found PacifiCorp did not provide information consistent with the completion of work related to the inspection of 1,476 miles of distribution line in 2021.

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<sup>56</sup> PacifiCorp 2021 WMP Update, page 159.

<sup>57</sup> DR-131, response to OEIS data request 11.15, "Attachment 1 - 2021 Yreka-Shasta Schedule."

<sup>58</sup> DR-131, response to OEIS data request 11.15, "Attachment 2 - California Organization Call\_05132021."

<sup>59</sup> PacifiCorp 2021 WMP Update, page 159.

<sup>60</sup> DR-131, response to OEIS data request 11.16b, "Attachment 1 PP\_FPI Form\_DRAFT08132021" and "Attachment 2 PP Adder Request Auto Email Report."

<sup>61</sup> PacifiCorp 2021 WMP Update, page 159.

<sup>62</sup> DR-198, response to OEIS data request 17.3.

## 6.2.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.2

Based on the analysis above, Energy Safety finds PacifiCorp did not complete all the required work identified in the 2021 WMP update Initiative 7.3.5.2: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment.

## 6.3 Initiative 7.3.5.3: Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment

The purpose of this initiative is to detail the utility’s “careful visual inspections of vegetation around the right-of way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.”<sup>63</sup>

### 6.3.1 2021 WMP Update Statements, Supporting Information and Analysis

In its 2021 WMP Update, “PacifiCorp’s detailed inspections of vegetation around transmission electric lines and equipment, like distribution inspections, focus on maintaining clearances, but with transmission, the clearance distances are much greater. Because of the nature of transmission lines, wider rights-of-way generally allow PacifiCorp to maintain clearances well in excess of the required minimum clearances set forth in the ‘Minimum Vegetation Clearance Distance’ (MVCD).”<sup>64</sup> Energy Safety reviewed Contractor Work Release support for Tree’s Incorporated LLC<sup>65</sup> related to inspection of transmission lines. The work release includes a work description that states, “the contractor will perform clearing of sections of transmission right of way in accordance with PacifiCorp Transmission and Distribution Standard Operating Procedures.” The work release also references that the contractor shall perform the inspections in accordance with PacifiCorp’s Vegetation Management SOP, Section 6, which includes post-work clearance distances. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the detailed inspections of vegetation around transmission electric lines and equipment.

PacifiCorp’s 2021 WMP Update states, “to determine whether work is needed, an “Action Threshold” is applied, meaning that work is done if vegetation has grown within the action

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<sup>63</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 10, 2023).

<sup>64</sup> PacifiCorp 2021 WMP Update, page 159-160.

<sup>65</sup> DR-131, response to OEIS data request 11.17, “YRE668014 Trees Accepted Work Release 2021” and “KFC 66059 MHS Trees Accepted Work Release 2021.”

threshold distance. Additionally, PacifiCorp employs IVM practices to prevent vegetation growth from violating clearances. Inspections of transmission lines are both ground and aerial based.”<sup>66</sup> According to PacifiCorp, PacifiCorp’s foresters participate in aerial flights with PacifiCorp operations personnel via helicopter. Work releases are not created when PacifiCorp’s foresters conduct these aerial inspections. Once aerial inspections have been completed, they are followed up with ground-based inspections.<sup>67</sup> Energy Safety reviewed three work release forms<sup>68 69 70</sup> provided by PacifiCorp. The work release forms describe the work activity of inspecting transmission lines from beginning to end for threshold/critical work and high-risk trees. The work release form also references that the transmission line inspections be within the threshold described in Table 6.1 of PacifiCorp Transmission and Distribution Standard Operation Procedures. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the implementation of action threshold and inspections of transmission lines are both ground and aerial based.

Per PacifiCorp’s 2021 WMP Update, “PacifiCorp plans to inspect 129 miles in 2021.”<sup>71</sup> Energy Safety reviewed the Contractor Miles Tracker Transmission spreadsheet<sup>72</sup> provided by PacifiCorp. Per the Miles Tracker spreadsheet, Energy Safety determined that PacifiCorp inspected a total of roughly 181 miles of transmission line miles during 2021. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the Transmission line inspections in 2021.

### **6.3.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.3**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.3: Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment.

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<sup>66</sup> PacifiCorp 2021 WMP Update, page 160.

<sup>67</sup> DR-131, response to OEIS data request 11.18b.

<sup>68</sup> DR-131, response to OEIS data request 11.18a, “KFC668059 MGI Trees Completed Work Release 2021.”

<sup>69</sup> DR-131, response to OEIS data request 11.18c, “KFC668059 MHS Trees Accepted Work Release 2021.”

<sup>70</sup> DR-131, response to OEIS data request 11.18d, “YRE668014 MGI Trees Completed Work Release 2021.”

<sup>71</sup> PacifiCorp 2021 WMP Update, page 160.

<sup>72</sup> DR-131, response to OEIS data request 11.19, “Attachment 1 - WE01012022\_Contractor Miles Tracker\_Transmission.”

## 6.4 Initiative 7.3.5.4: 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.<sup>73</sup>

### 6.4.1 2021 WMP Update Statements, Supporting Information and Analysis

PacifiCorp states in its 2021 WMP Update that, “during red flag warnings, PacifiCorp may move resources to work in other areas that are not impacted by the red flag warning or are outside of the HFTD, where feasible. Vegetation management personnel also follow local guidance and requirements as they pertain to fire restrictions, such as work hours, utilizing a fire watch following work, and using equipment that minimize potential to cause sparks.”<sup>74</sup> PacifiCorp stated that it does not have documentation showing that crew resources were moved due to fire restrictions in 2021.<sup>75</sup> PacifiCorp provided a copy of the “Wildland Fire Preparedness & Prevention Plan,” which is used by the predominant vegetation management contractor that covers PacifiCorp’s California territory. PacifiCorp also provided an example of a fire plan that it stated was adhered to by the vegetation management contractors. Finally, PacifiCorp provided an example invoice noting expenses for a “water wagon” available for fire suppression in Klamath Falls. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to moving resources due to red flag events.

PacifiCorp’s 2021 WMP Update states, “prior to initiating a PSPS event and to further inform PacifiCorp T&D Operations of current vegetation conditions, PacifiCorp vegetation management may perform patrols to identify and address potential ignition risks due to vegetation.”<sup>76</sup> Energy Safety reviewed a copy of an e-mail<sup>77</sup> indicating the list of vegetation management crews supporting the Dunsmuir public safety power shutoff (PSPS) event. PacifiCorp also provided a screenshot of an export from PacifiCorp’s mobile data management system<sup>78</sup> showing the general location of the crews that were dispatched for

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<sup>73</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 10, 2023).

<sup>74</sup> PacifiCorp 2021 WMP Update, page 160.

<sup>75</sup> DR-133, response to OEIS data request 10.1.

<sup>76</sup> PacifiCorp 2021 WMP Update, page 160.

<sup>77</sup> DR-133, response to OEIS data request question 10.2, “Attachment 1 Vegetation Contact List – Dunsmuir PSPS 81721.”

<sup>78</sup> DR-133, response to OEIS data request question 10.2, “Attachment 2 Screenshot\_DunsmuirPSPS\_Inspection.”

support the PSPS event. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to PSPS events.

PacifiCorp’s 2021 WMP Update states that “Emergency response vegetation management associated with potential PSPS events, is focused in PDZs where the weather event is occurring.”<sup>79</sup> Energy Safety reviewed the U 901-E Public Safety Power Shut-Off Post-Event Report for August 17, 2021, dated August 31, 2021.<sup>80</sup> The report documents the public safety power shutoff (PSPS) zones which are areas of proactive de-energization. PacifiCorp states that various reports received from various personnel who performed patrols of the area were used in part in the decision process. PacifiCorp referred Energy Safety to the information provided as support for the previous statement.<sup>81</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to PSPS events.

#### **6.4.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.4**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.4: Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions.

### **6.5 Initiative 7.3.5.5: Fuel Management and Reduction of “Slash” from VM Activities**

The purpose of this initiative is to describe the utility’s efforts to reduce fuel near “potential sources of ignition, including both reduction or adjustment of live fuel... and of dead fuel, including ‘slash’ from vegetation management activities....”<sup>82</sup>

#### **6.5.1 2021 WMP Update Statements, Supporting Information and Analysis**

PacifiCorp’s 2021 WMP Update states, “PacifiCorp conducts fuel management through removal of slash from the tree canopy, chipping debris where accessible, and removes (recycles where practicable) slash in developed areas unless the property owner indicates otherwise. In rural, off-road areas PacifiCorp utilizes a lop and scatter and chipping practices to reduce the volume of available fuel within the right of way and adheres with land

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<sup>79</sup> PacifiCorp 2021 WMP Update, page 160.

<sup>80</sup> DR-133, response to OEIS data request question 10.3, “Attachment 1 Vegetation Contact List – Dunsmuir PPS 81721.”

<sup>81</sup> DR-133, response to OEIS data request question 10.3.

<sup>82</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 10, 2023).

managing agency requirements.”<sup>83</sup> Energy Safety reviewed an excerpt from an invoice<sup>84</sup> indicating that vegetation management crews conducted slash management activities. PacifiCorp also provided a screenshot from PacifiCorp’s mobile data management software of a 2021 project in California.<sup>85</sup> The mobile screen shot documents locations where slash is located and where it can be properly discarded. PacifiCorp also provided documentation of customer reuse of chipped material and examples of lop and scatter description implemented by vegetation management contractors through customer coordination.<sup>86</sup> The report documents how the tree was removed while supporting the area around the tree. Efforts included the removal of the trunk to the destruction and removal of the limbs to limit slash. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to fuel management.

PacifiCorp’s 2021 WMP Update continues by stating that “PacifiCorp utilizes herbicides and tree growth regulators where approved by the property owner or land managing agency in targeted areas.”<sup>87</sup> PacifiCorp stated that “Targeted areas” is intended to refer to the locations where vegetation is removed, and herbicide application would be beneficial to apply in order to inhibit regrowth. Energy Safety reviewed the excel spreadsheet<sup>88</sup> used to track the application of pesticides for 2021 by PacifiCorp contractors. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to fuel management.

Per PacifiCorp’s 2021 WMP Update, “PacifiCorp also annually conducts pole clearing, removal of vegetation around subject poles which further reduces fuel volume.”<sup>89</sup> Energy Safety reviewed an Excel spreadsheet<sup>90</sup> which is used to track pole clearing activities in addition to herbicide application at poles. In addition, Energy Safety reviewed an Excel spreadsheet,<sup>91</sup> which is an example of a report, for circuit 7G75, documenting vegetation removal around subject poles. Finally, Energy Safety reviewed PacifiCorp’s T&D Vegetation Management Program Standard Operating Procedures (SOP).<sup>92</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to fuel management.

PacifiCorp’s 2021 WMP Update explains that “In 2021, PacifiCorp will continue to seek opportunities to partner with communities and/or agencies to support fuel reduction

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<sup>83</sup> PacifiCorp 2021 WMP Update, page 161.

<sup>84</sup> DR-133, response to OEIS data request question 10.5, “Attachment 1 INV 086195\_CA YRE\_DIST\_TR\_WE1002.

<sup>85</sup> DR-133, response to OEIS data request question 10.5, “Attachement 2 Chips\_CoutomerUse.”

<sup>86</sup> DR-133, response to OEIS data request question 10.5, “Attachment 3 5G77\_PpOwnerPermission.”

<sup>87</sup> PacifiCorp 2021 WMP Update, page 161.

<sup>88</sup> DR-211, response of OEIS data request question 1, “PpBasalFoliarPoleDetali\_2021-CA.xlsx.”

<sup>89</sup> PacifiCorp 2021 WMP Update, page 161.

<sup>90</sup> DR-211 response to OEIS data request question 2, “PpBasalFoliarOpleDetali\_2021CS.xlsx.”

<sup>91</sup> DR-211 response to OEIS data request question 2, “PPBasalFoliarzPoleReport\_2021\_7g75\_CA.pdf.”

<sup>92</sup> DR-211 response to OEIS data request question 2, PacifiCorp’s T&D Vegetation Management Program Standard Operating Procedures (SOP) 20190819.

projects.”<sup>93</sup> Energy Safety reviewed, an e-mail containing “Fuels Reduction Letter of Support”<sup>94</sup> with the associated letter of support<sup>95</sup> submitted with the CalFire application. The CalFire application was submitted by Siskiyou County, Shasta Valley Resource Conservation District, Fruit Growers Supply Co., Michigan-California Timber Co., Klamath National Forest, and the Oregon State University. Pacific Power sought to support efforts for a Forest Health Grant to promote forest resiliency and reduce frequency catastrophic wildfire events. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with partnering with communities and/or agencies.

PacifiCorp’s 2021 WMP Update continues by stating that “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 to prevent any vegetation regrowth (unless prohibited by law or the property owner). PacifiCorp intends to implement pole clearing on wildland vegetation in the HFTD around poles which have fuses, air switches, clamps or other devices that could create sparks.”<sup>96</sup> Energy Safety reviewed an Excel spreadsheet,<sup>97</sup> which is a copy of the report that is used to track pole clearing activities in addition to herbicide application at poles. In addition, Energy Safety reviewed an Excel spreadsheet,<sup>98</sup> which is an example of a report, for circuit 7G75, documenting vegetation removal around subject poles. As part of the Company’s wildfire mitigation plan (WMP), pole clearing is conducted within Local Responsibility Areas in both Tier 2 and Tier 3 High Fire-Threat District (HFTD), where applicable. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to fuel management. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to pole clearing.

PacifiCorp’s 2021 WMP Update explains that “In 2021, PacifiCorp plans to clear vegetation at 3,047 poles under the expanded pole clearing project.”<sup>99</sup> According to PacifiCorp, 2,872 poles were completed in calendar year 2021 per the data provided by the contractor.<sup>100</sup> Energy Safety reviewed a total of 21 spreadsheets<sup>101</sup> provided by PacifiCorp for circuits where poles were cleared. Therefore, Energy Safety’s audit found PacifiCorp did not provide information consistent with the completion of work (target of 3,047 poles) vs (2,872 poles completed in 2021) related to the expanded pole clearing project.

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<sup>93</sup> PacifiCorp 2021 WMP Update, page 161.

<sup>94</sup> Attachment 2 Letter of Support\_Pacific Power\_04152021.

<sup>95</sup> Attachment 1 RE\_[INTERNET] Fuels Reduction Letter of Support.

<sup>96</sup> PacifiCorp 2021 WMP Update, page 162.

<sup>97</sup> DR-211 response to OEIS data request question 4, “PpBasalFoliarOpleDetali\_2021CS.xlsx.”

<sup>98</sup> DR-211 response to OEIS data request question 4, “PPBasalFoliarzPoleReport\_2021\_7g75\_CA.pdf.”

<sup>99</sup> PacifiCorp 2021 WMP Update, page 161.

<sup>100</sup> DR-116, response to OEIS data request question 9.4.

<sup>101</sup> DR-116, response to OEIS data request question 9.4, “Attachment OEIS 9.4.”

## 6.5.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.5

Based on the analysis above, Energy Safety finds PacifiCorp did not complete all the required work in the 2021 WMP update Initiative 7.3.5.5: Fuel Management and Reduction of “Slash” from VM Activities.

## 6.6 Initiative 7.3.5.6: Improvement of Inspections

The purpose of this initiative is to describe the utility’s methods for “identifying and addressing deficiencies in inspections protocols and implementation by improving training and the evaluation of inspectors.”<sup>102</sup>

### 6.6.1 2021 WMP Update Statements, Supporting Information and Analysis

In its 2021 WMP Update, PacifiCorp states, “PacifiCorp has initiated incremental inspections prior to the height of the fire season, see Section 7.3.1.11. In addition, PacifiCorp conducts post audit inspections of completed work and addresses any conditions that do not conform with the vegetation program standards/specifications. These audits not only serve as quality control but provide opportunities for PacifiCorp Senior Management and the Utility foresters to discuss required specifications and engage with the vegetation management contractors performing the work to strive to improve execution of inspections.”<sup>103</sup> Energy Safety reviewed an Audit Exceptions List – FIN FMD<sup>104</sup> that presents the results of audits conducted on work along circuit 5G7 in 2021. The list includes audit dates, or dates when exceptions were identified by the auditor, a description of audit findings (e.g., prune to spec (Pts), additional pruning needed, etc.), and example language of work needed that was not compliant with PacifiCorp specifications. The support, however, does not address the actions taken by PacifiCorp to address the audit exceptions. PacifiCorp also provided a listing of contracted inspection personnel who attended a training/discussion led by PacifiCorp foresters regarding vegetation management activities, including 2021 scheduling, work specifications in California, workflow, and mobile data management software use.<sup>105</sup> Finally, PacifiCorp provided an example meeting agenda with contracted inspection personnel. This was a

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<sup>102</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 11, 2023).

<sup>103</sup> PacifiCorp 2021 WMP Update, page 163.

<sup>104</sup> DR-133, response to question 10.7, “Attachment 1\_5G7 – Audit Exceptions List – FIN\_FMD.”

<sup>105</sup> DR-133, response to question 10.7, “Attachment 2 Phillips\_TreeLineUSA\_ACRT\_1-12-21.”

listing of attendees.<sup>106</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to post audit inspections.

PacifiCorp’s 2021 WMP Update also states, “PacifiCorp continues to seek opportunities for improving inspection quality and the use of technology to augment inspections and determine modifications that may be needed in implementing inspections.”<sup>107</sup> Per Energy Safety’s review, PacifiCorp provided an example of changes to the original inspection form used by contracted inspection personnel.<sup>108</sup> The support shows that changes were identified in 2021 for implementation in 2022. These changes allowed for better tracking of inspection activities by work code (activity type such as cycle maintenance), which may result in better review and analysis of inspection activities. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to improving inspection quality.

PacifiCorp’s 2021 WMP Update continues by stating that, “PacifiCorp has incorporated the use of a work planning and tracking system. Inspectors utilize tablets to document vegetation maintenance activity requirements by location (e.g., parcel or parcels). This information is then available to the contractors conducting the maintenance work, which allows for improved planning and documentation.”<sup>109</sup> Energy Safety reviewed a screenshot of a vegetation management project within the data management software utilized by PacifiCorp.<sup>110</sup> PacifiCorp further provided screenshots of the data collection user interface when utilizing PacifiCorp’s data management software when conducting inspections.<sup>111</sup> Finally, PacifiCorp provided a meeting agenda where use of tablets was discussed.<sup>112</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to inspection work planning and tracking.

PacifiCorp’s 2021 WMP Update states, “Once the work is completed it is recorded in the program in the field via tablets utilized by tree crews. Post-audits are then conducted with findings identified within the system.”<sup>113</sup> PacifiCorp’s mobile data management software is called, “MapIt Fast,” which is a product developed by AgTerra Technologies, Inc. Energy Safety reviewed an Audit Exceptions List<sup>114</sup> that presents the results of audits conducted on work along circuit 5G7 in 2021. The list includes audit dates, or dates when exceptions were identified by the auditor, a description of audit findings (e.g., prune to spec (Pts), additional pruning needed, etc.), and example language of work needed that was not compliant with

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<sup>106</sup> DR-133, response to question 10.7, “Attachment 3 ACRT\_PacPower\_Meeting\_12-7-21.”

<sup>107</sup> PacifiCorp 2021 WMP Update, page 163.

<sup>108</sup> DR-133, response to question 10.8, “PP\_Inventory\_Proposed\_Format\_Changes.xlsx.”

<sup>109</sup> PacifiCorp 2021 WMP Update, page 163-164.

<sup>110</sup> DR-133, response to question Attachment 1 Screenshot Yreka Project 2021.

<sup>111</sup> Attachment 2 Screenshot Data Collection.

<sup>112</sup> Attachment 3 PacifiCorp\_TreesLLC\_Meeting\_1-27-21.

<sup>113</sup> PacifiCorp 2021 WMP Update, page 164.

<sup>114</sup> DR-133, response to question 10.7, “Attachment 1\_5G7 – Audit Exceptions List – FIN\_FMD.”

PacifiCorp specifications. In 2021, PacifiCorp conducted audits of the following number of lines by work type:

- Routine Maintenance
  - Distribution: 28
  - Transmission: 2
- Readiness Patrols/Annual inspection and correction work
  - Distribution: 35
  - Transmission: 17

Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to post-audit work.

### **6.6.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.6**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.6: Improvement of Inspections.

## **6.7 Initiative 7.3.5.7: LiDAR Inspections of Vegetation Around Distribution Electric Lies and Equipment**

The purpose of this initiative is to describe the utility’s methods for inspecting distribution right-of-ways using LiDAR.<sup>115</sup>

### **6.7.1 2021 WMP Update Statements, Supporting Information and Analysis**

In its 2021 WMP Update, “PacifiCorp has been evaluating LiDAR use for vegetation around both distribution and transmission lines through pilot programs utilizing data collected other purposes and small, low-cost demonstrations.”<sup>116</sup> Energy Safety reviewed the Excel spreadsheet titled, “Field Verification Transmission,”<sup>117</sup> that provides the results of a pilot project that was field verified in 2021. At the conclusion of the pilot study, PacifiCorp did not utilize light detecting and ranging (LiDAR) or satellite imagery data for vegetation management program planning based on the results and use cases analyzed. The pilot

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<sup>115</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 23, 2023).

<sup>116</sup> PacifiCorp 2021 WMP Update, page 164.

<sup>117</sup> DR-133, PacifiCorp’s response to OEIS data request question 10.11, “Field Verification\_Transmission”.

studies did not yield cost effective accuracy at the distribution circuit level or turnaround time (data processing). Even though PacifiCorp did not move forward with the use of LiDAR, Energy Safety's audit found PacifiCorp provided information consistent with the completion of the work identified in this statement regarding evaluating LiDAR use.

### **6.7.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.7**

Based on the analysis above, Energy Safety finds even though PacifiCorp did not move forward with the use of LiDAR, PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.7: LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment.

## **6.8 Initiative 7.3.5.8: LiDAR Inspections of Vegetation Around Transmission Electric Lines and Equipment**

The purpose of this initiative is to describe the utility's methods for inspecting transmission right-of-ways using LiDAR.<sup>118</sup>

### **6.8.1 2021 WMP Update Statements, Supporting Documentation, and Analysis**

PacifiCorp's 2021 WMP Update states "Use of LiDAR inspections are being evaluated See Section 7.3.5.7." PacifiCorp directs readers to Initiative 7.3.5.7 as applicable to Initiative 7.3.5.8.<sup>119</sup> Energy Safety conducted an analysis of the reference Initiative and determined that PacifiCorp completed all work associated with these initiatives; therefore, Energy Safety's conclusion that all work was complete also applies to Initiative 7.3.5.8.

### **6.8.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.8.**

See Energy Safety's determination for initiative 7.3.5.7.

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<sup>118</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 12, 2023).

<sup>119</sup> PacifiCorp 2021 WMP Update, page 165.

## 6.9 Initiative 7.3.5.9: Other Discretionary Inspection of Vegetation Around Distribution 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 distribution right of ways and the adjacent vegetation that may be hazardous, which goes beyond the minimum standards in rules and regulations.<sup>120</sup>

### 6.9.1 2021 WMP Update Statements, Supporting Information and Analysis

In its 2021 WMP Update, PacifiCorp states, “PacifiCorp does not have any other discretionary inspection of vegetation around distribution electric lines and equipment.”<sup>121</sup> As PacifiCorp does not have other discretionary inspections, this initiative does not apply to PacifiCorp, so no analysis is needed.

### 6.9.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.9

In its 2021 WMP Update, PacifiCorp states, “PacifiCorp does not have any other discretionary inspection of vegetation around distribution electric lines and equipment.”<sup>122</sup> As PacifiCorp does not have other discretionary inspections, this initiative does not apply to PacifiCorp, so no analysis is needed.

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<sup>120</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 23, 2023).

<sup>121</sup> PacifiCorp 2021 WMP Update page 165.

<sup>122</sup> PacifiCorp 2021 WMP Update, page 165.

## 6.10 Initiative 7.3.5.10: 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 transmission right of way inspection program to identify vegetation hazards.<sup>123</sup>

### 6.10.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, "PacifiCorp does not have any other discretionary inspection of vegetation around distribution electric lines and equipment."<sup>124</sup> As PacifiCorp does not have other discretionary inspections, this initiative does not apply to PacifiCorp, so no analysis is needed.

### 6.10.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.10

In its 2021 WMP Update PacifiCorp states, "PacifiCorp does not have any other discretionary inspection of vegetation around distribution electric lines and equipment."<sup>125</sup> As PacifiCorp does not have other discretionary inspections of vegetation around distribution electric lines and equipment, this initiative does not apply to PacifiCorp, so no analysis is needed.

## 6.11 Initiative 7.3.5.11: 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.<sup>126</sup>

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<sup>123</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 54: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 23, 2023).

<sup>124</sup> PacifiCorp 2021 WMP Update, page 165.

<sup>125</sup> PacifiCorp 2021 WMP Update, page 165.

<sup>126</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 55: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 23, 2023).

### 6.11.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, “for the purpose of further mitigating wildfire risk in the HFTD, PacifiCorp vegetation management has implemented annual vegetation patrols incremental to scheduled program routine maintenance on lines within the HFTD. Correction work is subsequently conducted based on those inspection results. In conjunction with such annual patrols, vegetation management annually completes correction work based on the patrol results.”<sup>127</sup> Energy Safety reviewed Excel files that contained the following information:<sup>128</sup>

- Patrols conducted in 2020 including dates.
- An example of work identified on distribution lines during patrol inspections in 2020.
- An example of work completed on distribution lines associated with patrol inspections in 2020.
- An example of work identified on transmission lines during patrol inspections in 2020.
- An example of work completed on transmission associated with patrol inspections in 2020.
- The number of miles (1,520)<sup>129</sup> inspected associated with the patrols in 2021.
- Work identified, such as pruning and tree removal, on distribution lines during patrol inspections in 2021.
- Work completed, to include pruning and tree removal, on distribution lines associated with patrol inspections in 2021.
- Work identified on transmission lines during patrol inspections in 2021.
- Work completed on transmission lines associated with patrol inspections in 2021.
- The number of miles inspected associated with the patrols in 2022.
- Work identified on distribution lines during patrol inspections in 2022.
- Work completed on distribution lines associated with patrol inspections in 2022.
- Work identified on transmission lines during patrol inspections in 2022.
- Work completed on transmission lines associated with patrol inspections in 2022.

Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to annual vegetation patrols.

Per PacifiCorp’s 2021 WMP Update, “beginning in 2019, PacifiCorp implemented ‘readiness patrols’ of overhead lines in HFTD. This initiative facilitates removal and or pruning of

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<sup>127</sup> PacifiCorp 2021 WMP Update, page 165.

<sup>128</sup> DR-133, response to question 10.13.

<sup>129</sup> DR-133, response to question 10.13 Attachment 24\_2021 Contractor Miles Tracker – New Weekly psb\_v2 Cell P12.

vegetation that may pose an ignition risk, such as hazard trees. Prior to the height of the fire season, PacifiCorp conducts these readiness patrols of overhead distribution lines located within HFTD Tier II and Tier III, where program cycle work has not been completed or is not scheduled. Consistent with existing procedures, a Level 1 assessment (ANSI A300 Part 9) is conducted to identify any trees which may have become hazard trees over the course of the prior year and target these trees for removal. In addition, the inspector will identify for pruning or removal of fast-growing vegetation which is likely to violate minimum clearance distances prior to the end of the current growing season.”<sup>130</sup> Energy Safety reviewed Excel files that contained the following information:<sup>131</sup>

- The number of miles inspected associated with the patrols, in 2021.
- Work identified on distribution lines during patrol inspections in 2021.
- Work completed on distribution lines associated with patrol inspections in 2021.
- Work identified on transmission lines during patrol inspections in 2021.
- Work completed on transmission lines associated with patrol inspections in 2021.

PacifiCorp also provided “ACRT accepted WR,”<sup>132</sup> an example documentation directing the inspection contractor to identify high risk trees in accordance with PacifiCorp’s Standard Operating Procedures (SOP). PacifiCorp tracked the removal of high-risk trees, which would include hazard trees. Energy Safety reviewed “5G19 DST Trees Completed Work Release 2021,”<sup>133</sup> and “58G7 FIN\_FMD Trees Completed Work Release 2021”<sup>134</sup> that provides detailed inspection information. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to readiness patrols.

PacifiCorp’s 2021 WMP Update continues by stating that, “In 2021, 1,369 miles of distribution line are planned to be patrolled.”<sup>135</sup> Energy Safety reviewed an Excel file titled, “Contractor Miles Tracker”.<sup>136</sup> This attachment, for the week of January 1, 2022, was the final reporting week for calendar year 2021. Per the Contractor Miles Tracker, Energy Safety determined that PacifiCorp patrolled a total of 1,369.52 miles (taken from Cell 120 of WE01012022\_Contractor Miles Tracker-NEW Weekly\_PSB\_V2 – filtered.xlsx<sup>137</sup>) of distribution line during 2021. According to PacifiCorp, their goal was to complete an inspection prior to the height of the fire season. Regarding circuits where routine maintenance is scheduled for later in the year, to achieve PacifiCorp’s goal, additional inspection and correction work is planned on those circuits earlier in the year. During 2021, PacifiCorp was able to reschedule and complete

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<sup>130</sup> PacifiCorp 2021 WMP Update, page 165.

<sup>131</sup> DR-133, response to question 10.14.

<sup>132</sup> DR-133, response to question 10.14, “5G45 FIN 2021 ACRT accepted WR.”

<sup>133</sup> DR-211 response to OEIS data request question 13, 5G19 DST Trees Completed Work Release 2021.

<sup>134</sup> DR-211 response to OEIS data request question 13, 58G7 FIN\_FMD Trees Completed Work Release 2021.

<sup>135</sup> PacifiCorp 2021 WMP Update, page 166.

<sup>136</sup> DR-116, response to OEIS Data Request 9.5, “Attach OEIS 9.5.”

<sup>137</sup> DR-116, response to OEIS Data Request 9.5, “Attach OEIS 9.5.”

routine inspection (detailed inspection) and correction work for a few circuits earlier in the year, eliminating the need for the additional readiness patrol as work on the circuits was just completed. PacifiCorp did not complete the targeted readiness patrol of 1,369 miles for this initiative; however, the circuits that were originally scheduled for a readiness patrol were still inspected, just under a different specification/initiative (detailed inspection). The plan was adjusted as an efficiency measure. In summary, all 1,369 miles of line were inspected and reported as completed in the Quarterly Initiative Update.<sup>138</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to readiness patrols.

### **6.11.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.11**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.11: Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment.

## **6.12 Initiative 7.3.5.12: 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.”<sup>139</sup>

### **6.12.1 2021 WMP Update Statements, Supporting Information, and Analysis**

In its 2021 WMP Update, PacifiCorp stated, “in 2021, 348 miles of transmission line are planned for this incremental inspection.”<sup>140</sup> Energy Safety reviewed the “Contractor Miles Tracker,”<sup>141</sup> which was filtered to patrol inspections (FIN) for transmission. Total miles inspected equaled 353.8 miles of transmission line. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the inspection of over 348 miles of transmission line.

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<sup>138</sup> DR-116, response to OEIS Data Request 9.5.

<sup>139</sup> 2021 WMP Update guidelines, Resolution WSD-011, attachment 2.2, page 55: <https://energysafety.ca.gov/wp-content/uploads/docs/wmp-2021/docs/352460864.pdf> (accessed May 23, 2023).

<sup>140</sup> PacifiCorp 2021 WMP Update, page 166.

<sup>141</sup> DR-133, response to OEIS data response question 10-16, “WE01012022\_Contractor Miles Tracker – NEW Weekly\_psb\_v2 – filtered.”

### 6.12.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.12.

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.12: Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment.

## 6.13 Initiative 7.3.5.13: 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."<sup>142</sup>

### 6.13.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, "Audits are critical to ensure vegetation requiring work (pruning and/or removal) are properly identified and the work is subsequently conducted in accordance with vegetation program standards/specifications."<sup>143</sup> Energy Safety reviewed "List\_of\_Lines\_2021\_Ca.xlsx"<sup>144</sup> that documents a list of circuits and transmission lines where audits were conducted on work completed as a result of detailed and patrol inspections in 2021. Energy Safety further reviewed "Post Audits\_Forester\_2021\_CA.xlsx"<sup>145</sup> that is a copy of the file used to track audit progress. Applicable work codes are defined as follows:

- FIN: patrol inspections (fire inspection); FMD: off cycle patrol correction work associated with distribution (fire mitigation distribution); FPD: on-cycle patrol correction work associated with distribution (fire patrol distribution); FMT: patrol correction work associated with transmission (fire mitigation transmission).
- MGI: Main grid inspection; MHS: main grid corrective work (main grid hotspot); TNT: Local transmission inspection (transmission inspection); THS: Local transmission corrective work (transmission hotspot).
- DNT: routine maintenance inspection associated with distribution (distribution inspection); DHS: interim corrective maintenance associated with distribution

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<sup>142</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

<sup>143</sup> PacifiCorp 2021 WMP Update, page 166.

<sup>144</sup> DR-211 Response to OEIS data request question 6, "List\_of\_Lines\_2021\_Ca.xlsx."

<sup>145</sup> DR-211 Response to OEIS data request question 6, "Post Audits\_Forester\_2021\_CA.xlsx."

(distribution interim maintenance); DST: cycle corrective maintenance associated with distribution (distribution cycle maintenance).

Finally, Energy Safety reviewed the “PpAuditException\_5G7\_2021\_CA”<sup>146</sup> as an example of a report that is generated through an audit of work performed. This report identifies audit exceptions or conditions that are not consistent with PacifiCorp’s standards and specifications. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to annual vegetation patrols.

In its 2021 WMP Update, PacifiCorp states, “PacifiCorp’s Vegetation SOP includes the company’s standard procedures and protocols for performing vegetation management audits. In general, this standard includes routine tree crew audits of transmission, distribution and pole clearing activities where the primary purpose is an assessment of quality assurance. Each audit may include a Forester, crew leader, and the Supervisor. During these audits, observations are documented in the planning and tracking system indicating the required corrective work. During the audit, observations are discussed, and feedback provided to the vegetation management contractor.”<sup>147</sup> Energy Safety reviewed “PpAuditException\_2021\_CA.”<sup>148</sup> This report is a compilation of audit exceptions identified within 2021 in California. The corrective action work is summarized in Column R. In addition, feedback is provided to the vegetation management contractors largely through verbal discussion, where it reviews audit exceptions and through additional scheduled meetings as needed. Energy Safety also reviewed “Tree Crew Feedback on California ACRT Inspections\_Meeting\_9-2-21”<sup>149</sup> that documents feedback provided to the inspection contractor regarding procedural items noticed in the course of conducting audits and coordinating with tree crews. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to annual vegetation patrols.

In its 2021 WMP Update, PacifiCorp states, “Similar to PacifiCorp’s other programs, 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.” Energy Safety provided examples of exceptions, within the audit report,<sup>150</sup> that violated either federal or state law or posed as imminent safety or reliability risk. PacifiCorp stated that it “does not track or categorize audit exceptions as showing violation of state or federal law. Audit exceptions are conditions identified that are inconsistent with the specifications set forth in PacifiCorp’s Vegetation Management Program Standard Operating Procedures (SOP) and the applicable work release. If, during the course of an audit, a condition is observed which constitutes an imminent risk, work is promptly prioritized to immediately correct the

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<sup>146</sup> DR-211 Response to OEIS data request question 7, “PpAuditException\_5G7\_2021\_CA.”

<sup>147</sup> PacifiCorp 2021 WMP Update, page 166.

<sup>148</sup> DR-211 Response to OEIS data request question 9, “PpAuditException\_2021\_CA.”

<sup>149</sup> DR-211 response to OEIS Data Request question 9 “PacifiCorp’s 2021 WMP Update, page 166 Tree Crew.”

<sup>150</sup> DR-211 Response to OEIS data request question 9, “PpAuditException\_2021\_CA.”

condition. Accordingly, the work is then recorded as complete in the data management system (but is not separately tracked as an imminent condition). Immediate completion of work may be indicative that there was an imminent condition; in addition, the notes field may be used to annotate the circumstances of an imminent risk condition.” Energy Safety reviewed an example exception that was noted as a priority in PacifiCorp’s tracking spreadsheet.<sup>151</sup> In this situation, the auditor identified the condition (high risk tree) and then communicated with the tree contractor verbally via phone to dispatch a crew to address the condition. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to annual vegetation patrols.

In its 2021 WMP Update, PacifiCorp states, “Audits are performed on program cycle work and incremental work conducted as a result of annual patrols.... In 2021, PacifiCorp plans to post-audit all cycle work and all corrective work as a result of patrols conducted prior to height of fire season.”<sup>152</sup> Energy Safety reviewed the “PpAuditException\_5G7\_2021\_CA”<sup>153</sup> as an example of a report that is generated through an audit of work performed. This report identifies audit exceptions or conditions that are not consistent with PacifiCorp’s standards and specifications. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to annual vegetation patrols.

### **6.13.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.13**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.13: Quality Assurance/Quality Control of Inspections.

## **6.14 Initiative 7.3.5.14: 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 it is “adequately trained to perform vegetation management work, according to the utility’s wildfire mitigation plan, in addition to rules and regulations for safety.”<sup>154</sup>

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<sup>151</sup> DR-198, response to question 17.5.

<sup>152</sup> PacifiCorp 2021 WMP Update, page 166-167.

<sup>153</sup> DR-211 Response to OEIS data request question 7, “PpAuditException\_5G7\_2021\_CA.”

<sup>154</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

### 6.14.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, “PacifiCorp’s general approach to recruiting and training of vegetation management personnel can be found in the company’s Vegetation SOP. In general, PacifiCorp takes advantage of training that is provided by the company and arboriculture industry and issues materials as needed to educate inspectors on proper identification of defective trees that have the potential to strike the facilities.”<sup>155</sup> Energy Safety requested PacifiCorp provide any training materials PacifiCorp uses to educate inspectors on proper identification of defective trees that have the potential to strike facilities. Energy Safety reviewed a meeting agenda<sup>156</sup> between PacifiCorp and the inspection contractor (ACRT) that identifies discussion topics including dying trees and defects. In addition, ACRT provides training to their personnel regarding hazard tree identification among other topics. Energy Safety Further reviewed a screenshot<sup>157</sup> of ACRT’s internal online training system that includes a training module on Tree Defects. PacifiCorp indicated that as each new employee onboards with ACRT, they are trained by the ACRT operations manager their first week, and by the local ACRT supervisor the second week. They also spend time being trained/mentored by experienced co-workers. The first week of training covers a variety of topics, with one being identification of hazard trees. This training consists of an online/video training as well as an outdoor portion where the new hire is taken to the field and shown a variety of tree species with various defects. The second week of training follows up on what was learned the first week, with the new hires assessing and listing any hazard trees encountered. From here, the new hire will work with trained forester and the supervisor, honing skills needed to properly assess all trees. Once the forester is working on their own, the supervisor will provide feedback on what has been learned. This comes from walking/planning in the field as well as feedback provided through ACRT’s internal audit process. Energy Safety also reviewed an example of an audit report<sup>158</sup> that ACRT generates when conducting audits and continuing education or field training with their employees (hazard trees are included in the work reviewed). ACRT also conducts benchmarks with its personnel to review process and vegetation management inspection topics. Finally, Energy Safety reviewed “ACRT Online Benchmark”<sup>159</sup> that is a list of topics discussed, including hazard trees, and contains a screenshot of a Microsoft Outlook calendar showing when the meeting was held. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to annual vegetation patrols.

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<sup>155</sup> PacifiCorp 2021 WMP Update, page 167.

<sup>156</sup> DR-211 response to OEIS data request, question 10, ACRT\_PacPower\_Meeting\_12-7-21.

<sup>157</sup> DR-211 response to OEIS data request, question 10. ACRT Training.

<sup>158</sup> DR-211 response to OEIS data request, question 10, ACRT Internal Audit 8-13-21.

<sup>159</sup> DR-211 response to OEIS data request, question 10, ACRT Online Benchmark.

## 6.14.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.14

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.14: Recruiting and Training of Vegetation Management Personnel.

## 6.15 Initiative 7.3.5.15: Remediation of At-Risk Species

The purpose of this initiative is to describe the utility's "action to reduce ignition probability and wildfire consequences attributable to at-risk vegetation species...."<sup>160</sup>

### 6.15.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, "vegetation inspections categorize growth by species as: slow, moderate, fast (cycle-buster). Within HFTD, pruning is performed to prevent vegetation from breaching a 4-foot minimum clearance within one year. This may require additional pruning for at-risk species with very fast growth rates."<sup>161</sup> Energy Safety reviewed PacifiCorp documentation referenced "WE12252021\_Contractor Miles Tracker - TEAMS.xlsx,"<sup>162</sup> which provides a list of inspections categorized by different tiers of FHCA/HFTD in Column B of the "Internal Tracker – Dist Program" tab. Energy Safety also reviewed spreadsheet "CA 2021\_PpInventory\_Distribution,"<sup>163</sup> which includes an inventory of pruning inspections performed during the year 2021. According to the inventory report, PacifiCorp performed a total of 41 units by mitigation efforts related to pruning inspections to prevent vegetation from breaching minimum clearance. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to vegetation inspections related to pruning.

PacifiCorp's 2021 WMP Update continues by stating that "at-risk species inspection is performed along with other vegetation maintenance inspections. These are performed annually in the HFTD, and bi-annually in other areas."<sup>164</sup> According to PacifiCorp, identification of at-risk species is completed as part of regular vegetation management inspections. During these inspections, inspectors identify high risk trees in accordance with PacifiCorp's Vegetation Standard Operating Procedures (SOP), Section 2.6. Energy Safety

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<sup>160</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

<sup>161</sup> PacifiCorp 2021 WMP Update, page 167.

<sup>162</sup> DR-198, response to question 17.13, "WE12252021\_Contractor Miles Tracker -TEAMS.xlsx."

<sup>163</sup> DR-198, response to question 17.13, "CA 2021\_PpInventory\_Distribution."

<sup>164</sup> PacifiCorp 2021 WMP Update, page 167.

reviewed documentation provided by PacifiCorp that referenced “WE12252021\_Contractor Miles Tracker -TEAMS.xlsx,”<sup>165</sup> which provides a list of inspections completed where review/identification of high-risk species are included during 2021. Energy Safety also reviewed document “2022\_Contractor Miles Tracker – WE1231 (1).xlsx,”<sup>166</sup> which provides a list of inspections completed where review/identification of high-risk species are included during 2022. PacifiCorp also provided a list of inspection locations (locations where work was identified by inspector). Work locations include both detail and patrol inspections within calendar year 2021. Refer to documents “CA 2021\_PpInventory\_Distribution.xlsx”<sup>167</sup> and “CA 2022\_PpInventory\_Distribution.xlsx”<sup>168</sup> for more information on the inspections performed during 2021 and 2022. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to at-risk species inspections.

Per PacifiCorp’s 2021 WMP Update, “PacifiCorp is conducting pilot studies (refer to Section 4.4, pilots 3 and 4) using LiDAR and publicly available datasets to identify potential clearances encroachments, potential strike trees, and identify areas with higher risk of vegetation contact and/or greater need for vegetation maintenance work.”<sup>169</sup> Energy Safety reviewed the document referenced, “Field Verification Transmission Urgent Reviewed.xlsx,”<sup>170</sup> which lists locations for field verification of satellite imagery/light detection and ranging (LiDAR). According to PacifiCorp, the document was part of the quality control review of data that was collected through the pilot studies PacifiCorp implemented. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to pilot studies using LiDAR and publicly available datasets.

### **6.15.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.15**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.15: Remediation of At-Risk Species.

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<sup>165</sup> DR-198, response to question 17.13, “WE12252021\_Contractor Miles Tracker -TEAMS.xlsx.”

<sup>166</sup> DR-198, response to question 17.13, “2022\_Contractor Miles Tracker – WE1231 (1).xlsx.”

<sup>167</sup> DR-198, response to question 17.13, “CA 2021\_PpInventory\_Distribution.”

<sup>168</sup> DR-198, response to question 17.13, “CA 2022\_PpInventory\_Distribution.”

<sup>169</sup> PacifiCorp 2021 WMP Update, page 167-168.

<sup>170</sup> DR-198, response to question 17.16, “Field Verification Transmission Urgent Reviewed.xlsx.”

## 6.16 Initiative 7.3.5.16: Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment

The purpose of this initiative is to describe the utility’s “actions to remediate trees that could potentially strike electrical equipment if failure at the ground-level of the tree or branch breakout within the canopy.”<sup>171</sup>

### 6.16.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, “All areas within the HFTD are inspected for hazard trees and mitigation performed annually. Non-fire areas within our service territory are inspected and mitigated along with regular cycle or interim work... Tier 3 areas are completed by June 1, and Tier 2 is completed by end of August.”<sup>172</sup> Per Energy Safety’s review, PacifiCorp provided excel files of PacifiCorp’s circuit name, HFTD tier, inspection dates for hazard trees, and subsequent mitigation dates. For circuits, or parts of circuits, within Tier 3 that had inspections after June 1, 2021, provide a reason why. For circuits, or parts of circuits, within Tier 2 that had inspections after August 2021, provide a reason why. If a circuit, or part of a circuit, was not inspected in 2021, provide a reason why. File “OEIS\_17.20\_FIN\_Tier3\_Post\_6-1-21\_PpInventory”<sup>173</sup> provides inspection information in Tier 3 areas that occurred after June 1, 2021, which included the remaining portions of distribution circuits 5G77 and 5G79 and 5G45, 5G69 and 6G101. File “OEIS\_17.20\_FIN\_Tier2\_PostAugust2021\_PpInventory”<sup>174</sup> provides inspection information in Tier 2 areas that occurred after August 2021, which included portions of distribution circuits 5G93, 5G97, 5G99, 7G75, 8G65, 8G95, 7G81 and 7G82. The inspections on Tier 3 and Tier 2 feeders occurred beyond the June 1, 2021, and August 31, 2021, dates, respectively, due to:

- Availability of inspection resources (inspection contract employee turnover).
- Temporary inspection resources were not available until May 2021 through July 2021. These resources were brought in from various areas to finish the 2021 inspections in the HFTD Tier 3 and Tier 2 areas.
- Re-construction of lines to covered conductor that initiated in April 2021 also required additional or overlapping inspections on 5G79, 5G69 and 7G75.

<sup>171</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

<sup>172</sup> PacifiCorp 2021 WMP Update, page 168.

<sup>173</sup> OEIS Data Request 17.20 response to questions “OEIS\_17.20\_FIN\_Tier3\_Post\_6-1-21\_PpInventory.”

<sup>174</sup> OEIS Data Request 17.20 response to questions “OEIS\_17.20\_FIN\_Tier2\_PostAugust2021\_PpInventory.”

File “OEIS\_17.20\_PpWorkComplete”<sup>175</sup> provides a list of work completed on these circuits from June 1 through the end of the 2021 year. Note: a portion of the inspection and work completed post-June 1, 2021, for the Tier 3 circuits and post-August 31, 2021, for the Tier 2 circuits, are associated with audit exception and not the initial inspection activity. This would be the case largely for those inspection dates later in the 2021 year. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to inspections in all areas for hazard trees and mitigation annually.

In its 2021 WMP Update, PacifiCorp continues by stating that “PacifiCorp is accumulating additional information on hazard trees and removal or trimming with the introduction of digital records and vegetation inventory systems in 2020. We are also collecting data on potential strike trees as part of our LiDAR and remote sensing pilots. We are currently investigating the feasibility of using remote sensing techniques to augment our traditional identification of hazard trees”.<sup>176</sup> Per Energy Safety’s review, Attachment OEIS 17.22<sup>177</sup> provides an overview of results from a project to evaluate light detection and ranging (LiDAR) and hyperspectral imagery. References to “fall-in” are synonymous to “strike trees” or trees that have sufficient height to contact distribution or transmission line facilities if the tree were to fail. Ultimately, PacifiCorp discontinued these pilot projects due to a high number of false positive and vegetation clearance conditions that could not be corroborated through field review. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to inspections in all areas for hazard trees and mitigation annually.

### **6.16.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.16**

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.16: Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment.

## **6.17 Initiative 7.3.5.17: Substation Inspections**

The purpose of this initiative is to describe the utility’s “inspection of vegetation surrounding substations.”<sup>178</sup>

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<sup>175</sup>OEIS Data Request 17.20 response to questions “OEIS\_17.20\_PpWorkComplete.”

<sup>176</sup> PacifiCorp 2021 WMP Update, page 168.

<sup>177</sup> OEIS Data Request 17.22 response to question "OEIS 17.22\_Demo review Sharper Shape.PDF.

<sup>178</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

### 6.17.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states that “PacifiCorp performs regular inspections on all substations. Substations within the HFTD are inspected for vegetation annually and other substations are inspected bi-annually.”<sup>179</sup> PacifiCorp stated that vegetation management does not separately track inspections of vegetation around substations; when inspections are conducted on power lines, the substations are included in accordance with the Vegetation Standard Operating Procedures (SOP).<sup>180</sup> Therefore, all substations are inspected when the lines are inspected. Separate from the inspections conducted by the vegetation management department, PacifiCorp conducts inspections of substations at set frequencies (generally multiple times a year) in compliance with General Order (GO) 174. These inspections are discretely tracked and recorded. PacifiCorp provide a list of substation inspections conducted in 2021 in California.<sup>181</sup> All substations were included and as part of these inspections, vegetation conditions are noted including the substation name, the work order associated with the inspection, the inspection date, the HFTD tier, and the latitude and longitude of the substation location. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to substation inspections.

### 6.17.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.17

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.17: Substation Inspections.

## 6.18 Initiative 7.3.5.18: Substation Vegetation Management

The purpose of this initiative is to describe the utility’s “actions taken to reduce the ignition probability and wildfire consequences attributable to contact from vegetation to substation equipment.”<sup>182</sup>

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<sup>179</sup> PacifiCorp 2021 WMP Update, page 169.

<sup>180</sup> OEIS Data Request 17.25 response to question.

<sup>181</sup> OEIS Data Request 17.25 response to question "OEIS 17.25\_Substations Inspection Report Compilation.xlsx."

<sup>182</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

### 6.18.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states, “PacifiCorp completed substation vegetation removals and overhang trimming for all fire areas in 2020 and will continue to perform annual mitigation.”<sup>183</sup> Energy Safety reviewed a listing of inspections completed in 2021.<sup>184</sup> All substations are included and as part of these inspections and vegetation conditions are noted. The data set contains the substation name, the work order associated with the inspection, the inspection date, the high fire threat district tier and the latitude and longitude of the substation location. As part of these inspections, any vegetation conditions including overhang and encroachment would be noted for correction. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to substation vegetation management.

### 6.18.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.18

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.18: Substation Vegetation Management.

## 6.19 Initiative 7.3.5.19: 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.<sup>185</sup>

### 6.19.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states it is “using one system of vegetation records management throughout the company’s service territory. GIS records will begin accumulating in the new system in specific locations as those areas are due for previously determined vegetation maintenance work, including regular mitigation in fire threat areas.... This record system now includes GIS data and is in use by both PacifiCorp staff and contract workers.”<sup>186</sup> Energy Safety reviewed documentation referenced, “CA

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<sup>183</sup> PacifiCorp 2021 WMP Update, page 169.

<sup>184</sup> OEIS Data Request 17.28 response to question “EIS 17.25\_Substation Inspection Report Compliance.xlsx.”

<sup>185</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

<sup>186</sup> PacifiCorp 2021 WMP Update, page 170.

2021\_PpWorkComplete\_Distribution” and “CA 2021\_PpWorkComplete\_Transmission,”<sup>187</sup> which include reports listing locations of vegetation maintenance work completed during 2021. The documents include latitude and longitude locations of work conducted. Furthermore, Energy Safety requested that PacifiCorp provide date stamped supporting documentation showing that PacifiCorp staff and contract workers had access to the system in 2021. According to PacifiCorp, Contractors are provided access through software permissions. These permissions change through time as there is turnover within the contractor’s workforce. For a contractor to record information within PacifiCorp’s mobile data management system, they have to be granted access. Each individual who is required to enter information into the system is granted access as a user. Energy Safety reviewed a user list<sup>188</sup> (filtered to Pacific Power users), which includes individuals who had access to the mobile data management software in 2021 on the date the user list was generated. Additionally, Energy Safety requested that PacifiCorp provide screenshots, training tools, or other forms of documentation showing each vegetation management program was included in the one system in 2021. PacifiCorp provided screenshots of the program VM Optix, which is the user interface to access the data collected using the mobile data management software (MapIt Fast).<sup>189</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the system of vegetation management records.

PacifiCorp’s 2021 WMP Update continues by stating that “the company also began characterizing general vegetation location and volume near assets using publicly available data on tree canopy and more specific information from remote sensing pilot programs.”<sup>190</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the system of vegetation management records.

PacifiCorp’s stated in its 2021 WMP Update, “the company may evaluate the feasibility of a pilot related to growth forecasting through remote sensing in late 2021.”<sup>191</sup> PacifiCorp stated that the utility developed a Localized Risk Assessment Model (LRAM),<sup>192</sup> which incorporates several variables including tree canopy cover, in order to understand relative risk of a utility caused ignition at each zone of protection in the distribution network. Energy Safety reviewed the model and noted that on page 6 the utility indicated that remote sensing was still under a pilot program. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the growth forecasting pilot.

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<sup>187</sup> DR-198, response to question 17.29, “CA 2021\_PpWorkComplete\_Distribution” and “CA 2021\_PpWorkComplete\_Transmission”

<sup>188</sup> DR-198, response to question 17.30, “User List - AgTerra User Admin11152021.”

<sup>189</sup> DR-198, response to question 17.31.

<sup>190</sup> PacifiCorp 2021 WMP Update, page 170.

<sup>191</sup> PacifiCorp 2021 WMP Update, page 170.

<sup>192</sup> DR-211 response to OEIS Data Request question 11 2021-10-13 Localized Risk Assessment Model Overview.pdf.

## 6.20 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.19

Based on the analysis above, Energy Safety finds PacifiCorp provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.19: Vegetation Inventory System.

## 6.21 Initiative 7.3.5.20: Vegetation Management to Achieve Clearances around Electric Lines and Equipment

The purpose of this initiative is to describe the utility's "actions taken to ensure that vegetation does not encroach upon the minimum clearances in GO95."<sup>193</sup>

### 6.21.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PacifiCorp states it, "has adopted expanded post work minimum clearance distances, of at least twelve (12) feet for all distribution lines and at least twenty (25) feet for transmission lines under 115 kV and thirty (30) feet for any transmission lines of 115 kV – 230 kV."<sup>194</sup> Energy Safety reviewed documentation referenced, "4G1 FIN completed WR and checklist ACRT 2021,"<sup>195</sup> which includes an example of a work release for a distribution circuit with minimum clearance distances. PacifiCorp also provided documentation regarding a work release for a transmission line<sup>196</sup> with minimum clearance distances. These work releases reference PacifiCorp's Vegetation Standard Operating Procedure (SOP), which contains the required post-work clearance specifications of 12 feet for distribution and 25 feet for transmission lines under 115 kV and 30 feet for transmission lines of 115 kV – 230 kV. All work is to be conducted in accordance with the Vegetation SOP.<sup>197</sup> Additionally, Energy Safety requested date stamped supporting documentation as evidence that PacifiCorp adopted the post work minimum clearance distances of at least 12 feet for all distribution lines in 2021. PacifiCorp referred to documentation referenced, "PacifiCorp T&D Vegetation Management Program SOP\_20190819,"<sup>198</sup> which includes the distribution post-work clearances referenced in Section 5.2.1 of the SOP. PacifiCorp provided the procedures for distribution post-work clearances. PacifiCorp provided documentation referenced,

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<sup>193</sup> 2021 WMP guidelines, R.WSD-11-attachment 2.2, page 54.

<sup>194</sup> PacifiCorp 2021 WMP Update, page 170.

<sup>195</sup> DR-198, response to question 17.35, "4G1 FIN completed WR and checklist ACRT 2021."

<sup>196</sup> DR-198, response to question 17.35, "YRE668003 FIN\_FMT Trees Completed Work Release 2021."

<sup>197</sup> DR-198, response to question 17.35.

<sup>198</sup> DR-198, response to question 17.36, "PacifiCorp T&D Vegetation Management Program SOP\_20190819."

“PacifiCorp T&D Vegetation Management Program SOP\_20190819,”<sup>199</sup> which includes the transmission post-work clearances referenced in Section 6.2 of the SOP. PacifiCorp provided the procedures for distribution and transmission post-work clearances as well as maintenance reports. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the post work minimum clearance distances of distribution and transmission lines.

PacifiCorp’s 2021 WMP Update continues by stating that “in addition, PacifiCorp prunes vegetation beyond minimum required clearances in multiple ways. First, 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 twelve (12) feet for slow growing species. In certain cases, PacifiCorp applies an increased clearance for moderate growing and fast-growing species.”<sup>200</sup> Energy Safety reviewed documentation referenced, “PacifiCorp T&D Vegetation Management Program SOP\_20190819,”<sup>201</sup> which includes the distribution post-work clearances referenced in Section 5.2.1. of the SOP. The SOP is referred to in the work releases issued to the contractor and the work is subsequently post-audited against these specifications. Where there are clearance issues, they are noted during the post-audit for correction and to achieve required conductor to vegetation clearance. Energy Safety also reviewed document, “CA 2021\_PpAuditException\_Distribution,”<sup>202</sup> which provides additional documentation showing clearance issues identified for correction. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the pruning of vegetation beyond minimum required clearances in multiple ways.

Per PacifiCorp’s 2021 WMP Update, “PacifiCorp 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.”<sup>203</sup> Energy Safety reviewed documentation referenced, “PacifiCorp T&D Vegetation Management Program SOP\_20190819,”<sup>204</sup> which identifies post-work clearances to be achieved based on growth rate and spatial concepts, including side, under and overhang clearances within Section 5.2.1. of the SOP. Energy Safety also reviewed document “CA 2021\_PpAuditException\_Distribution,”<sup>205</sup> which provides additional support showing

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<sup>199</sup> DR-198, response to question 17.37 and 17.38, “PacifiCorp T&D Vegetation Management Program SOP\_20190819.”

<sup>200</sup> PacifiCorp 2021 WMP Update, page 170.

<sup>201</sup> DR-198, response to question 17.39, “PacifiCorp T&D Vegetation Management Program SOP\_20190819.”

<sup>202</sup> DR-198, response to question 17.39, “CA 2021\_PpAuditException\_Distribution.”

<sup>203</sup> PacifiCorp 2021 WMP Update, page 170-171.

<sup>204</sup> DR-198, response to question 17.40, “PacifiCorp T&D Vegetation Management Program SOP\_20190819.”

<sup>205</sup> DR-198, response to question 17.40, “CA 2021\_PpAuditException\_Distribution.”

clearance issues identified for correction. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to PacifiCorp's integration of spatial concepts.

In its 2021 WMP Update, PacifiCorp states it, "uses natural target pruning for all prune work."<sup>206</sup> Energy Safety reviewed documentation referenced "4G1 FIN completed WR and checklist ACRT 2021," "5G5 FIN FMD completed WR Trees LLC 2021," and "5G69 FIN ACRT WR and checklist 2021,"<sup>207</sup> which provides examples of work releases that reference work to be conducted in accordance with PacifiCorp's Standard Operating Procedure (SOP). Within PacifiCorp's SOP, Section 3 discusses pruning and best management practices, including target pruning. Work is subsequently post-audited and any pruning issues that the auditor sees are identified as cleanup and re-prune. Furthermore, PacifiCorp provided document "CA 2021\_PpAuditException\_Distribution,"<sup>208</sup> which provides a compilation of multiple circuits that have been post-audited. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to the natural pruning for all prune work.

PacifiCorp's 2021 WMP Update continues by stating that "hazard trees identified during annual inspections will, of course, be removed or pruned sufficiently to eliminate the hazard (unless a property owner prevents such work). As a result, some hazard trees will be identified and removed earlier than under the existing program (i.e., which would have then occurred during the next regular cycle)."<sup>209</sup> According to PacifiCorp, in 2021, Pacific Power did not track hazard tree removals discretely from other removals. Therefore, removals identified within the inventory report contain both hazard tree removals and discretionary removals combined. Energy Safety reviewed "CA 2021\_PpInventory\_Distribution.xlsx,"<sup>210</sup> which provides the description of the work in Column R, the inspector may have included terms such as "dead", "declining", or "hazard tree" among other terms, to indicate the tree to be addressed as a hazard tree. Energy Safety also reviewed documentation referenced, "CA 2021\_PpWorkComplete\_Distribution,"<sup>211</sup> which includes the outcome of the annual inspection. While hazard trees were not tracked separately from other removals in 2021, any tree removed as the result of an off-cycle, annual inspection are likely hazard trees, because discretionary removals are not typically performed as part of annual work. By definition, a tree removed as a result of an annual inspection would not have been removed until the next cycle maintenance if the annual inspection did not take place.<sup>212</sup> Therefore, Energy Safety's

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<sup>206</sup> PacifiCorp 2021 WMP Update, page 171.

<sup>207</sup> DR-198, response to question 17.42, "4G1 FIN completed WR and checklist ACRT 2021," "5G5 FIN FMD completed WR Trees LLC 2021", and "5G69 FIN ACRT WR and checklist 2021."

<sup>208</sup> DR-198, response to question 17.43, "CA 2021\_PpAuditException\_Distribution."

<sup>209</sup> PacifiCorp 2021 WMP Update, page 171.

<sup>210</sup> DR-198, response to question 17.44, "CA 2021\_PpInventory\_Distribution.xlsx."

<sup>211</sup> DR-198, response to question 17.44, "CA 2021\_PpWorkComplete\_Distribution."

<sup>212</sup> DR-198, response to question 17.45.

audit found PacifiCorp provided information consistent with the completion of work related to the pruning of hazardous trees during annual inspections.

Per PacifiCorp's 2021 WMP Update, "PacifiCorp's existing Standard Operating Procedures require the removal of hazard trees. Furthermore, the existing Standard Operating Procedures encourage removal even when removal is not required under GO 95, Rule 35 or PRC § 4293."<sup>213</sup> According to PacifiCorp, "the referenced statement in PacifiCorp's Wildfire Mitigation Plan (WMP) is regarding discretionary removals. High risk trees, or hazard trees, are removed as they are identified." PacifiCorp referred to documentation referenced, "PacifiCorp T&D Vegetation Management Program SOP\_20190819,"<sup>214</sup> which provides a discussion of discretionary removals in Section 2.6 of the SOP. PacifiCorp encourages removal of trees in addition to hazard tree removal. Furthermore, PacifiCorp describes these removals as "discretionary removals" as they are not required to be removed under general order (GO) and public resource code (PRC) requirements. Such trees are removed in an effort to reduce future inventory and work. For example, rather than continue to prune a fast-growing tree, PacifiCorp encourages seeking removal of the tree where feasible. GO and PRC requirements do not require removal of such trees but rather that clearances be maintained.<sup>215</sup> PacifiCorp noted that the total recorded number of trees removed associated with the Wildfire Mitigation Plan (WMP) initiatives in 2021 is 6,685. Therefore, Energy Safety's audit found PacifiCorp provided information consistent with the completion of work related to the removal of hazardous trees.

In its 2021 WMP Update, PacifiCorp states, "hazard trees are identified through detailed inspections and patrols by field crews performing work. PacifiCorp uses an initial Level 1 assessment, as defined in ANSI A300 (Part 9). Suspect trees are targeted for removal."<sup>216</sup> Energy Safety reviewed "PPBasal FoliarPole Report 2021\_7g75\_CA.PDF"<sup>217</sup> that is an example of a report, for circuit 7G75, documenting vegetation removal around subject poles. PacifiCorp stated that work releases are issued to the contractor "releasing" work to them. The scope of work may be further refined and reference the identification and removal of high-risk trees/hazard trees. The work releases also reference that all work shall be conducted in accordance with the SOP, Section 1.1. This section references standards and best practices that should be followed, including American National Standards Institute (ANSI) A300 Part 9. Energy Safety also reviewed PacifiCorp's T&D Vegetation Management Program Standard Operating Procedures,<sup>218</sup> "5G19 DST Trees Completed Work Release 2021"<sup>219</sup> that provides detailed inspection information, and "58G7 FIN\_FMD Trees Completed Work

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<sup>213</sup> PacifiCorp 2021 WMP Update, page 171.

<sup>214</sup> DR-198, response to question 17.46, "PacifiCorp T&D Vegetation Management Program SOP\_20190819."

<sup>215</sup> DR-198, response to question 17.47.

<sup>216</sup> PacifiCorp 2021 WMP Update, page 171.

<sup>217</sup> DR-211 response to OEIS data request question 13, PPBasal FoliarPole Report 2021\_7g75\_CA.PDF.

<sup>218</sup> DR-211 response to OEIS data request question 13, PacifiCorp's T&D Vegetation Management Program Standard Operating Procedures (SOP) 20190819.

<sup>219</sup> DR-211 response to OEIS data request question 13, 5G19 DST Trees Completed Work Release 2021.

Release 2021”<sup>220</sup> that provides patrol inspections. PacifiCorp noted that in 2021, the utility did not differentiate between discretionary tree removals and hazard tree or high-risk tree removals. Therefore, PacifiCorp cannot provide a listing of suspect trees targeted for removal. In this context, “suspect trees” is synonymous with hazard/high risk trees. Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the vegetation management activities and hazard trees.

Per PacifiCorp’s 2021 WMP Update, “PacifiCorp conducted vegetation management activities consistent with its Vegetation SOP and this WMP in 2020 and will implement this initiative in 2021.”<sup>221</sup> According to PacifiCorp, the referenced statement in PacifiCorp’s 2021 WMP Update is intended to indicate that PacifiCorp and its contractors would follow the 2021 WMP through continued implementation of this initiative.<sup>222</sup> Therefore, Energy Safety’s audit found PacifiCorp provided information consistent with the completion of work related to the vegetation management activities consistent with its Vegetation SOP and this WMP.

### **6.21.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.20**

Based on the analysis above, Energy Safety finds PacifiCorp did provide information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.20: Vegetation Management to Achieve Clearances around Electric Lines and Equipment.

## **7. Corrective Actions**

Energy Safety reviewed all 18 initiatives pertaining to vegetation management in PacifiCorp’s 2021 WMP Update. Energy Safety’s audit found PacifiCorp noncompliant with 2 out of the 18 vegetation management initiatives in its 2021 WMP Update (2 of the 20 initiatives in the WMP guidelines do not apply to PacifiCorp’s 2021 vegetation management activities). In these instances of noncompliance, Energy Safety’s audit found that PacifiCorp was unable to provide supporting documentation or information consistent with statements and/or targets made in its 2021 WMP Update 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 2 below for a summary of Energy Safety’s findings and corrective actions for PacifiCorp pertaining to this audit. Within 10 business days following receipt of this audit, PacifiCorp must submit a response to the corrective action listed in Table 2 below, as well as supporting documentation. PacifiCorp must title its response “PacifiCorp 2021 SVM Audit

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<sup>220</sup> DR-211 response to OEIS data request question 13, 58G7 FIN\_FMD Trees Completed Work Release 2021.

<sup>221</sup> PacifiCorp 2021 WMP Update, page 171.

<sup>222</sup> DR-198, response to question 17.50.

Corrective Action Plan” and submit the response on the 2021 SVM Docket in Energy Safety’s E-Filing System.

Table 2. Findings from Energy Safety’s 2021 SVM Audit of PacifiCorp

Noncompliant Initiative Number	Finding	Corrective Action
7.3.5.2	PacifiCorp completed 1,471 miles of its target of 1,476 miles of inspections in 2021.	PacifiCorp completed the remaining five (5) miles in early 2022. Therefore, no corrective action is needed for this missed target. However, PacifiCorp shall confirm that the five (5) remaining miles were not counted towards meeting its 2022 target.
7.3.5.5	PacifiCorp completed clearance on 2,872 poles of its target of clearing 3,047 poles in 2021.	PacifiCorp shall a) provide an explanation for why it did not meet its target for pole clearing, and b) detail the steps it is taking to ensure vegetation management operations are consistent with the targets stated in the WMP.

# DATA DRIVEN FORWARD-THINKING INNOVATIVE SAFETY FOCUSED



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