



**OFFICE OF ENERGY INFRASTRUCTURE SAFETY**

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Caroline Thomas Jacobs, Director

October 20, 2023

To: Pacific Gas and Electric Company  
Vincent Tanguay  
Senior Director, Enterprise Compliance  
300 Lakeside Drive  
Oakland, CA 94612

**Subject:** Office of Energy Infrastructure Safety’s Audit on Pacific Gas and Electric Company’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 Pacific Gas and Electric Company’s (PG&E’s) 2021 substantial vegetation management work.

During the audit, Energy Safety reviewed data provided by PG&E and compared it to the representations PG&E made in its 2021 Wildfire Mitigation Plan Update. In performing the audit, Energy Safety found that PG&E did not complete the work required for nine (9) of 20 initiatives. PG&E 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 MaryBeth Farley at [MaryBeth.Farley@energysafety.ca.gov](mailto:MaryBeth.Farley@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 "Suzie Rose", is written over a horizontal line.

Suzie Rose  
Program Manager, Compliance Assurance Division  
Office of Energy Infrastructure Safety  
California Natural Resource Agency

cc:

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<sup>1</sup> [2021-SVM Docket](https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2021-SVM)

(<https://efiling.energysafety.ca.gov/EFiling/DocketInformation.aspx?docketnumber=2021-SVM>, accessed October 13, 2023)



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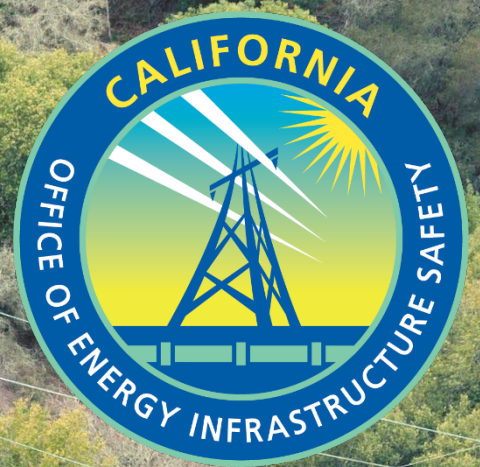
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**OFFICE OF ENERGY INFRASTRUCTURE SAFETY**  
**2021 SUBSTANTIAL VEGETATION**  
**MANAGEMENT AUDIT**  
**PACIFIC GAS AND ELECTRIC COMPANY**

October 2023

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# 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> 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 Pacific Gas and Electric Company's (PG&E's) 2021 WMP Update and conducted this audit to determine if PG&E performed the work required by each of those commitments and statements.

In performing the audit, Energy Safety found that PG&E did not complete the work required for nine (9) initiatives, as summarized below:

- Initiative 7.3.5.1: Additional Efforts to Manage Community and Environmental Impacts
  - PG&E did not communicate its community and environmental impacts via text messaging in 2021.
  - PG&E did not continue discussions with CALFIRE and the Board of Forestry in 2021, only attending one public workshop regarding Forest Practice Rules and application of Utility Exemptions for vegetation management and WMP Plan activities.
- Initiative 7.3.5.3: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment
  - PG&E did not reach the targets of Light Detection and Ranging (LiDAR) inspection miles flown for North American Electric Reliability Corporation (NERC) and non-NERC lines in 2021, falling short of the targets by 442 miles.
  - PG&E did not provide documentation showing the Rights-of-Way (ROW) Expansion program treated vegetation via chipping or lopping and scattering in 2021.
  - PG&E did not document its prioritization of the Integrated Vegetation Management (IVM) projects in 2021.
- Initiative 7.3.5.10: Other Discretionary Inspection of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations
  - PG&E's 2021 WMP Update referred to initiative 7.3.5.3 for work applicable to initiative 7.3.5.10. Energy Safety's analysis found that PG&E did not perform all required work for initiative 7.3.5.3. Therefore, Energy Safety determined that PG&E did not perform all the required work for initiative 7.3.5.10.

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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.*



- Initiative 7.3.5.12: Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment
  - PG&E's 2021 WMP Update referred to initiative 7.3.5.3 for work applicable to initiative 7.3.5.12. Energy Safety's analysis found that PG&E did not perform all the required work for initiative 7.3.5.3. Therefore, Energy Safety determined that PG&E did not perform all required work for initiative 7.3.5.12.
- Initiative 7.3.5.14: Recruiting and Training of Vegetation Management Personnel
  - PG&E did not add program-specific courses for Transmission Vegetation Management (VM) programs.
  - PG&E did not meet the requirement for the month-six audit and instead completed the month-six audit in month-nine.
- Initiative 7.3.5.16: Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment
  - PG&E's WMP Update referred to initiatives 7.3.5.2 and 7.3.5.3 for work applicable to initiative 7.3.5.16. Energy Safety's analysis found that PG&E did not perform all required work for initiative 7.3.5.3. Therefore, Energy Safety determined that PG&E did not perform all required work for initiative 7.3.5.16.
- Initiative 7.3.5.17: Substation Inspections
  - PG&E did not meet its inspection targets for Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 High Fire Threat Districts (HFTD). PG&E completed 170 of 176, or 97%, of planned inspections.
  - PG&E did not meet its inspection targets for Electric Distribution Substations not within or adjacent to Tier 2 and Tier 3 HFTDs. PG&E completed 86 of 263, or 33%, of planned inspections.
  - PG&E did not meet its inspection targets for Electric Transmission Substations not within a Tier 2 or 3 HFTD. PG&E completed 22 of 41, or 54%, of planned inspections.
- Initiative 7.3.5.18: Substation Vegetation Management
  - PG&E did not meet its maintenance targets for Electric Distribution Substations within a Tier 2 or 3 HFTD. PG&E completed 170 of 176, or 97%, of planned maintenance.
  - PG&E's records did not clearly show that it prioritized Electric Transmission Substation and Hydro facility maintenance based on HFTD Tiers.
- Initiative 7.3.5.20: Vegetation Management to Achieve Clearances Around Electric Lines and Equipment
  - PG&E's WMP Update referred to initiatives 7.3.5.2 and 7.3.5.3 for work applicable to initiative 7.3.5.20. PG&E did not perform all required work for initiative 7.3.5.3. Therefore, Energy Safety determined that PG&E did not perform all the required work for initiative 7.3.5.20.

Energy Safety found that PG&E performed the work required for the other eleven (11) initiatives in the WMP, as detailed in Table 1 below.

Table 1. Energy Safety's Analysis of PG&E's 2021 WMP Update Vegetation Management Initiatives

2021 WMP Update Initiative Number	2021 WMP Update Initiative Name	Findings
7.3.5.1	Additional Efforts to Manage Community and Environmental Impacts	<b>Did not perform all required work</b>
7.3.5.2	Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment	Performed all required work
7.3.5.3	Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment	<b>Did not perform all required work</b>
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	Performed all required work
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	Performed all required work

2021 WMP Update Initiative Number	2021 WMP Update Initiative Name	Findings
	Transmission Electric Lines and Equipment	
7.3.5.9	Other Discretionary Inspection of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations	Performed all required work
7.3.5.10	Other Discretionary Inspection of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations	<b>Did not perform all required work<sup>3</sup></b>
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	<b>Did not perform all required work<sup>4</sup></b>

<sup>3</sup> PG&E's 2021 WMP Update referred to initiative 7.3.5.3 for work applicable to initiative 7.3.5.10. Energy Safety's analysis found that PG&E did not perform all required work for initiative 7.3.5.3. Therefore, Energy Safety determined that PG&E did not perform all required work for initiative 7.3.5.10.

<sup>4</sup> PG&E's 2021 WMP Update referred to initiative 7.3.5.3 for work applicable to initiative 7.3.5.12. Energy Safety's analysis found that PG&E did not perform all required work for initiative 7.3.5.3. Therefore, Energy Safety determines that PG&E did not perform all required work for initiative 7.3.5.12.

2021 WMP Update Initiative Number	2021 WMP Update Initiative Name	Findings
7.3.5.13	Quality Assurance/Quality Control of Inspections	Performed all required work
7.3.5.14	Recruiting and Training of Vegetation Management Personnel	<b>Did not perform all required work</b>
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	<b>Did not perform all required work<sup>5</sup></b>
7.3.5.17	Substation Inspections	<b>Did not perform all required work</b>
7.3.5.18	Substation Vegetation Management	<b>Did not perform all required work</b>
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	<b>Did not perform all required work<sup>6</sup></b>

<sup>5</sup> PG&E's WMP Update referred to initiatives 7.3.5.2 and 7.3.5.3 for work applicable to initiative 7.3.5.16. Energy Safety's analysis found that PG&E did not perform all the work required for initiative 7.3.5.3. Therefore, Energy Safety determined that PG&E did not perform all required work for initiative 7.3.5.16

<sup>6</sup> Under initiative 7.3.5.20 in PG&E's 2021 WMP Update, PG&E referred to initiative 7.3.5.2 and 7.3.5.3. Energy Safety's analysis found that PG&E did not perform all required work for initiative 7.3.5.3. Therefore, Energy Safety determines that PG&E did not perform all required work for initiative 7.3.5.20.

## 2. Scope of the Substantial Vegetation Management Audit

To conduct this audit, Energy Safety evaluated the vegetation management section of PG&E's 2021 WMP Update.<sup>7</sup> The 2021 WMP Update guidelines contained 20 initiatives in the vegetation management section. In reviewing the vegetation management section and initiatives in PG&E'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 electrical corporation will hold public meetings with communities regarding future vegetation management activities, the electrical corporation will train personnel on electrical corporation protocols, etc.) made by PG&E. Energy Safety then reviewed available information and requested additional documentation to assess whether PG&E met its quantitative commitments and executed its verifiable statements.

On November 1, 2021, PG&E notified Energy Safety that it had completed a substantial portion of the work required by the vegetation management initiatives in its 2021 WMP Update.<sup>8</sup> In performing this audit, Energy Safety requested documentation substantiating the work performed by PG&E. This audit does not assess the quality of that work.

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<sup>7</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

<sup>8</sup> Via letter from PG&E's Senior Director of Vegetation Management Operations to the Director of Energy Safety.

### 3. Vegetation Management Programs

PG&E states that it implements the following programs to perform vegetation management work near distribution and transmission lines: Enhanced Vegetation Management (EVM), Routine Vegetation Management (Routine), and the Catastrophic Event Memorandum Account (CEMA) Program. PG&E's vegetation management work on its transmission lines includes the following programs: Routine Transmission, ROW Maintenance, and IVM. In addition, PG&E has various quality assessment and quality control programs to oversee effective implementation of its vegetation management programs. Each of these programs is described in more detail below for reference throughout this audit.

- **Enhanced Vegetation Management (EVM) program:** Based on risk in Tier 2 and Tier 3 High Fire Threat District (HFTD), patrols overhead primary distribution facilities and assesses all trees within strike potential of the facilities.<sup>9</sup> EVM encompasses radial clearances, overhang trimming, and assessing trees with the potential to strike power lines.<sup>10</sup>
- **Routine Distribution program:** Scheduled inspections on all overhead primary and secondary distribution facilities to maintain radial clearance between vegetation and conductors as well as inspecting for dead, dying, and declining trees within strike potential.<sup>11</sup>
- **Mid-cycle Patrol program:** Identifies trees that are dead and dying for remediation in areas that are “at a higher risk of tree mortality and/or wildfire risk.”<sup>12</sup> This additional patrol occurs as a second inspection beyond the Routine program.<sup>13</sup>
- **Utility Defensible Space (UDS):** Creates “fire defense zones” by removing dead fuels and modifying live vegetative fuels along high-risk circuits to reduce the intensity and spread of fires.<sup>14</sup>
- **Routine NERC and Routine Non-NERC:** Inspects vegetation along PG&E's transmission circuits via LiDAR and visual verification of the LiDAR results as well as the “mitigation of vegetation encroachments as well as other vegetation conditions” on lines designated as “critical” transmission lines by NERC and subject to the Federal VM Standard [Facilities] FAC-003-4, and on lines without this “critical” designation by NERC.<sup>15</sup>

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<sup>9</sup> PG&E's 2021 WMP Update, pages 693-694.

<sup>10</sup> PG&E's 2021 WMP Update, page 685.

<sup>11</sup> PG&E's 2021 WMP Update, page 693.

<sup>12</sup> PG&E's 2021 WMP Update, page 714.

<sup>13</sup> PG&E's 2021 WMP Update, page 714.

<sup>14</sup> PG&E's 2021 WMP Update, page 704.

<sup>15</sup> PG&E's 2021 WMP Update, page 697.

- **ROW Maintenance program:** Maintains and reclaims transmission corridors in a manner that meets or exceeds the requirements as outlined by NERC.<sup>16</sup> The program removes danger trees and incompatible vegetation within the Wire Zone and Border Zones of transmission lines.<sup>17</sup>
- **IVM program:** Maintains cleared rights-of-way in a sustainable and compatible condition by eliminating tall-growing and fire-prone vegetation and promoting low-growing fire-resistant vegetation.”<sup>18</sup>
- **Quality Verification Vegetation Management (QV) program:** Reviews vegetation management work for work quality against PG&E standards via sampling areas in the HFTD and SRA non-HFTD areas and identifies short term corrective actions.<sup>19</sup>
- **Quality Assurance Vegetation Management (QA) program:** Estimates compliance at the program level while assessing short-term corrective actions and long-term preventative actions.<sup>20</sup>
- **Work Verification (WV) program:** Is specific to EVM work and checks for and validates that all vegetation work under the EVM program was completed to the EVM scope.<sup>21</sup>

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<sup>16</sup> PG&E’s 2021 WMP Update, page 697.

<sup>17</sup> PG&E’s 2021 WMP Update, page 697.

<sup>18</sup> PG&E’s 2021 WMP Update, page 697.

<sup>19</sup> PG&E’s 2021 WMP Update, pages 708 and 720.

<sup>20</sup> PG&E’s 2021 WMP Update, pages 708 and 720.

<sup>21</sup> PG&E’s 2021 WMP Update, pages 708, 720-721, and 731.

## 4. 2021 WMP Vegetation Management Initiatives

In its 2021 WMP Update, PG&E identified 20 vegetation management initiatives, as listed below.

1. Additional efforts to manage community and environmental impacts
2. Detailed inspections of vegetation around distribution electric lines and equipment
3. Detailed inspections of vegetation around transmission electric lines and equipment
4. Emergency response vegetation management due to red flag warning or other urgent conditions
5. Fuel management and reduction of “slash” from vegetation management activities
6. Improvement of inspections
7. LiDAR inspections of vegetation around distribution electric lines and equipment
8. LiDAR inspections of vegetation around transmission electric lines and equipment
9. Other discretionary inspection of vegetation around distribution electric lines and equipment, beyond inspections mandated by rules and regulations
10. Other discretionary inspection of vegetation around transmission electric lines and equipment, beyond inspections mandated by rules and regulations
11. Patrol inspections of vegetation around distribution electric lines and equipment
12. Patrol inspections of vegetation around transmission electric lines and equipment
13. Quality assurance / quality control of inspections
14. Recruiting and training of vegetation management personnel
15. Remediation of at-risk species
16. Removal and remediation of trees with strike potential to electric lines and equipment
17. Substation inspections<sup>22</sup>
18. Substation vegetation management<sup>23</sup>
19. Vegetation inventory system
20. Vegetation management to achieve clearances around electric lines and equipment

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<sup>22</sup> PG&E created sub-initiatives in its 2021 WMP Update for distribution and transmission substation inspections: initiatives 7.3.5.17.1 and 7.3.5.17.2 respectively.

<sup>23</sup> PG&E created sub-initiatives in its 2021 WMP Update for distribution and transmission substation vegetation management: initiatives 7.3.5.18.1 and 7.3.5.18.2 respectively.



## 5. PG&E's Vegetation Management Programs and the 2021 WMP Update Initiatives

Through a review of PG&E's 2021 WMP Update, Energy Safety correlated PG&E's vegetation management programs listed in the section above to the following initiatives listed in its 2021 WMP Update:

*Table 2. PG&E Vegetation Management Program and Corresponding 2021 WMP Update Vegetation Management Initiative*

<b>Vegetation Management Program</b>	<b>2021 WMP Update Initiative Number</b>
<b>EVM program</b>	7.3.5.2
	7.3.5.5
	7.3.5.6
	7.3.5.15
	7.3.5.16
	7.3.5.20
<b>Routine Distribution program</b>	7.3.5.2
	7.3.5.7
	7.3.5.16
	7.3.5.20
<b>Mid-cycle Patrol</b>	7.3.5.2
	7.3.5.8
	7.3.5.9
	7.3.5.16
	7.3.5.20
<b>UDS program</b>	7.3.5.5

<b>Vegetation Management Program</b>	<b>2021 WMP Update Initiative Number</b>
<b>Routine NERC and Non-NERC Programs</b>	7.3.5.3 7.3.5.8 7.3.5.10 7.3.5.12 7.3.5.16 7.3.5.20
<b>ROW Expansion and Maintenance program</b>	7.3.5.3 7.3.5.10 7.3.5.12 7.3.5.16 7.3.5.20
<b>IVM program</b>	7.3.5.3 7.3.5.10 7.3.5.12 7.3.5.16 7.3.5.20
<b>Quality Assurance, Quality Verification, Work Verification programs</b>	7.3.5.6 7.3.5.13
<b>Substation Vegetation Management</b>	7.3.5.17.1 7.3.5.17.2 7.3.5.18.1 7.3.5.18.2

## 6. Documents Reviewed

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

1. PG&E's 2021 Wildfire Mitigation Report Update, revised June 3, 2021 (PG&E's 2021 WMP Update).
2. PG&E's notification letter.
3. PG&E's 2021 Quarterly Data Reports for quarters 1, 2, 3 and 4.
4. PG&E's 90-day Corrective Action Plan Reports.
5. PG&E's response to Energy Safety's data request DR-050.
6. PG&E's response to Energy Safety's data request DR-120, including its supplemental responses.
7. PG&E's response to Energy Safety's data request DR-134, including its supplemental responses.
8. PG&E's response to Energy Safety's data request DR-161, including its supplemental responses.
9. PG&E's response to Energy Safety's data request DR-166.
10. PG&E's response to Energy Safety's data request DR-169, including its supplemental responses.
11. PG&E's response to Energy Safety's data request DR-184.
12. PG&E's response to Energy Safety's data request DR-191.

Table 3 below outlines Energy Safety's communication with PG&E pertaining to this SVM audit, including Energy Safety's Data Requests and PG&E's responses.

*Table 3. Timeline of Events of Communication Between Energy Safety and PG&E Regarding 2021 SVM Audit*

Number	Date	Event
1	November 1, 2021	PG&E notified Energy Safety that it completed a substantial portion of its vegetation management requirements via email.
2	November 8, 2021	Energy Safety submitted DR-050 with a response due December 6, 2021.
3	December 6, 2021	PG&E submitted its response to DR-050.
4	March 23, 2023	Energy Safety met with PG&E to review DR-120. Energy Safety submitted DR-120 with a response due April 6, 2023.

Number	Date	Event
5	April 6, 2023	Energy Safety met with PG&E to review DR-134. Energy Safety submitted DR-134 with a response due April 20, 2023. PG&E submitted its response to DR-120.
6	April 20, 2023	PG&E submitted its response to DR-134.
7	April 25, 2023	PG&E submitted additional information as part of its response to DR-134.
8	May 8, 2023	Energy Safety submitted DR-161 with a response due on May 22, 2023.
9	May 11, 2023	PG&E requested an extension for DR-134 for May 26, 2023. Energy Safety approved the request the same day.
10	May 16, 2023	PG&E and Energy Safety met to review documents PG&E provided in response to DR-120 and DR-134. PG&E clarified during the meeting that it had provided incorrect data for DR-120 and would resubmit by May 23, 2023.
11	May 25, 2023	PG&E resubmitted data for DR-120.
12	May 26, 2023	PG&E submitted its response to DR-161.
13	June 1, 2023	Energy Safety sent DR-166 with a response due June 6, 2023.
14	June 6, 2023	PG&E submitted its response to DR-166.
15	June 14, 2023	Energy Safety submitted DR-169 with a response due on June 28, 2023.
16	June 28, 2023	PG&E submitted its response to DR-169.
17	July 7, 2023	PG&E resubmitted data for DR-169.
18	August 1, 2023	PG&E and Energy Safety met to review documents PG&E provided in response to DR-120 and DR-134.
19	August 3, 2023	PG&E provided supplemental documents for DR-120 and DR-161.

Number	Date	Event
20	August 4, 2023	PG&E and Energy Safety met to review documents PG&E provided in response to DR-169.
21	August 9, 2023	Energy Safety submitted DR-184 with a response due on August 14, 2023.
22	August 15, 2023	PG&E submitted its response to DR-184.
23	August 17, 2023	PG&E provided supplemental documents for DR-169.
24	August 29, 2023	Energy Safety submitted DR-191 with a response due on September 5, 2023.
26	September 1, 2023	PG&E submitted its supplemental response to DR-134.
28	September 5, 2023	PG&E submitted its response to DR-191.

## 7. Analysis

This section contains an initiative-by-initiative analysis of all vegetation management initiatives in PG&E's 2021 WMP Update. Each subsection provides verifiable statements, supporting information, and Energy Safety analysis for an initiative, followed by a summary of Energy Safety's findings.

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

The purpose of this initiative is “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>24</sup>

#### 7.1.1 2021 WMP Update Initiative Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PG&E states that it “proactively communicates and partners with impacted customers, landowners, government agencies and community organizations regarding the planned work and long-term solutions in and around their neighborhood or community.”<sup>25</sup> Energy Safety reviewed PG&E door hangers left on properties with pre-inspector's contact information and a description of work;<sup>26</sup> a sample letter to landowners regarding upcoming transmission vegetation management work;<sup>27</sup> and a sample meeting invitation, presentation and meeting notes from a March 2021 meeting between PG&E and the Los Padres National Forest to coordinate annual efforts such as permits and fuel reduction projects.<sup>28</sup> Additionally, Energy Safety reviewed a meeting invitation with Napa County representatives in September 2021 and the presentation for expanding PG&E's wood management program in the area.<sup>29</sup> Therefore, Energy Safety's audit found PG&E provided information consistent with the completion of the work identified in this statement regarding proactive communication efforts with government agencies, landowners, and community organizations.

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<sup>24</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>25</sup> PG&E's 2021 WMP Update, page 690.

<sup>26</sup> DR-120, response to question 1a, DRU11610\_Q001\_Atch03.pdf.

<sup>27</sup> DR-120, response to question 1b, DRU11610\_Q001\_Atch02.docx.

<sup>28</sup> DR-120, response to question 1c, DRU11610\_Q007b\_Atch01\_CONF.pdf, DRU11610\_Q007b\_Atch02\_CONF.pdf, and DRU11610\_Q007b\_Atch03.pptx.

<sup>29</sup> DR-120, response to question 1d, DRU11610\_Q001\_Atch01.pdf.

PG&E's 2021 WMP Update also states:

Communication efforts focus on community and environmental impacts that provide program information, share plans and engage in partnerships where possible, including the promotion of utility compatible, fire-resistant landscaping education... The various forms of communication used include letters, postcards, door hangers, fact sheets, brochures, presentation materials, Interactive Voice Response outbound calling, web site, social media, email letters, texting, and work plan portals.<sup>30</sup>

PG&E defines community impacts as the effect of PG&E and contract crews on properties conducting vegetation management work.<sup>31</sup> Environmental impacts are defined by PG&E as water features, known cultural sites, and endangered species and habitats affected by vegetation management work.<sup>32</sup> Energy Safety reviewed a standard letter sent to property owners regarding PG&E's wood removal program,<sup>33</sup> a standard postcard notifying property owners of upcoming vegetation inspections,<sup>34</sup> a door hanger used to inform property owners of PG&E's wood management program including pre-inspectors contact information,<sup>35</sup> a sample fact sheet describing PG&E's wood management program,<sup>36</sup> and a brochure describing PG&E's various vegetation management programs and the applicable laws and regulations.<sup>37</sup> Additionally, Energy Safety reviewed a presentation to the Napa County Board of Supervisors regarding progress on vegetation manage in and future strategies,<sup>38</sup> the script used for Interactive Voice Response outbound calls,<sup>39</sup> website postings including the promotion of fire resistant plants,<sup>40</sup> a social media post describing PG&E's wildfire mitigation activities,<sup>41</sup> a sample email to Mariposa County representatives regarding planned EVM work,<sup>42</sup> and a cover letter sent to staff with the Regional Water Quality Control Board via Project Wise,<sup>43</sup> PG&E's work plan portal, all from 2021. In its response to Energy Safety's data request, PG&E admitted it failed to "conduct any customer outreach via text message in 2021."<sup>44</sup> Therefore, Energy Safety's audit found that PG&E did not provide information

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<sup>30</sup> PG&E's 2021 WMP Update, page 690.

<sup>31</sup> DR-120, response to question 3.

<sup>32</sup> DR-120, response to question 3.

<sup>33</sup> DR-120, response to question 2a, DRU11610\_Q002\_Atch01.pdf.

<sup>34</sup> DR-120, response to question 2b, DRU11610\_Q002\_Atch02.pdf.

<sup>35</sup> DR-120, response to question 2c, DRU11610\_Q002\_Atch03.pdf.

<sup>36</sup> DR-120, response to question 2d, DRU11610\_Q002\_Atch04.pdf.

<sup>37</sup> DR-120, response to question 2e, DRU11610\_Q002\_Atch05.pdf.

<sup>38</sup> DR-120, response to question 2f, DRU11610\_Q002\_Atch06.pdf.

<sup>39</sup> DR-120, response to question 2g, DRU11610\_Q002\_Atch07.pdf.

<sup>40</sup> DR-120, response to question 2h, DRU11610\_Q002\_Atch08.pdf.

<sup>41</sup> DR-120, response to question 2i, DRU11610\_Q002\_Atch09.jpg.

<sup>42</sup> DR-120, response to question 2j, DRU11610\_Q002\_Atch10\_CONF.pdf.

<sup>43</sup> DR-120, response to question 2l, DRU11610\_Q008\_Atch01\_CONF.pdf.

<sup>44</sup> DR-120, response to question 2k.

consistent with the completion of the work identified in this statement regarding all the various forms of communication PG&E used in 2021.

Additionally, PG&E's 2021 WMP Update states that, "communication efforts to mitigate community and environmental impacts are performed within all PG&E regions by various PG&E lines of business (LOB), such as [Vegetation Management] VM, Governmental Relations, Division Leadership Teams, Call Center Operations, Customer Communications and Local Customer Experience."<sup>45</sup> To assess PG&E's communication efforts to mitigate community impacts, Energy Safety reviewed a sample webinar presentation from 2021<sup>46</sup> and a link to its website with additional webinars detailing vegetation management progress and other wildfire mitigation programs (i.e., Public Safety Power Shutoffs (PSPS)) for each region.<sup>47</sup> Energy Safety also reviewed an executive report detailing PG&E's outreach efforts regarding PSPS impacts to government representatives throughout the state.<sup>48</sup> Additionally, Energy Safety reviewed an Excel file listing events held by PG&E's Division Leadership Teams in 2021, including the topics discussed, primarily concerning PSPS events and Community Wildfire Safety Program (CWSP).<sup>49</sup> In support of PG&E's communication efforts with Call Center Operations, PG&E provided an Interactive Voice Response outbound call message describing a PSPS event.<sup>50</sup> Additionally, Energy Safety reviewed a standard letter sent to property owners regarding PG&E's wood removal program<sup>51</sup> and a presentation provided to Napa County from 2021 regarding PG&E's wood management program in the area.<sup>52</sup> To assess PG&E's communication efforts to mitigate environmental impacts, Energy Safety reviewed meeting notes<sup>53</sup> and PG&E's presentations<sup>54</sup> to federal land managers its vegetation management activities and potential environmental impacts such as herbicide use, nesting season, and collaboration for fuels management work. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding its communication efforts to mitigate community and environmental impacts.

PG&E's 2021 WMP Update states:

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<sup>45</sup> PG&E's 2021 WMP Update, page 690.

<sup>46</sup> DR-120, response to question 4a, DRU11610\_Q003\_Atch01.pdf

<sup>47</sup> [https://www.pge.com/en\\_US/safety/emergency-preparedness/natural-disaster/wildfires/community-wildfire-safety-open-house-meetings.page?WT.mc\\_id=Vanity\\_firesafetywebinars#pastevents](https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/community-wildfire-safety-open-house-meetings.page?WT.mc_id=Vanity_firesafetywebinars#pastevents) (accessed on April 13, 2023).

<sup>48</sup> DR-120, response to question 4b, DRU11610\_Q004\_Atch01\_CONF.pdf.

<sup>49</sup> DR-120, response to question 4c, DRU11610\_Q004\_Atch02\_CONF.xlsx.

<sup>50</sup> DR-120, response to question 4d, DRU11610\_Q004\_Atch04.mp3.

<sup>51</sup> DR-120, response to question 2a, DRU11610\_Q002\_Atch01.pdf.

<sup>52</sup> DR-120, response to question 1d, DRU11610\_Q001\_Atch01.pdf.

<sup>53</sup> DR-120, supplemental response to question 4, DRU11610\_Q004\_Atch04\_Redding Annual Meeting Notes\_042021\_CONF.pdf.

<sup>54</sup> DR-120, supplemental response to question 4, DRU11610\_Q004\_Atch02\_USFS MPE Annual Meeting 2021\_LosPadres.pptx, DRU11610\_Q004\_Atch03\_BLM 2021 Annual Meetings\_Redding\_CONF.pdf.



PG&E's land and environmental management, customer care, and legal teams work closely with PG&E's VM team annually to overcome community and environmental challenges. They coordinate and plan the work in order to reach out to landowners, communities, and local governments to address concerns in advance of the proposed VM activities.<sup>55</sup>

Energy Safety reviewed meeting notes between Los Padres National Forest and PG&E's land and environmental team discussing topics such as stream protection and permitting,<sup>56</sup> and PG&E's presentation material<sup>57</sup> from Spring 2021. Additionally, Energy Safety reviewed a meeting invitation between PG&E's customer care team and Napa County representatives in September 2021 covering the PG&E's expansion wood management program in the area.<sup>58</sup> PG&E provided a meeting invite between government representatives and PG&E regarding a pending assembly bill regarding electrical corporation vegetation management<sup>59</sup> and an agenda and list of attendees, that included elected government representatives and a member of PG&E's legal team, for a tour of PG&E's Wildfire Resource Command Center and Hazard Awareness Warning Center.<sup>60</sup> Therefore, Energy Safety's audit found PG&E provided information supporting PG&E's various teams working with PG&E's VM team to overcome challenges, coordinate and plan work in 2021.

In its 2021 WMP Update, PG&E states: "PG&E routinely engages with the CPUC, state and local agencies, as well as legislature to address these constraints."<sup>61</sup> PG&E addresses constraints by "proactively engaging with numerous stakeholder groups in various communication avenues in order to ensure that expectations of work to be performed align between groups."<sup>62</sup> The types of constraints include access issues, bird nest reviews, and agency-managed lands.<sup>63</sup> To assess PG&E's efforts to engage with the CPUC, Energy Safety reviewed sample documentation such as a letter sent to the CPUC's Executive Director detailing its efforts to remove felled trees on property owner's land as a result of the 2020 and 2021 wildfires, including various communication efforts to property owners (i.e., doorhangers, telephone calls, etc.)<sup>64</sup> and a presentation provided to the CPUC in November 2021 detailing its work to mitigate constraints for its EVM program, including onboarding additional resources to help resolve constraints.<sup>65</sup> See the paragraphs above for details on Energy Safety's review of PG&E's efforts coordinating with state and local agencies to proactively

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<sup>55</sup> PG&E's 2021 WMP Update, page 691.

<sup>56</sup> DR-120, response to question 5a, DRU11610\_Q007b\_Atch02\_CONF.docx.

<sup>57</sup> DR-120, response to question 5a, DRU11610\_Q007b\_Atch01\_CONF.pdf.

<sup>58</sup> DR-120, response to question 5b, DRU11610\_Q001\_Atch01.pdf.

<sup>59</sup> DR-120, response to question 5c, DRU11610\_Q007c\_Atch01\_CONF.pdf.

<sup>60</sup> DR-120, response to question 5c, DRU11610\_Q007c\_Atch02\_CONF.pdf, DRU11610\_Q007c\_Atch03\_CONF.pdf.

<sup>61</sup> PG&E's 2021 WMP Update, page 691.

<sup>62</sup> DR-120, response to question 6a.

<sup>63</sup> DR-120, response to question 6b.

<sup>64</sup> DR-120, response to question 7a, DRU11610\_Q007a\_Atch01\_CONF.pdf.

<sup>65</sup> DR-120, response to question 7a, DRU11610\_Q007a\_Atch02.pdf, slide 13.

address concerns. Therefore, Energy Safety’s audit found PG&E provided information supporting its efforts to engage with the CPUC, state and local agencies to address constraints.

PG&E’s 2021 WMP Update further details its use of “a web-based program known as ‘ProjectWise’ to share workplans and schedules associated with VM programs and activities.”<sup>66</sup> This program was extended to the Regional Water Quality Control Board in 2021.<sup>67</sup> Energy Safety reviewed monthly outlooks (projections) for EVM and Routine from ProjectWise provided to the Regional Water Quality Control Board in 2021.<sup>68</sup> Therefore, Energy Safety’s audit found PG&E provided information consistent with the completion of the work identified in this statement regarding ProjectWise in 2021.

PG&E’s 2021 WMP Update states that it “continues discussion with the Board of Forestry and CAL FIRE regarding Forest Practice Rules and application of Utility Exemptions for VM and WMP Plan activities. Workshops are scheduled to begin in December 2020 and continue through 2021.”<sup>69</sup> PG&E considers “workshops” to mean meetings with open communication.<sup>70</sup> PG&E attended one public “workshop” with CALFIRE and the Board of Forestry regarding Forest Practice Rules and Utility Exemptions in 2021.<sup>71</sup> Energy Safety reviewed the “Management Committee Meeting” invitation,<sup>72</sup> as well as a comment letter from PG&E to CALFIRE from 2021<sup>73</sup> where PG&E summarized its presentation during the workshop. In the comment letter, PG&E reiterated its challenges with implementing wildfire mitigation activities while abiding by Forest Practice Rules and its proposed changes to Electric Corporation Rights-of-Way Exemptions. PG&E engaging with CALFIRE and the Board of Forestry once in 2021 does not equate to continuing discussion and attending workshops with the agency as the 2021 WMP Update indicates. Therefore, Energy Safety’s audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding continuing discussions with CALFIRE and the Board of Forestry on Forest Practice Rules and application of Electric Corporations Exemptions for VM and WMP Plan activities in 2021.

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<sup>66</sup> PG&E’s 2021 WMP Update, page 619.

<sup>67</sup> PG&E’s 2021 WMP Update, page 619.

<sup>68</sup> DR-120, response to question 8, DRU11610\_Q008\_Atch01\_CONF.pdf.

<sup>69</sup> PG&E’s 2021 WMP Update, page 691.

<sup>70</sup> DR-120, response to question 9a.

<sup>71</sup> DR-120 supplemental response to question 9, DRU11610\_Q009\_Atch05 FINAL May 2021 Minutes (002).docx.

<sup>72</sup> DR-120, response to question 9b, DRU11610\_Q009\_Atch01\_CONF.pdf.

<sup>73</sup> DR-120 supplemental response to question 9, DRU11610\_Q009\_Atch02\_ROW Comment Letter\_CONF.pdf.

### 7.1.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.1

Based on the analysis above in Section 7.1.1, Energy Safety finds PG&E did not complete all the work of the 2021 WMP Initiative 7.3.5.1: Additional Effort to Manage Community and Environmental Impacts. See Section 8.1 of this audit for a list of corrective actions.

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

The purpose of this initiative is “careful visual inspections of vegetation around the rights-of way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.”<sup>74</sup>

### 7.2.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PG&E describes the intent of its distribution VM programs as identifying dead, dying, and declining trees, green trees that do not visually appear hazardous within, or those that may encroach within, the Minimum Distance Requirements (MDRs), green hazard trees, trees causing strain and abrasion on secondary lines, abnormal field conditions, as well as maintain compliance with state and federal laws and regulations. Energy Safety reviewed PG&E's distribution VM procedures used for this initiative<sup>75</sup> and found the distribution VM procedures direct pre-inspectors to identify the above conditions and reference the applicable laws and regulations. Therefore, Energy Safety's audit found PG&E provided information consistent with the completion of the work identified in this statement regarding its distribution VM programs.

Specifically, PG&E's 2021 WMP Update describes its Routine Patrol as “scheduled inspections on all overhead primary and secondary distribution facilities to maintain radial clearance between vegetation and conductors by identifying trees that will encroach within the MDRs required by law or PG&E procedures, dead, dying and declining trees.”<sup>76</sup> PG&E's Distribution

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<sup>74</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>75</sup> Protocols reviewed include those provided in response to DR050-QDR SOP-20211108: TD-7102P-01, published October 27, 2015, revision 1 (Distribution Routine Patrol); TD-7102P-23, published July 31, 2019, revision 2 (VM Second Patrol); TD-7106P-01, published May 12, 2020, revision 0 (EVM Pre-Inspection), Vegetation Management Specification NO. 5380, dated January 22, 2019 (VC Spec 5380); and VC Desktop Reference Tool, revised February 2019. PG&E confirmed via its response to DR 120, question 10 that the listed protocols were used in 2021.

<sup>76</sup> PG&E's 2021 WMP Update, page 693.

Routine Patrol procedure directs pre-inspectors and tree crews to verify radial clearances and MDRs,<sup>77</sup> as well as identify dead, dying and declining trees.<sup>78</sup> Energy Safety reviewed Routine Patrol inspection dates (shown as a range between the earliest and the latest inspection date) during 2021 and the number of trees inspected per circuit under this program.<sup>79</sup> Energy Safety also reviewed PG&E's geospatial 2021 Quarterly Data Reports (QDRs) showing trees inspected per Routine Patrol including tree species, tree size, location, and prescription (i.e., clearance).<sup>80</sup> Therefore, Energy Safety's audit found PG&E provided information consistent with the completion of the work identified in this statement regarding Routine Patrol inspections.

PG&E's 2021 WMP Update continues by stating its Mid-cycle Patrols occur primarily within HFTD areas and occur "approximately six months before or after the routine patrol on all overhead primary and secondary distribution facilities to maintain radial clearance between vegetation and conductors by identifying trees that will encroach within the MDRs required by law or PG&E procedures and by identifying dead, dying and declining trees that have the potential to strike the conductors."<sup>81</sup> Energy Safety's review of PG&E's Mid-cycle Patrol procedure showed it directs pre-inspectors and tree crews to identify issues with MDRs and dead, dying, and declining trees approximately six months after Routine Patrols and in HFTD areas.<sup>82</sup> Energy Safety reviewed a spreadsheet of the Routine Patrol dates and Mid-cycle Patrol inspection dates (shown as a range between the earliest and the latest inspection date) in 2021, showing Mid-cycle Patrol inspections typically occurred between three and nine months, or approximately six months, before or after Routine Patrol inspections.<sup>83</sup> Additionally, these patrols were primarily in HFTD areas. Some inspection dates were similar or the same between the programs, but Energy Safety understands this is a result of some circuits being many miles long leading to the appearance of overlapping programs when in fact the programs inspect in two different areas of the same circuit at the same time. Therefore, Energy Safety's audit found PG&E provided information consistent with the completion of the work identified in this statement regarding Mid-cycle Patrols.

The third program under this initiative per PG&E's 2021 WMP Update is the EVM program. PG&E's 2021 WMP Update states that "EVM patrols occur on specific line sections, based on risk, within HFTD Tier 2 and Tier 3."<sup>84</sup> During 2021 and 2022, Energy Safety collaborated with the CPUC while PG&E was under Enhanced Oversight and Enforcement for its lack of risk-

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<sup>77</sup> Response to DR050-QDR SOP-20211108, TD-7102P-01, published October 27, 2015, revision 1, pages 3 and 6.

<sup>78</sup> Response to DR050-QDR SOP-20211108, TD-7102P-01, published October 27, 2015, revision 1, page 8.

<sup>79</sup> DR-120, response to question 11, DRU11610\_Q011\_Atch01.xlsx.

<sup>80</sup> Per an email between Energy Safety and PG&E on May 16, 2022, VMP IDs that start with "VM" indicate Routine Patrol points in the geospatial 2021 QDRs.

<sup>81</sup> PG&E's 2021 WMP Update, page 693.

<sup>82</sup> Response to DR050-QDR SOP-20211108, TD-7102P-23, published July 31, 2019, revision 2, pages 3, 4 and 10.

<sup>83</sup> DR-120, response to question 12, DRU11610\_Q012\_Atch01.xlsx.

<sup>84</sup> PG&E's 2021 WMP Update, pages 693 and 694.

prioritization of its EVM program in 2020.<sup>85</sup> During the EOE process, Energy Safety reviewed PG&E's Corrective Action Plans submitted every 90 days which showed circuits under EVM being prioritized based on risk. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding EVM program being based on risk and HFTD.

PG&E's 2021 WMP Update continues by stating that, "EVM patrols include a tree assessment of all trees with the potential to strike the facilities."<sup>86</sup> See Section 7.15.1 where Energy Safety analyzes a similar statement in initiative 7.3.5.15.

In its 2021 WMP Update, PG&E states it will "work on approximately 1,800 circuit miles for the EVM program."<sup>87</sup> During the EOE process, Energy Safety reviewed PG&E's Corrective Action Plans submitted every 90 days which showed the number of circuit miles completed under the EVM program. PG&E's Corrective Action Plan submitted in early 2022 provided a year-end summary of the circuits and the miles of EVM work completed, totaling 1895.09 miles.<sup>88</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding targeting and completing 1,800 miles of EVM in 2021.

Finally, PG&E's 2021 WMP Update states that the goal of the UDS program "is to leverage the Vegetation Risk Model... to identify sections of high-risk circuit protection zones (CPZ) to identify projects for performing modification of vegetative fuels... Any projects identified outside the Vegetation Risk Model will be locations based on a combination of local knowledge and a cohesive strategy to work with CAL FIRE, US Forest Service (USFS), and municipalities on wildfire prevention initiatives."<sup>89</sup> Energy Safety reviewed a spreadsheet showing the locations of the UDS program in 2021 and the respective Vegetation Risk Model score.<sup>90</sup> There were thirteen projects under the UDS program in 2021. PG&E stated that the UDS program did not occur at locations outside of the Vegetation Risk Model.<sup>91</sup> Energy Safety's audit found PG&E provided information consistent with the UDS program locations being based on the Vegetation Risk Model.

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<sup>85</sup> <https://www.cpuc.ca.gov/industries-and-topics/pge/pge-oversight-and-enforcement> (accessed on May 3, 2023).

<sup>86</sup> PG&E's 2021 WMP Update, page 694.

<sup>87</sup> PG&E's 2021 WMP Update, page 694.

<sup>88</sup> PG&E's Corrective Action Plan 90-Day Report submitted on February 2, 2022, Attachment A: 2021 EVM Scope of Work – Year End Summary, Column 9: "Miles Complete and Verified as of 12/31/21 (Audited)."

<sup>89</sup> PG&E's 2021 WMP Update, page 695.

<sup>90</sup> DR-120, response to question 13, DRU11610\_Q013\_Atch01.xlsx.

<sup>91</sup> DR-120, response to question 13.

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

Based on the analysis above in Section 7.2.1, Energy Safety finds that PG&E provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.2: Detailed Inspections of Vegetation Around Distribution Electric Lines and Equipment.

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

The purpose of this initiative is “careful visual inspections of vegetation around the rights-of way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.”<sup>92</sup>

### 7.3.1 2021 WMP Update Statements, Supporting Information and Analysis

PG&E’s 2021 WMP Update describes its Routine NERC program as “LiDAR inspection, visual verification of findings, and mitigation of vegetation encroachments as well as other vegetation conditions on approximately 6800 miles of NERC Critical lines.”<sup>93</sup> PG&E continues by describing its Routine Non-NERC program as “LiDAR inspection, visual verification of findings, and mitigation of vegetation encroachments as well as other vegetation conditions on approximately 11,400 miles of transmission lines not designated as critical by NERC”<sup>94</sup> (non-NERC).<sup>95</sup>

To assess PG&E’s visual verification of findings (i.e., ground patrol inspections), Energy Safety reviewed PG&E’s 2021 NERC<sup>96</sup> and non-NERC<sup>97</sup> work requests that showed vegetation management prescriptions per transmission circuit. Energy Safety also reviewed a spreadsheet showing NERC and non-NERC LiDAR inspections,<sup>98</sup> visual verifications of the

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<sup>92</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>93</sup> PG&E’s 2021 WMP Update, page 697.

<sup>94</sup> PG&E’s 2021 WMP Update, page 697.

<sup>95</sup> In its 2021 WMP Update, PG&E similarly describes its LiDAR Routine program in initiative 7.3.5.8 but represents the target differently. As PG&E presents these two initiatives separately in its 2021 WMP Update and represents the targets differently, Energy Safety’s treated these as separate targets and conducted individual analyses.

<sup>96</sup> DR-120, response to question 15a, DRU11610\_Q015\_Atch01\_CONF.pdf.

<sup>97</sup> DR-120, response to question 15b, DRU11610\_Q015\_Atch02\_CONF.pdf.

<sup>98</sup> DR-120, response to question 14, DRU11610\_Atch01\_Inspection Data.xlsx, tab “Question 14,” column D.

LiDAR findings (ground patrol completion dates),<sup>99</sup> and vegetation management work dates.<sup>100</sup> These documents demonstrated that PG&E completed approximately 6,565 miles of LiDAR inspections and work under the Routine NERC program in 2021,<sup>101</sup> or approximately 96.5% of its target, equating to 235 miles short of the target in the 2021 WMP Update. For non-NERC, PG&E completed approximately 11,193 miles of LiDAR inspections and work in 2021,<sup>102</sup> or approximately 98% of its target, equating to 207 miles short of the target in the 2021 WMP Update. In response to Energy Safety’s inquiry about the difference in miles inspected and miles targeted, PG&E explained that the inspected miles are “supported by attestation [from the LiDAR vendor] that all provided circuit miles have been flown.”<sup>103</sup> PG&E further explained that the difference between the target and the actual miles inspected were due to “minor differences in the geometry between [PG&E’s database] ETGIS and the real world (decommissioned, wires removed, and re-routed [Electric Transmission Line] ELTs [sic]) and... ETGIS will have slightly more mileage for circuits where there are conductors on two sides of the tower.”<sup>104</sup> When Energy Safety inquired to how many miles this difference amounted to, PG&E estimated “10-30 miles of annual changes to the system from decommissioning, reconductoring and tower replacements,”<sup>105</sup> and approximately 327 less miles for circuits with conductors on two sides of the tower compared to PG&E’s ETGIS records.<sup>106</sup> Taking into consideration PG&E’s explanation for differences between its database (ETGIS) and the “actual” miles in the field (amounting to at most 357 miles),<sup>107</sup> PG&E still failed to reach the targets of LiDAR flown for NERC and non-NERC lines in 2021 (as it was 442 miles short of its targets). Therefore, Energy Safety’s audit found PG&E did not provide information consistent with the completion of the work identified in this statement regarding its target for 2021.

In its 2021 WMP Update, PG&E states that its ROW Expansion program creates 20-foot corridors and “trees outside of the ROW that could fall and touch a PG&E line are inspected after initial ROW expansion activities conclude to assess any potential risks that may have developed as a result of the ROW clearing activities.”<sup>108</sup> PG&E’s target for this program was 200 miles in 2021, “prioritized based on wildfire risk, PSPS [Public Safety Power Shutoff]

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<sup>99</sup> DR-120, response to question 14, DRU11610\_Atch01\_Inspection Data.xlsx, column U.

<sup>100</sup> DR-120, response to question 14, DRU11610\_Atch01\_Inspection Data.xlsx, columns V and W.

<sup>101</sup> DR-120, supplemental response to question 14, DRU11610\_Q014\_Atch01\_VMDR-1869 Revised Data\_20230519.xlsx, sheet “Miles Pivot.”

<sup>102</sup> DR-120, supplemental response to question 14, DRU11610\_Q014\_Atch01\_VMDR-1869 Revised Data\_20230519.xlsx, sheet “Miles Pivot.”

<sup>103</sup> DR-120, response to question 14.

<sup>104</sup> DR-120, response to question 14.

<sup>105</sup> DR-166, response to question 1, DRU11910\_Energy Safety DR-166\_2021 SVM Audit\_OEIS\_001.pdf.

<sup>106</sup> DR-166, response to question 2, DRU11910\_Energy Safety DR-166\_2021 SVM Audit\_OEIS\_001.pdf.

<sup>107</sup> Sum of 30 miles of annual changes to the system and 327 miles of circuits with conductors on two sides of the tower.

<sup>108</sup> PG&E’s 2021 WMP Update, page 697.

frequency, historic outage performance and tree risk characteristics.”<sup>109</sup> Energy Safety reviewed PG&E’s procedural document used for this program in 2021,<sup>110</sup> and it shows the expanded clearances required, including 20 foot corridors or 10 foot clearances on either side of 115 kilovolt (kV) lines.<sup>111</sup> Additionally, PG&E’s quality control efforts for this program include field inspections to confirm the work was completed to PG&E’s standards.<sup>112</sup> Per PG&E’s supplemental response to DR-120, Energy Safety understands that this quality control program requires the identification of potential risks on the system.<sup>113</sup> To verify the completed miles for 2021, Energy Safety reviewed a spreadsheet of transmission lines inspected under the ROW Expansion program which included the circuit name, completed miles per HFTD Tier, inspection start and end dates, and the rationale for prioritizing the circuits.<sup>114</sup> PG&E listed its rationale for prioritizing each circuit as approval from PG&E’s Wildfire Risk Governance Steering Committee, which considers PSPS frequency and wildfire risk as part of its approval process.<sup>115</sup> The data showed PG&E inspected 216.20 miles in 2021.<sup>116</sup> Therefore, Energy Safety’s audit found PG&E provided documentation consistent with the ROW Expansion program as described in its 2021 WMP.

PG&E’s 2021 WMP Update describes that the ROW Expansion program treats the vegetation via chipping onsite “with an off-road-tracked chipper machine or masticated in place where it is reasonable to do so. Areas inaccessible to machinery have fuel treatments of lop and scatter.”<sup>117</sup> Energy Safety requested the vegetation treatment types, as well as examples of each of the slash management types described. PG&E responded that it does not currently “have slash management types as trim codes”<sup>118</sup> nor does it “track slash management methods by circuit name, date, or location.”<sup>119</sup> Furthermore, during a meeting with Energy Safety on August 1, 2023, PG&E reiterated that PG&E could not provide documentation such as work orders or quality control reviews showing vegetation treatment for the ROW Expansion program. Therefore, Energy Safety’s audit found PG&E did not provide information consistent with the completion of the work identified in this statement regarding the ROW Expansion program treating vegetation via chipping or lopping and scattering in 2021.

PG&E’s 2021 WMP Update continues by describing its IVM program as an “ongoing maintenance program designed to maintain cleared rights-of-way in a sustainable and

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<sup>109</sup> PG&E’s 2021 WMP Update, page 697.

<sup>110</sup> DR-120, response to question 16.

<sup>111</sup> Response to DR050-QDR SOP-20211108, TD-7103P-03, revision 2, published October 1, 2016, page 14.

<sup>112</sup> DR-120, supplemental response to question 16, DRU11610\_Q016\_Atch01\_Transmission VM Standard\_CONF.pdf, page 8.

<sup>113</sup> DR-120, supplemental response, DRU11610\_OEIS\_Data Request\_Energy Safety-DR-120\_Supplemental (1).pdf.

<sup>114</sup> DR-120, response to question 17, DRU11610\_Atch01\_Inspection Data.xlsx, sheet “Question 17.”

<sup>115</sup> PG&E’s 2021 WMP Update, page 934.

<sup>116</sup> DR-120, response to question 17, DRU11610\_Atch01\_Inspection Data.xlsx, sheet “Question 17”, sum of column J.

<sup>117</sup> PG&E’s 2021 WMP Update, page 697.

<sup>118</sup> DR-120, response to question 17.

<sup>119</sup> DR-120, response to question 18.



compatible condition by eliminating tall-growing and fire-prone vegetation and promoting low-growing, fire-resistant vegetation. Prioritization is based on aging of work cycles and evaluation of vegetation re-growth.”<sup>120</sup> Energy Safety reviewed PG&E’s IVM procedural document detailing the program’s IVM practices and procedures.<sup>121</sup> Additionally, Energy Safety reviewed a spreadsheet showing IVM inspections and work completed in 2021.<sup>122</sup> PG&E stated in a data request response that the program considered LiDAR “scores,” or vegetation conditions, and work history but did not formally document its prioritization of the IVM projects until 2022.<sup>123</sup> Therefore, Energy Safety cannot confirm that PG&E prioritized its IVM work based on aging of work cycles and evaluation of vegetation re-growth as described in the WMP. Consequently, Energy Safety’s audit found PG&E did not provide information consistent with the completion of the work identified in this statement regarding its prioritization of IVM work.

PG&E’s 2021 WMP Update states that its LiDAR mid-cycle inspection encompasses 80 to 100% of Tier 2 and Tier 3 HFTD transmission lines.<sup>124</sup> PG&E’s non-spatial fourth quarter QDR shows PG&E reported 5,519 miles of transmission lines in Tier 2 and Tier 3 HFTD.<sup>125</sup> Therefore, this 80% target equates to 4,415 miles of transmission lines in Tier 2 and Tier 3 HFTD. Energy Safety reviewed PG&E’s spreadsheet showing dates<sup>126</sup> and miles<sup>127</sup> of transmission inspections via LiDAR for the 2021 routine and mid-cycle programs. Energy Safety then reviewed the more granular mileage in the sheet titled “NERC & NON NERC SUMMARY w TIER,” and found PG&E inspected 5,231 miles of Tier 2 and Tier 3 under the mid-cycle program.<sup>128</sup> Therefore, Energy Safety’s audit found PG&E provided documentation to support completion of this target.

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<sup>120</sup> PG&E’s 2021 WMP Update, page 697.

<sup>121</sup> Response to DR050-QDR SOP-20211108, TD-7103P-04, revision 2, published October 1, 2016, pages 1, 5, and 6.

<sup>122</sup> DR-120, response to question 20a, DRU11610\_Atch01\_Inspection Data.xlsx, sheet “Question 20A.”

<sup>123</sup> DR-120, response to question 20a.

<sup>124</sup> PG&E’s 2021 WMP Update, page 697.

<sup>125</sup> PG&E’s 2021 fourth quarter QDR, revision 3, submitted on March 18, 2022, Table 8, sum of cells AE16, AF16, AE32, AF32, AE48, AF48.

<sup>126</sup> Response to DR-134, question 14, “DRU11655\_Q014\_Atch01\_VM 2021 Routine Delivery and Mid-cycle confirmation\_AKS20230419 (TVM Check).xlsx, sheet “DELIVERY SCHEDULE.”

<sup>127</sup> Response to DR-134, question 14, “DRU11655\_Q014\_Atch01\_VM 2021 Routine Delivery and Mid-cycle confirmation\_AKS20230419 (TVM Check).xlsx, sheet “NERC & NON NERC SUMMARY w TIER.”

<sup>128</sup> Response to DR-134, question 14, “DRU11655\_Q014\_Atch01\_VM 2021 Routine Delivery and Mid-cycle confirmation\_AKS20230419 (TVM Check).xlsx, sheet “NERC & NON NERC SUMMARY w TIER,” sum of mileages in columns “MC1” and “MC2” for Tiers 2 and 3.

### 7.3.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.3

Based on the analysis above in Section 7.3.1, Energy Safety finds PG&E did not perform all required work for initiative 7.3.5.3: Detailed Inspections of Vegetation Around Transmission Electric Lines and Equipment. See Section 8.1 of this audit for a list of corrective actions.

## 7.4 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 conduct vegetation management in advance of weather conditions that increase ignition probability and wildfire consequence.<sup>129</sup>

### 7.4.1 2021 WMP Update Statements, Supporting Information and Analysis

PG&E states in its 2021 WMP Update that tree work is prioritized based on risk to the PG&E facilities.<sup>130</sup> Priority 1 trees are trees that show immediate risks which require mitigation within 24 hours.<sup>131</sup> Priority 2 trees are trees that are within PG&E's minimum clearance requirements but not yet contacting the conductor.<sup>132</sup> Trees "pending Priority 2 work within the Red Flag Warning (RFW) area will be reviewed and reprioritized if determined necessary by the local PG&E VM Point of Contact."<sup>133</sup> Additionally, PG&E states that it uses its VM Priority Tag Procedure as part of this process.<sup>134</sup> Energy Safety reviewed patrol maps,<sup>135</sup> emails communicating patrol findings including priority designation,<sup>136</sup> and a spreadsheet showing circuits, tree locations and species, priority designation, when the trees were remediated, and the VM Points of Contact assigned to the trees. PG&E remediated 19 Priority 1 trees and 177 Priority 2 trees during RFW days in 2021.<sup>137</sup> The spreadsheet showed one Priority 1 tree that was inspected on May 10, 2021, but remediated two days prior on May 8, 2021.<sup>138</sup> Despite the one Priority 1 tree not following the programmatic order of operations, Energy Safety's

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<sup>129</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>130</sup> PG&E's 2021 WMP Update, page 702.

<sup>131</sup> PG&E's 2021 WMP Update, page 737.

<sup>132</sup> PG&E's 2021 WMP Update, page 737.

<sup>133</sup> PG&E's 2021 WMP Update, page 702.

<sup>134</sup> PG&E's 2021 WMP Update, page 702.

<sup>135</sup> DR-134, response to question 2, DRU11655\_Q002\_Atch01\_CONF.pdf and DRU11655\_Q002\_Atch02\_CONF.pdf.

<sup>136</sup> DR-134, response to question 2, DRU11655\_Q002\_Atch03\_CONF.pdf.

<sup>137</sup> DR-134, responses to questions 1c and 1d.

<sup>138</sup> DR-134, response to question 1a, "DRU11655\_Q001\_Atch01.xlsx," row 72.

audit found PG&E provided information consistent with Priority 1 and Priority 2 trees and the timing of remediation.

## 7.4.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.4

Based on the analysis above in Section 7.4.1, Energy Safety finds PG&E 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."

## 7.5 Initiative 7.3.5.5: Fuel Management and Reduction of "Slash" from VM Activities

The purpose of this initiative is 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>139</sup>

### 7.5.1 2021 WMP Update Statements, Supporting Information and Analysis

In its 2021 WMP Update, PG&E states that its UDS Program aims to remove dead fuels and "reduce, or adjust, live fuels to reduce the spread and intensity of fires associated with PG&E assets" with a goal to "create 'fire defense zones' to mitigate the spread of an ignition."<sup>140</sup> Additionally, the locations are based on the 2021 EVM high-risk circuits.<sup>141</sup> Finally, the 2021 WMP Update states that locations outside of those prioritized under EVM program would be based on local knowledge and a cohesive strategy with government agencies.<sup>142</sup> Energy Safety reviewed the protocol for this program which prescribed the adjustment of fuels to limit fire movement and intensity,<sup>143</sup> and the locations of the "fire defense zones" which were focused around poles as part of its EVM program in 2021. According to the spreadsheet provided, PG&E completely cleared approximately 2,900 poles under this program in 2021.<sup>144</sup> All the poles cleared were prioritized per PG&E's Vegetation Risk Model,<sup>145</sup> and therefore there were no additional poles cleared based on local knowledge and cohesive strategies.

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<sup>139</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>140</sup> PGE's 2021 WMP Update, page 704.

<sup>141</sup> PGE's 2021 WMP Update, page 704.

<sup>142</sup> PG&E's 2021 WMP Update, page 704.

<sup>143</sup> DR-134, response to question 3, DRU11655\_Q003\_Atch02\_TD-7109S\_CONF.pdf, pages 2 and 3.

<sup>144</sup> DR-134, response to question 3a, DRU11655\_Q003\_Atch01\_2021 UDS POLE DATA.xlsx and response to question 4a, DRU11655\_Q004\_Atch01.xlsx.

<sup>145</sup> DR-134, response to question 4b.

Consequently, Energy Safety’s audit found PG&E provided information consistent with the completion of the work identified in this statement regarding its UDS program.

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

Based on the analysis above in Section 7.5.1, Energy Safety finds PG&E provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.5: Fuel Management and Reduction of “Slash” from VM Activities.

## 7.6 Initiative 7.3.5.6: Improvement of Inspections

The purpose of this initiative is “identifying and addressing deficiencies in inspections protocols and implementation by improving training and the evaluation of inspectors.”<sup>146</sup>

### 7.6.1 2021 WMP Update Statements, Supporting Information and Analysis

PG&E’s 2021 WMP Update states that PG&E’s WV program “validates that 100 percent of vegetation work in EVM was completed to scope through an audit of all work performed.”<sup>147</sup> During 2021 and 2022, Energy Safety collaborated with the CPUC while PG&E was under Enhanced Oversight and Enforcement for its lack of risk-prioritization of its EVM program in 2020.<sup>148</sup> During the EOE process, Energy Safety reviewed PG&E’s Corrective Action Plans submitted every 90 days which showed circuits under EVM completed through the work verification process and the miles ready for work verification.<sup>149</sup> Furthermore, Energy Safety has read-only access to PG&E’s EVM ArcGIS program, using this, verified PG&E’s EVM workflow and confirmed that EVM circuits undergo WV assessments. Therefore, Energy Safety’s audit found PG&E provided information consistent with the completion of the work identified in this statement regarding WV validating 100% of the EVM work.

PG&E’s 2021 WMP Update continues by explaining that PG&E’s QV program assesses recently completed tree work against PG&E standards via sampling.<sup>150</sup> Energy Safety reviewed PG&E’s QV Vegetation Management Audit Procedure document which explained that the program

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<sup>146</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>147</sup> PG&E’s 2021 WMP Update, page 708.

<sup>148</sup> <https://www.cpuc.ca.gov/industries-and-topics/pge/pge-oversight-and-enforcement> (accessed on May 3, 2023).

<sup>149</sup> PG&E’s Corrective Action Plan 90-Day Report submitted on February 2, 2022, Attachment A: 2021 EVM Scope of Work – Year End Summary, Columns 9: “Miles Complete and Verified as of 12/31/21 (Audited)” and 11: “Miles Ready for Work Verification as of 12/31/21 (Unaudited).”

<sup>150</sup> PG&E’s 2021 WMP Update, page 708.

assesses for compliance with PG&E's standards and procedures.<sup>151</sup> Furthermore, Energy Safety reviewed a spreadsheet of all the QV audits completed in 2021.<sup>152</sup> The spreadsheet showed the reviews by program type, the dates the reviews started and completed, the number of locations assessed, and the number of findings per review.<sup>153</sup> Therefore, Energy Safety's audit found PG&E provided information consistent with the completion of the work identified in this statement regarding its QV program.

In its 2021 WMP Update, PG&E describes its QA program as the program to "estimate the work quality rate for the VM Process from pre-inspector (PI) to completion of tree work."<sup>154</sup> As a sample of this program, PG&E provided two QA audits from 2021.<sup>155</sup> The audits reviewed work from the pre-inspector stage to the tree trimming contractors in two different regions.<sup>156</sup> Therefore, Energy Safety's audit found PG&E provided information consistent with the completion of the work identified in this statement regarding its QA program.

Finally, PG&E's 2021 WMP Update states that PG&E develops "new training to support changes, such as assessing burned redwoods... and focused training on Priority Tags in response to procedure changes."<sup>157</sup> Energy Safety reviewed screen captures of the web-based training "Burned Redwood Evaluation"<sup>158</sup> and the "Priority Tag Tool"<sup>159</sup> courses developed in 2021. Furthermore, PG&E provided the training log showing course title, date of training, personnel type, and organization (contractor or PG&E personnel).<sup>160</sup> In 2021, 184 people (PG&E employees and contractors) completed the "Burned Redwood Evaluation" course and 2,473 people completed the "Priority Tag Tool" course.<sup>161</sup> Therefore, Energy Safety's audit found PG&E provided information consistent with the completion of the work identified in this statement regarding training support.

PG&E also stated in its 2021 WMP Update that it was "actively exploring fuel management in more detail to represent its risk reduction benefits and effectiveness.... Since this is a new program [UDS], PG&E continues to explore ways to provide an estimation of [Risk Spend Efficiency] RSE." Energy Safety reviewed a scientific study<sup>162</sup> PG&E used as a reference to

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<sup>151</sup> DR034-SVM3, response to question 1, OEIS\_DRU4313\_Q1\_Atch4\_Utility Procedure RISK-6301P-10\_Redacted.pdf, pages 1 and 4.

<sup>152</sup> DR-134, response to question 9, DRU11655\_Q009\_Atch01\_QVVM 2021 Completed Reviews.xlsx.

<sup>153</sup> DR-134, response to question 9, DRU11655\_Q009\_Atch01\_QVVM 2021 Completed Reviews.xlsx, sheet "Reviews Completed\_ALL."

<sup>154</sup> PG&E's 2021 WMP Update, page 708.

<sup>155</sup> DR-134, response to question 10, DRU11655\_Q010\_Atch01\_2021 QAVM Audits\_CONF.pdf

<sup>156</sup> DR-134, response to question 10, DRU11655\_Q010\_Atch01\_2021 QAVM Audits\_CONF.pdf, pages 4, 7, 8.

<sup>157</sup> PG&E's 2021 WMP Update, page 709.

<sup>158</sup> DR-134, response to question 11, DRU11655\_Q011\_Atch02\_Burned\_Redwood\_Evaluation\_WBT.png.

<sup>159</sup> DR-134, response to question 11, DRU11655\_Q011\_Atch01\_Priority\_Tag\_Tool\_WBT.png.

<sup>160</sup> DR-134, response to question 11, DRU11655\_Q011\_Atch03\_Transcript for VEGM - 9058\_9063 2021-2023 Completion Report.xlsx.

<sup>161</sup> DR-134, response to question 11.

<sup>162</sup> DR-191, response to question 2, DRU12275\_Q002\_Atch01.pdf.

inform the scope of a shaded fuel break program in 2021.<sup>163</sup> PG&E provided Energy Safety documentation showing it explored RSE values for this initiative.<sup>164</sup> Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding PG&E’s exploration of fuel management, its benefits and its RSE.

PG&E’s 2021 WMP Update continues by stating PG&E had “various Operations and Maintenance (O&M) agreements with state and federal land management agencies across our service territory (including USFS, NPS [National Parks Service], and California State Parks) which establish timelines to review PG&E O&M work.”<sup>165</sup> Energy Safety reviewed various O&M plans used in 2021 from NPS, USFS, California State Parks, and Bureau of Land Management.<sup>166</sup> These O&M plans included timelines for the agencies to review PG&E’s proposed work. Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding O&M agreements.

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

Based on the analysis above in Section 7.6.1, Energy Safety finds PG&E provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.6: Improvements of Inspections.

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

The purpose of this initiative is inspecting distribution rights-of-way using LiDAR.<sup>167</sup>

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<sup>163</sup> DR-191, response to question 2.

<sup>164</sup> DR-191, response to question 1, DRU12275\_Audit\_Substantial Vegetation Management (SVM) - 2021 WMP\_DR-191\_OEIS\_D002.pdf, DRU12275\_Q001\_Atch01.xlsm

<sup>165</sup> PG&E’s 2021 WMP Update, page 707.

<sup>166</sup> DR-191, response to question 3.

<sup>167</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).

### 7.7.1 2021 WMP Update Statements, Supporting Information and Analysis

PG&E's 2021 WMP Update states, "PG&E will pilot the use of LiDAR derived data as an additional layer of review for quality in Routine VM.... LiDAR and Remote Sensing Data is targeted toward distribution lines in HFTDs Tier 2 and Tier 3."<sup>168</sup> PG&E's 2021 WMP Update further explains that this pilot program would act as quality control for the Routine program's four-foot radial clearances.<sup>169</sup> Energy Safety reviewed a spreadsheet showing the results of this LiDAR program's application to Routine VM. In 2021, PG&E used ground-based LiDAR on 732.53 miles<sup>170</sup> of primarily Tier 2 and Tier 3 distribution, resulting in 1,278 detections<sup>171</sup> where vegetation encroached within the four-foot clearances.<sup>172</sup> PG&E explained that this LiDAR was collected approximately 30 days after the pre-inspector inspected the lines to detect vegetation encroachments.<sup>173</sup> Furthermore, PG&E's VM Technology team reviewed the encroachments and sent PG&E's Work Verification team to field review.<sup>174</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding PG&E's pilot of LiDAR as an additional layer of review for Routine VM encroachments.

In its 2021 WMP Update, PG&E explained that it would expand the pilot program described above for "a portion of our Routine VM program." As a sample of this, Energy Safety reviewed documentation showing the dates LiDAR detected encroachments, dates the inspectors verified whether the data was accurate, and the comments left by inspectors noting the actual clearances.<sup>175</sup> PG&E had three phases of the program: the first pilot phase described in the previous paragraph, the second phase of testing on three circuits,<sup>176</sup> and the third phase of expanding it on approximately eight additional circuits by the end of the year.<sup>177</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding PG&E's expansion of its LiDAR on the Routine VM program in 2021.

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<sup>168</sup> PG&E's 2021 WMP Update, page 710.

<sup>169</sup> PG&E's 2021 WMP Update, page 710.

<sup>170</sup> DR-134, response to question 12b, DRU11655\_Q012\_Atch01.xlsx, sum of column "F."

<sup>171</sup> DR-134, response to question 12b, DRU11655\_Q012\_Atch01.xlsx, sum of column "G."

<sup>172</sup> DR-134, response to question 12a.

<sup>173</sup> DR-134, response to question 12a.

<sup>174</sup> DR-134, response to question 12a.

<sup>175</sup> DR-134, response to question 13, DRU11655\_Q013\_Atch01\_LiDAR.xlsx, sheet "GBL\_Test."

<sup>176</sup> DR-134, response to question 13, DRU11655\_Q013\_Atch01\_LiDAR.xlsx, sheet "GBL\_Test."

<sup>177</sup> DR-134, response to question 13, DRU11655\_Q013\_Atch01\_LiDAR.xlsx, sheet "GBL\_Program."

## 7.7.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.7

Based on the analysis above in Section 7.7.1, Energy Safety finds PG&E 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.

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

The purpose of this initiative is to describe the electrical corporation’s methods for inspecting transmission rights-of-way using LiDAR.<sup>178</sup>

### 7.8.1 2021 WMP Update Statements, Supporting Documentation, and Analysis

PG&E’s 2021 WMP Update describes its Transmission VM Program as conducting “LiDAR inspections on 100 percent of PG&E’s Transmission System... as an integral first step of [its] routine program.”<sup>179</sup> PG&E’s 2021 WMP Update also has a different target stating at least 96 percent of its transmission system was planned for LiDAR inspections under “LiDAR Routine” work in 2021.<sup>180</sup> PG&E defines a LiDAR inspection date as “the date the data was gathered from the field, also known as the ‘acquisition date.’”<sup>181</sup> PG&E further explained that following the LiDAR inspection date, the LiDAR vendor processes the data and provides it to PG&E later.<sup>182</sup>

Energy Safety requested documentation supporting inspecting at least 96% of its transmission system, or 17,385.6 miles,<sup>183</sup> with LiDAR. PG&E provided supporting documentation in the form of a spreadsheet with circuit names, locations, dates, and miles of LiDAR flown. The documentation PG&E provided showed PG&E inspected approximately 17,758 miles of transmission line as part of its Routine LiDAR program.<sup>184</sup> Therefore, Energy

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<sup>178</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>179</sup> PG&E’s 2021 WMP Update, page 712.

<sup>180</sup> PG&E’s 2021 WMP Update, page 713, Table PG&E-7.3.5-4: 2021 Transmission LiDAR Inspections.

<sup>181</sup> PG&E’s supplemental response to DR-134, question 14, DRU11655\_OEIS\_EnergySafety-DR-134\_D004.pdf.

<sup>182</sup> PG&E’s supplemental response to DR-134, question 14, DRU11655\_OEIS\_EnergySafety-DR-134\_D004.pdf.

<sup>183</sup> DR-134, question 14, per the fourth quarter 2021 non-spatial QDR data, the number of transmission miles in PG&E’s territory equates to 18,110 miles. 96% of 18,110 equates to 17,385.6 miles.

<sup>184</sup> DR-134, supplemental response to question 14, DRU11655\_Q014\_Atch01\_VM 2021 Routine Delivery and Mid-cycle confirmation 12.20.2021 (v9).xlsx, sheet “ROUTINE SCHEDULE,” sum of column “O.”



Safety's audit found that PG&E was able to provide documentation consistent with the above target.

In its 2021 WMP Update, PG&E states that it targeted conducting LiDAR mid-cycle inspections on 80-100% of its Tier 2 and Tier 3 HFTD transmission system.<sup>185</sup> See Energy Safety's analysis of an identical statement made in initiative 7.3.5.3. Energy Safety's audit found that PG&E provided documentation to support completion of this target.

Finally, PG&E's 2021 WMP Update states that, "The Transmission VM team in collaboration with the PSPS team has developed a tree risk model, referred to as the 'LiDAR Risk Score Model.' This model calculates the relative risk of individual trees within the HFTD that have strike potential to a transmission conductor."<sup>186</sup> PG&E's 2021 WMP Update states that PG&E will "review subject matter expert input to make determinations on scoping or descoping of transmission lines prior to the PSPS events."<sup>187</sup> In a data request response, PG&E states that it consulted with various subject matter experts such as its Director of Vegetation Management Operations, its Vice President of Wildfire Safety and Public Engagement, its Senior Vice President Chief Risk Officer, and a third party consultant in 2021.<sup>188</sup> Energy Safety reviewed a presentation to PG&E's Wildfire Risk Governance Committee from 2021 authored by a subject matter expert,<sup>189</sup> and included other subject matter experts as contributors<sup>190</sup> on the descoping of transmission lines for PSPS events in 2021.<sup>191</sup> Energy Safety reviewed a map titled "PSPS VM2021 Tree Risk Scores Colgate-Alleghany (60kV)" which showed a transmission segment and individual trees with their accompanying LiDAR Risk Score,<sup>192</sup> ranging from 1 to 100. Therefore, Energy Safety's audit found that PG&E provided documentation consistent with the above statements.

## 7.8.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.8

Based on the analysis above in Section 7.8.1, Energy Safety finds PG&E performed all required work for initiative 7.3.5.8: LiDAR Inspections of Vegetation Around Transmission Electric Lines and Equipment.

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<sup>185</sup> PG&E's 2021 WMP Update, page 713.

<sup>186</sup> PG&E's 2021 WMP Update, page 713.

<sup>187</sup> PG&E's 2021 WMP Update, page 713.

<sup>188</sup> DR-191, response to question 4.

<sup>189</sup> DR-191, response to question 5, DRU12275\_Q005\_Atch01\_06.02.21 Wildfire Risk Governance Forum\_CONF.pdf, slide 1.

<sup>190</sup> DR-191, response to question 5.

<sup>191</sup> DR-191, response to question 5, DRU12275\_Q005\_Atch01\_06.02.21 Wildfire Risk Governance Forum\_CONF.pdf, slide 13.

<sup>192</sup> DR-134, response to question 15, DRU11655\_Q015\_Atch01\_2021\_Sample\_PSPS\_Model\_Risk\_Scores.png.

## 7.9 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 inspecting the distribution rights-of-ways and the adjacent vegetation that may be hazardous, which goes beyond the minimum standards in rules and regulations.<sup>193</sup>

### 7.9.1 2021 WMP Update Statements, Supporting Information and Analysis

Under this initiative, PG&E's 2021 WMP Update has the following statements similar to those analyzed by Energy Safety for initiative 7.3.5.2:

- “CEMA (also referred to as “mid-cycle”) inspections follow approximately six months after PG&E’s routine maintenance schedule. CEMA inspections are used to identify and mitigate conditions that have changed since the routine inspection and to address conditions that are not safe to leave unresolved until the next routine inspection.”<sup>194</sup>
- “VM performs a second inspection in many parts of our service territory, namely HFTDs, and SRAs that are at higher risk of tree mortality and/or wildfire risk, Federal Responsibility Areas, and Fire Hazard Severity Zones.”<sup>195</sup>

See Energy Safety’s assessment of these statements in Section 4.2 for initiative 7.3.5.2.

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

Based on the analysis of similar statements made in initiative 7.3.5.2, Energy Safety finds PG&E provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.9: Other Discretionary Inspection of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations.

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<sup>193</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>194</sup> PG&E’s 2021 WMP Update, page 714.

<sup>195</sup> PG&E’s 2021 WMP Update, page 714.

## 7.10 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 inspecting transmission rights-of-way to identify vegetation hazards.<sup>196</sup>

### 7.10.1 2021 WMP Update Statements, Supporting Information, and Analysis

PG&E's 2021 WMP Update, initiative 7.3.5.10: Other Discretionary Inspection of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandated by Rules and Regulations, directs readers to initiative 7.3.5.3.<sup>197</sup> Therefore, Energy Safety did not conduct a separate analysis for work performed for this initiative.

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

See Energy Safety's determination for initiative 5.3.5.3.

## 7.11 Initiative 7.3.5.11: Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment

The purpose of this initiative is to inspect distribution rights-of-way to identify obvious [vegetation] hazards.<sup>198</sup>

### 7.11.1 2021 WMP Update Statements, Supporting Information, and Analysis

PG&E's 2021 WMP Update states that "there is no specific program to perform 'patrols' around distribution lines unique from the inspections described in [initiative] 7.3.5.2."<sup>199</sup>

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<sup>196</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>197</sup> PG&E's 2021 WMP Update, page 717.

<sup>198</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>199</sup> PG&E's 2021 WMP Update, page 718.

Therefore Energy Safety did not conduct a separate analysis for work performed for this initiative.

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

See Energy Safety’s determination for initiative 5.3.5.2.

## **7.12 Initiative 7.3.5.12: Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment**

The purpose of this initiative is to inspect transmission rights-of-way to identify “obvious [vegetation] hazards.”<sup>200</sup>

### **7.12.1 2021 WMP Update Statements, Supporting Information, and Analysis**

PG&E’s 2021 WMP Update states, “there is no specific program to perform “patrols” around transmission lines unique from the inspections described in [initiative] 7.3.5.3.”<sup>201</sup> Therefore Energy Safety did not conduct a separate analysis for work performed for this initiative.

### **7.12.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.12.**

See Energy Safety’s determination for initiative 7.3.5.3.

## **7.13 Initiative 7.3.5.13: Quality Assurance/Quality Control of Inspections**

The purpose of this initiative is to audit completed vegetation work, including its input into “decision-making and related integrated workforce management processes.”<sup>202</sup>

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<sup>200</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>201</sup> PG&E’s 2021 WMP Update, page 719.

<sup>202</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

### 7.13.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PG&E states “The QA effort is designed to validate program effectiveness and to provide confidence that the desired outcomes, including regulatory goals, are met. QV samples inspections and tree work recently completed to provide competence that work was performed in accordance with PG&E standards.”<sup>203</sup> Additionally, the QA and QV audits are via physical inspections of sample locations.<sup>204</sup> Energy Safety reviewed documentation of Quality Assurance Vegetation Management Distribution’s audit procedures,<sup>205</sup> which included highlighted areas regarding program effectiveness and regulatory goals. In further detail, the procedures included assurance to compliance with required documentation (i.e., PG&E Vegetation Management Distribution Routine Patrol Procedure, Transmission Non-Orchard Routine Patrol Procedure) and legal requirements (i.e., California Public Utilities Commission General Order 95, Rule 35; Public Resource Codes 4293-4296), recording findings (i.e., if a tree is identified that it is less than 18 inches from high-voltage bare wire in an area subject to General Order 95, Rule 35 and does not exhibit signs of contact, then record the finding on the relevant datasheets) and determining if certain procedures meet the required criteria, and drafting audit reports with specific required sections. Furthermore, PG&E provided field guides<sup>206</sup> used by Quality Verification Vegetation Management personnel to evaluate whether inspection and tree work was performed in accordance with PG&E standards. Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding QA and QV audits.

PG&E’s 2021 WMP Update continues by stating that PG&E verifies “the work quality and compliance rate for all trees in the geographic area covered by an audit/review. QA is the program that estimates compliance while QV is more specific to work quality.”<sup>207</sup> Energy Safety reviewed a listing of QA audits<sup>208</sup> completed in 2021 which included the region/geographic area related to each audit, report publish date, and regulatory compliance percentage for each audit. Additionally, PG&E provided a listing of QV audits<sup>209</sup> completed in 2021 which included the review type, completion date, division, and status of each audit/review. Furthermore, PG&E provided Energy Safety with QA audit reports related to

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<sup>203</sup> PG&E’s 2021 WMP Update, page 720.

<sup>204</sup> PG&E’s 2021 WMP Update, page 720.

<sup>205</sup> DR-161, response to question 1, DRU11775\_Q001\_Atch01\_RISK-6301P-06 QA VM Audit Procedure\_CONF.pdf.

<sup>206</sup> DR-161, response to question 1, DRU11775\_Q001\_Atch03\_QV Field Guides 2021.zip.

<sup>207</sup> PG&E’s 2021 WMP Update, page 720.

<sup>208</sup> DR-161, response to question 2, DRU11775\_Q001\_Atch02\_QA Audit Progress 2021.xlsx.

<sup>209</sup> DR-161, response to question 2, DRU11775\_Q002\_Atch01\_QV\_2021 Completed Reviews Summary.xlsx.

Sacramento,<sup>210</sup> Humboldt,<sup>211</sup> and Fresno<sup>212</sup> divisions. Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding QA and QV audits.

In its 2021 WMP Update, PG&E stated it “uses the results of the QA Programs to identify and address compliance related issues through short-term corrective actions or long-term preventive actions.”<sup>213</sup> As a sample of this, Energy Safety reviewed short-term and long-term corrective actions issued by the QV program which were included in the Quality Control Database (QCD). The short-term and long-term corrective action documents included the date created, contractor, status, inspector comments, location, date corrected, corrected by, and additional comments resolving the action. The short-term corrective action plan example provided by PG&E had a creation date of January 1, 2021, and a response date of February 18, 2021. The short-term corrective action noted was to perform tree trimming in the Cachagua Community Park area with the Native Artifact Land Tribal Council present during the trimming.<sup>214</sup> The long-term corrective action plan example provided by PG&E had a creation date of October 4, 2021, and a completion date of January 10, 2022. The long-term corrective action was to have a contractor review locations and tailboard with pre-inspectors to ensure clearance was prescribed to maintain compliance for three to five years without affecting health and viability of the tree.<sup>215</sup> Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding short-term and long-term corrective actions.

PG&E’s 2021 WMP Update explains that “QV chooses the work they review by sampling, which generates review locations where work has been listed by inspectors and/or invoiced by tree crews. PG&E uses the results of QV Program Reviews to identify areas of work quality that need improvement as well as to take short term corrective actions.”<sup>216</sup> Energy Safety reviewed confidential documentation provided by PG&E which contained the results of tree work that was invoiced as work was completed. PG&E’s confidential document titled Location Detail Report<sup>217</sup> included the location, inspection item, root cause, tree details, work date, worked by, and comments identified during the inspection. Furthermore, Energy Safety reviewed a confidential document<sup>218</sup> which included trees that were prescribed work by

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<sup>210</sup> DR-161 Supplemental, response to question 1, DRU11775\_Q001\_Atch01\_2021 SA-2-1 Sacramento Bundle 2 Audit Final Report\_CONF.pdf.

<sup>211</sup> DR-161 Supplemental, response to question 1, DRU11775\_Q001\_Atch02\_2021 NC-2-1 North Coast Bundle 2 Audit Final Report\_CONF.pdf

<sup>212</sup> DR-161 Supplemental, response to question 1, DRU11775\_Q001\_Atch03\_2021 FR-1-1 Fresno Bundle 1 Audit Final Report\_CONF.pdf

<sup>213</sup> PG&E’s 2021 WMP Update, page 720.

<sup>214</sup> DR-161, response to question 3, DRU11775\_Q003\_Atch01\_Short-Term Corrective Action\_2021\_CONF.pdf

<sup>215</sup> DR-161, response to question 3, DRU11775\_Q003\_Atch02\_Long-Term\_Corrective Action\_2021\_CONF.pdf

<sup>216</sup> PG&E’s 2021 WMP Update, page 720.

<sup>217</sup> DR-161, response to question 4a, DRU11775\_Q004\_Atch04\_QV Tree Trim Audit Results\_CONF.pdf.

<sup>218</sup> DR-161, response to question 4a, DRU11775\_Q004\_Atch03\_QV Pre-Inspection Audit Results\_CONF.pdf.

inspectors. The Location Detail Report included the inspector associated with each location and the item inspected. To support whether QV Program Reviews identified areas of work quality that needed improvement, PG&E provided documents titled QV Tree Trim Corrective Action<sup>219</sup> and QV Pre-Inspection Corrective Action.<sup>220</sup> These documents included details of short-term corrective action plans for tree trimming and pre-inspection for fiscal year 2021. The tree trimming short-term corrective action plan included a red ironbark eucalyptus tree that needed to be trimmed, noting the tree was seven feet clear of bare wire with nine feet of growth. The response to the corrective action stated the tree had been trimmed and the date it was completed. The short-term pre-inspection corrective action plan included the address of the inspection, which noted that previously the PI was preventatively removing palms under lines with approval. The response to the corrective actions stated that communication was conducted with the PI and the practice was discontinued. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding QA and QV audits.

In its 2021 WMP Update, PG&E stated that “all mid-cycle reviews for 2021 will be in HFTD and SRA non-HFTD areas” for its QV program.<sup>221</sup> Energy Safety reviewed the QV Mid-Cycle Audit Summary spreadsheet<sup>222</sup> provided by PG&E, which included a listing of all mid-cycle reviews conducted from January through July 2021 for its QV program. The spreadsheet contained the audit reference number, project type, district, project name, High Fire Threat District (HFTD) or non-HFTD including the different tiers, and the responsibility area including State Responsibility Area (SRA) or Local Responsibility Area (LRA). Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding mid-cycle reviews.

In its 2021 WMP, PG&E states, “the Quality Management Team has developed an annual audit plan based on Key Enterprise Risk. Key Enterprise Risk is compiled by Internal Audit and shared with Quality Management. Findings from the audits are shared with the line of business (LOB) leadership for corrective action.”<sup>223</sup> Energy Safety reviewed Quality Management Vegetation QA and Vegetation QV audit plans<sup>224</sup> for 2021 provided by PG&E. These audit plans included the Key Enterprise Risk, the audit/review type, and the status of each audit. Furthermore, PG&E provided the Quality Management Vegetation QA and Vegetation QV audit plans for 2022 that confirm Quality Management developed an audit plan for 2022. Energy Safety also reviewed the 2022 audit plans<sup>225</sup> to verify that PG&E took corrective action for Key Enterprise Risks noted in the 2021 audits/reviews. For findings

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<sup>219</sup> DR-161, response to question 4b, DRU11775\_Q004\_Atch01\_QV Tree Trim Corrective Action\_CONF.pdf.

<sup>220</sup> DR-161, response to question 4b, DRU11775\_Q004\_Atch02\_QV Pre-Inspection Corrective Action\_CONF.pdf.

<sup>221</sup> PG&E's 2021 WMP Update, page 721.

<sup>222</sup> DR-161, response to question 5. DRU11775\_Q005\_Atch01\_QV\_MidCycle\_Audit\_Summary\_2021.xlsx

<sup>223</sup> PG&E's 2021 WMP Update, page 721.

<sup>224</sup> DR-161, response to question 6a, DRU11775\_Q006\_Atch01\_QM QVVM QAVM 2021 Plan.xlsx.

<sup>225</sup> DR-161, response to question 6b, DRU11775\_Q006\_Atch02\_QM QVVM QAVM 2022 Plan.xlsx.

shared with the LOB leadership for corrective action, PG&E provided the 2021 Audit Exit Presentation,<sup>226</sup> which identified the leadership attendance and the findings associated with each completed audit. An example of the information provided in the Audit Exit Presentation includes the Vegetation Quality Verification results for the first of two 2021 Transmission Orchard focus reviews. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding QA and QV audits.

PG&E's 2021 WMP Update states that PG&E's "Veg QA and QV teams will conduct approximately 2,000 audits/reviews."<sup>227</sup> Energy Safety reviewed a file listing the 2021 QA completed audits.<sup>228</sup> Per review of the document, Energy Safety noted that PG&E completed a total of 44 QA audits during fiscal year 2021. Furthermore, PG&E provided documentation listing completed 2021 QV audits.<sup>229</sup> Energy Safety noted that there was a total of 2,098 QV audits completed during 2021. From the documentation provided, Energy Safety was able to determine that there was a total of 2,142 QA and QV audits performed in 2021. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding QA and QV audits.

In its 2021 WMP Update, PG&E stated that "Quality Management Veg QA and Veg QV are beginning to use Survey123/Collector to perform audits/reviews."<sup>230</sup> As a sample of this, Energy Safety reviewed Survey123 data output documentation for Quality Assurance and Quality Verification.<sup>231</sup> Survey123 is a product used to manage surveys, view and analyze data, and create reports. PG&E only used Survey123 during 2021 to collect data on performance audits/reviews. The Survey123 data output was actual outputs from the system and included survey responses, audit results, and inquiries related to each audit.<sup>232</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding QA and QV audits.

PG&E's 2021 WMP Update states that PG&E's Work Verification program follows the following steps:

- a) A Work Verification order is sent to the team performing EVM work on a line segment to ensure work is completed by both Pre-Inspectors and Tree crews b) Work verification personnel go to the field and verify that each EVM work checkpoint is completed. Work verification personnel collect data in the field

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<sup>226</sup> DR-161, response to question 6d, DRU11775\_Q006\_Atch03\_2021Audits\_ExitPresentations\_CONF.pdf

<sup>227</sup> PG&E's 2021 WMP Update, page 721.

<sup>228</sup> DR-161, response to question 7, DRU11775\_Q007\_Atch01\_QA\_Audits\_Completed\_2021.xlsx.

<sup>229</sup> DR-161, response to question 7, DRU11775\_Q007\_Atch02\_QV\_Audits\_Completed\_2021.xlsx.

<sup>230</sup> PG&E's 2021 WMP Update, page 721.

<sup>231</sup> DR-161, response to question 8.

<sup>232</sup> DR-161, response to question 8, DRU11775\_Q008\_Atch02\_2021\_QA\_VC-1-1 Survey123 Export WE 12-11-21.xlsx



and enter it into the collector tool as part of a survey. c) All correlated points and surveys are reviewed by algorithmic scripts (computer coded directions) to ensure data integrity and completeness. d) Once the script (computer coded directions) reviews the data, the segment is passed or failed in the collector tool so that operations has increased visibility.<sup>233</sup>

As a sample of this process, Energy Safety reviewed Work Verification Pass Segment Reports for Quarter 3 and Quarter 4 of 2021. PG&E noted that prior to Quarter 3 of 2021, data was collected annually, not quarterly; therefore, PG&E could not provide the requested data for Quarter 1 and Quarter 2 of 2021. The reports provided by PG&E included the work verification (WV) order for a line segment completed by pre-inspectors and tree crews, the work verification personnel collecting data at each EVM work checkpoint, the correlated points and surveys that were reviewed by algorithmic scripts to ensure data integrity and completeness and the results of script review for the segment (pass or fail). Although PG&E was unable to provide the documentation for Quarter 1 and Quarter 2, Energy Safety was able to determine the work was performed from the support provided for Quarter 3 and Quarter 4 of 2021. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding the Work Verification program.

PG&E's 2021 WMP Update explains that "in 2020, PG&E shifted the work model in our routine program to give contractors more autonomy to perform work with the goal of improving their efficiency. Since there is more contractor autonomy involved, PG&E took a proactive approach to check a higher percentage of the vendor work to ensure the work quality meets PG&E's standards."<sup>234</sup> PG&E further describes this autonomy in its data request response *DRU11775\_Energy Safety DR-161\_2021 SVM Audit\_Data Request\_OEIS*,

"Prior to the transition to the Defined Scope model, Distribution Routine work was performed on a unit price basis with PG&E responsible for contracting and coordinating both pre-inspection and tree crew work. The shift in the Defined Scope model now assigns responsibility for compliance of circuit bundles, including both pre-inspection and tree work, to the contractors. Contractors were given ownership of the vegetation risk on assigned circuits. Because contractors were responsible for both pre-inspection and tree work, they were given the autonomy to implement these work activities as they saw fit. PG&E previously took responsibility of coordinating both pre-inspector and tree work; and the autonomous nature of allowing contractors to plan pre inspection and tree work allowed vendors to set their schedules allowing them to efficiently operate their teams."<sup>235</sup>

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<sup>233</sup> PG&E's 2021 WMP Update, pages 721-722.

<sup>234</sup> PG&E's 2021 WMP Update, page 722.

<sup>235</sup> DR-134, response to question 10a and 10b.

As a sample of this, Energy Safety reviewed documentation listing the 2021 WV miles for Distribution HFTD, and the 2021 WV miles for EVM.<sup>236</sup> The documentation provided by PG&E indicated that the WV team performed work on 1,878 EVM miles in 2020; while in 2021 the WV team performed work on 1,983 EVM miles as well as 3,050 miles of distribution HFTD for a total 5,033 miles that went through work verification. From the information obtained from PG&E, Energy Safety noted that PG&E performed work verification on more miles in 2021 compared to 2020. Furthermore, because Energy Safety understands that in 2020 PG&E's routine distribution program did not have WV as this program was only used for EVM in 2020,<sup>237</sup> PG&E checked a higher percentage of vendor work in 2021 compared to 2020. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding its Work Verification program.

### **7.13.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.13**

Based on the analysis above in Section 7.13.1, Energy Safety finds PG&E 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.

## **7.14 Initiative 7.3.5.14: Recruiting and Training of Vegetation Management Personnel**

The purpose of this initiative is to “identify and hire qualified vegetation management personnel” and to ensure they are “adequately trained to perform vegetation management work, according to the utility's wildfire mitigation plan, in addition to rules and regulations for safety.”<sup>238</sup>

### **7.14.1 2021 WMP Update Statements, Supporting Information, and Analysis**

PG&E's 2021 WMP Update states that PG&E uses its “Pre-Inspector basics Structured Learning Path (SLP) to provide specific, well-defined training related to the work being performed.”<sup>239</sup> Energy Safety reviewed the PI Structured Learning Path Summary sheet utilized in 2021, which lists 14 relevant trainings taken by pre-inspectors including contractor safety, fire danger precautions, and records and information management. The SLP is completed and tracked in the MyLearning Application which requires the user to complete each training in

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<sup>236</sup> DR-134, response to 10d.

<sup>237</sup> PG&E's 2020 WMP, page 5-191.

<sup>238</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

<sup>239</sup> PG&E's 2021 WMP Update, page 724.

order.<sup>240</sup> Therefore, Energy Safety’s audit found PG&E provided information consistent with the completion of the work identified in this statement regarding training.

PG&E’s 2021 WMP Update states, “Prior to identifying the most effective contract vendors we ensure the vendor is appropriate to perform the scope of work identified and we validate the vendors’ safety presence in the industry.”<sup>241</sup> In response to Energy Safety’s request for supporting documentation showing PG&E ensured vendors were appropriate, PG&E stated “Contractors must have 2 years of Vegetation Management experience to be invited to the RFP. During the RFP, suppliers submit answers to a technical questionnaire which is then scored by VM subject matter experts.”<sup>242</sup> Although PG&E did not issue a solicitation for contract vendors in 2021 which required the technical questionnaire to be completed, PG&E did provide a sample of the technical questionnaire developed in 2021. . PG&E utilizes ISNetworld to validate its vendors’ safety presence in the industry. ISNetworld is the platform used by ISNetworld and serves as a forum for sharing industry best practices, benchmarking performance, providing data insights among its members, and ensuring contractor and supplier risk is assessed and monitored. PG&E provided Energy Safety with a snapshot of the ISNetworld output.<sup>243</sup> The output provides suppliers’ scores on a number of metrics including experience, training, driver safety among others. ISNetworld aggregates scores from all categories to determine the supplier grade from A to F. Suppliers must obtain an A or B rating<sup>244</sup> within ISNetworld at the time of award, as well as maintaining an A or B rating for the duration of the contract. Therefore, Energy Safety’s audit thAat found PG&E provided information consistent with the completion of the work identified in this statement regarding contracting.

In its 2021 WMP Update, PG&E states that its training “provides personnel with an opportunity to earn continuing education credit that can be used towards obtaining certification.”<sup>245</sup> The statement continues by saying the educational partnerships gives PG&E’s employees and contractors “a direct path of obtaining certification.”<sup>246</sup> As a sample of these training courses and pathways, Energy Safety reviewed a screenshot of a PG&E Vegetation Management Inspector’s (VMI) Continuing Education Unit (CEU) Report<sup>247</sup> as provided through the VMI’s International Society of Arboriculture (ISA) login. The report detailed 30 CEUs the individual earned in 2021. Further, in support of a “direct pathway”

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<sup>240</sup> DRU11775\_Q011\_Atch01\_VMDR-2007\_SLP Checklist.pdf

<sup>241</sup> PG&E’s 2021 WMP Update, page 725.

<sup>242</sup> DR-161, response to question 12b.

<sup>243</sup> DR-161, response to question 12c, DRU11775\_Q012\_Atch01\_Nates Tree Service ISN Grade A 03.15.23\_CONF.pdf.

<sup>244</sup> ISNetworld issue ratings from A to F, with A being the highest rating and F being the lowest rating.

<sup>245</sup> PG&E’s 2021 WMP Update, page 725.

<sup>246</sup> PG&E’s 2021 WMP Update, page 725.

<sup>247</sup> DR-161, response to question 13a.

toward certification, PG&E provided an example Letter of Agreement (LA 21-28-PGE)<sup>248</sup> between International Brotherhood of Electrical Workers (IBEW) and PG&E that specifies that Vegetation Management Inspectors will be provided the opportunity, at PG&E's cost, for up to two attempts to obtain certifications including the Certified Tree Safety Professional (CTSP), and Certified Arborist (CA) with a Tree Risk Assessment Qualification from the International Society of Arboriculture. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

PG&E's 2021 WMP Update continues by stating it provides "full-tuition scholarships to the Utility Vegetation Management (UVM) certificate offered through University of Wisconsin-Stevens Point.... This is an on-line training program comprised of six, 12-week courses completed over two years... These courses are funded through 2022."<sup>249</sup> Energy Safety reviewed the UVM Scholarship Agreement,<sup>250</sup> signed on September 23, 2020, with a payment schedule providing funds into 2022. A total of 221 scholarships were awarded to help defray the costs of 15 different training courses during 2021. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

In its 2021 WMP Update, PG&E states it "will fund the digitization of course material to make material available online and to significantly reduce out of pocket cost for students currently purchasing hard copies of materials." Energy Safety reviewed an email correspondence<sup>251</sup> between the Utility Arborist Association (UAA) Operations Manager and PG&E in which the UAA thanked PG&E for funding the digitization of best management practice (BMP) course materials, including Closed Chain Custody, Utility Pruning, and Tree Risk Assessments. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

PG&E's 2021 WMP Update states "All Pre-inspectors are required to pass inspection assessments with a score of 100 percent... [PG&E] work[s] with pre-inspectors until they are able to pass, and pre-inspectors can only pass when they get 100%."<sup>252</sup> PG&E's 2021 WMP Update also states that "Embedded within each training is a knowledge check for the module to ensure the VM personnel fully understand the course material. All personnel are required to complete each knowledge check with a score of 100% before moving on to the next training course."<sup>253</sup> Energy Safety reviewed the Vegetation Management Skill Assessment for

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<sup>248</sup> DR-161, response to question 13b.

<sup>249</sup> PG&E's 2021 WMP Update, pages 725-726.

<sup>250</sup> DR-161, response to question 14b, DRU11775\_Q014\_Atch05\_UVM Scholarship Agreement\_CONF.pdf.

<sup>251</sup> DR-161, response to question 14c

<sup>252</sup> PG&E's 2021 WMP Update, page 726.

<sup>253</sup> PGE's 2021 WMP Update, page 729.

Pre-Inspector Basics training module<sup>254</sup> provided by PG&E. The module stated on multiple instances that 100% of the questions need to be answered correctly to receive a passing score. A total of 1,550 Pre-inspectors (contract and full-time employees) passed the Vegetation Management Skill Assessment for Pre-Inspector Basics training module in 2021.<sup>255</sup> In addition, PG&E provided its Vegetation Management Software Access Flowchart<sup>256</sup> which depicts the order the trainings are required to be taken. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

In its 2021 WMP Update, PG&E states its "WV team consists of about 90% ISA certified arborists. The other 10% of the team consists of individuals who are experienced in extensive forestry and/or utility line clearance work."<sup>257</sup> Energy Safety reviewed a roster of the WV team<sup>258</sup> from March 2021, a month after PG&E submitted its 2021 WMP Update. The team roster showed that 48 out of 55 employees were ISA Certified Arborists and the remaining 7 employees had extensive experience in related fields. At the end of 2021, the external Work Verification team through Atlas<sup>259</sup> consisted of 211 Work Verifiers, with 104 (approximately 49%) of them ISA Certified Arborists. As a result, PG&E did not maintain the 90% ISA certified arborists on the WV team throughout the course of the year. Therefore, Energy Safety's audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding the number of ISA certified arborists.

PG&E's 2021 WMP Update states,

All personnel... excluding Vegetation Control (VC), are referred to collectively as "Pre-Inspectors" and are enrolled in the Pre-Inspector Structured Learning Path (SLP) to track their initial VM training. SLP initial VM Program training is contained in the following courses: VEGM 0101, VEGM 0102, VEGM 0103, VEGM 0104, VEGM 0105, VEGM 0106, VEGM 0107, VEGM 0108, and VEGM 0109. A final test assessment is included in VEGM 0110... VC personnel take VEGM-0302 and VEGM-0303 for Vegetation Control.<sup>260</sup>

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<sup>254</sup> DR-161, response to question 16a, DRU11775\_Q016\_Atch01\_VEGM-0110WBT - Skill Assessment for PreInspector Basics v1.0.pdf.

<sup>255</sup> DR-161, response to question 16b.

<sup>256</sup> DR-161, response to question 16c, DRU11775\_Q016\_Atch02\_VM Software Training Requirements Flowchart and MyLearning Guide\_20210713\_CONF.pdf.

<sup>257</sup> PG&E's 2021 WMP Update, page 727.

<sup>258</sup> DR-161, response to question 17, DRU11775\_Q017\_Atch01\_WV 2021 Certified Arborists\_CONF.xlsx.

<sup>259</sup> Atlas is a third-party vegetation management consulting firm providing inspection and work verification services.

<sup>260</sup> PG&E's 2021 WMP Update, pages 727-728.

PG&E states that VC inspectors are not referred to as pre-inspectors to differentiate between inspections of different functional areas.<sup>261</sup> VC inspects poles and equipment while Vegetation Management inspects vegetation. VC inspectors are referred to as Technicians. PG&E provided a list of five (5) Technicians that completed VEGM-0302 and VEGM-0303 in 2021.<sup>262</sup>

PG&E provided its contract<sup>263</sup> with a contractor used for vegetation management in 2021. The contract listed required employee trainings in Exhibit A – Qualifications and Labor Classifications, and the SLP training was listed as a required training. Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

PG&E’s 2021 WMP Update states,

All VM personnel, including VCs, are also profiled for Environmental training. The initial training curriculum for VM resources includes the following environmental courses: ENVR-0070, ENVR-9090, ENVR-9091, ENVR 220, ENVR-0402, and ENVR-9032. These trainings are due to be completed within 90 days of being profiled and receiving a LAN ID.<sup>264</sup>

PG&E stated that for each of these classes, the Training Requirement Record (TRR) identifies an “Initial Timing Window” of 90 days, indicating that the class must be completed within 90 days of being assigned to an employee. The PG&E Academy Database is not set up to track employee start dates in relation to when they were profiled to complete the assigned courses. The PG&E MyLearning system is set up to enforce the 90-day timeline through the Training Timeliness Dashboard. Vegetation Management Managers were responsible for checking and making sure their employees completed trainings within the specified timeframe.<sup>265</sup> Vegetation Management managers would be alerted to employees who did not complete the training within 90 days of course assignment through a ‘red alert’ from the Training Timeliness Dashboard, which meant that an employee was out of compliance with the required training window.<sup>266</sup> Additionally, PG&E provided a report generated from the Training Timeliness Dashboard data that tracked employee’s progress for each assignment against the 90-day timeframe.<sup>267</sup> Therefore, Energy Safety’s audit found that PG&E provided

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<sup>261</sup> DRU11775\_Energy Safety DR-161\_2021 SVM Audit\_Data Request\_OEIS - Response to Question No. 018 Response No. 001.pdf

<sup>262</sup> DR-184, response to question 1c, DRU12177\_Q001c\_Atch01\_VEGM 0302 and 0303\_CONF.xlsx.

<sup>263</sup> DR-161, response to question 18, DRU11775\_Q018\_Atch01\_FE CCO9 MSA C20975 DTS and DRG - PI and Name Change\_CONF.pdf.

<sup>264</sup> PG&E’s 2021 WMP Update, page 728.

<sup>265</sup> DR-161, response to question 19.

<sup>266</sup> DRU11775\_Energy Safety DR-161\_2021 SVM Audit\_Data Request\_OEIS - Response to Question No. 019 Response No. 001.pdf

<sup>267</sup> DR-184, response to question 2b, DRU12177\_Q002b\_Atch02\_MSR\_109 TRAINING\_ASSIGNMENTS\_CONF.xlsx

information consistent with the completion of the work identified in this statement regarding training.

In its 2021 WMP Update, PG&E states, “The [Vegetation Program Managers] VPMs have a dashboard that allows them to track the progress of each learner that reports to them. The VPM can see updates as the learner completes each course of the SLP.”<sup>268</sup> Energy Safety reviewed a screenshot<sup>269</sup> of a dashboard available to a VPM for tracking a learner’s progress, who reports to them, through the SLP in 2021. Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

In its 2021 WMP Update, PG&E states, “After each training course is completed, results are automatically captured in PG&E’s learning management system, PG&E Academy, to track and verify completion of training. Each user has a unique identification in the system, and training data is tracked and retained even if the user leaves and later returns to a PG&E project.”<sup>270</sup> Energy Safety reviewed an Excel spreadsheet used by PG&E to track training records for personnel being tracked in 2021.<sup>271</sup> The records included in this spreadsheet were pulled from the PG&E Academy database displaying each individual’s unique identifier and results of the training. Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

PG&E’s 2021 WMP Update states “VM support will confirm completion of training before any individual is granted access to our VM database. If a subsequent audit of users with access shows missing training records, we will turn off their access until training is completed and confirmed.”<sup>272</sup> As a sample of this, Energy Safety reviewed communications from VM support to PG&E employees where the employee was denied access to the database until evidence of the required trainings being completed was provided.<sup>273</sup> Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

In its 2021 WMP Update, PG&E states it “anticipates adding program-specific courses for our Distribution and Transmission VM programs. These courses will include knowledge assessments with a passing threshold. We are currently wrapping up the EVM program requirements exam, which will be done in 2021.”<sup>274</sup> PG&E states in a data request response that it did not add Transmission VM courses in 2021.<sup>275</sup> PG&E did add VEGM-0410 (EVM Scope)

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<sup>268</sup> PG&E’s 2021 WMP Update, page 729.

<sup>269</sup> DR-161, response to question 20, DRU11775\_Q020\_Atch01\_CONF.pdf.

<sup>270</sup> PGE’s 2021 WMP Update, page 729.

<sup>271</sup> DR-161, response to question 22, DRU11775\_Q022\_Atch01\_Training Results.

<sup>272</sup> PGE’s 2021 WMP Update, page 729.

<sup>273</sup> DR-161, response to question 23.

<sup>274</sup> PG&E’s 2021 WMP Update, page 730.

<sup>275</sup> DR-161, response to question 24a.

as a Distribution VM course in 2021, for which PG&E provided a copy of the course outline. The knowledge assessment for this course required an 84% or higher to pass.<sup>276</sup> Energy Safety's audit found PG&E added a Distribution VM course with a passing threshold. However, due to PG&E not adding a Transmission VM course in 2021, Energy Safety's audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding training.

PG&E's 2021 WMP Update states, "As part of the SLP, once training is completed by the VM personnel listed in Table 5.4-1, excluding VC, a one-year audit tracking plan is initiated. These audits are completed by the Pre-Inspector's employer at the following intervals: Month 1, Month 3, Month 6, and Month 12. The Pre-Inspector's employer provides the results of the audit to PG&E for our review."<sup>277</sup> Energy Safety reviewed audits<sup>278</sup> provided and determined that they were conducted at the following intervals:

- 1 month – January 2021
- 3 months – March 2021
- 9 months – September 2021
- 12 months – December 2021

PG&E stated that these audits are to be conducted at 1-, 3-, 6-, and 12-month intervals, barring any constraints.<sup>279</sup> PG&E did not meet the requirement for the month 6 audit and instead completed the month 6 audit in month 9. Therefore, Energy Safety's audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding audit intervals.

In its 2021 WMP Update, PG&E states that "At the end of the SLP, the VPM will either approve the completion of the audit tracking in SLP if the employee is ready to work without the additional oversight of the contracting company or ask for additional audits, if needed."<sup>280</sup> Energy Safety reviewed a Checklist Status Report for the SLP report that showed VPM approvals of PI audit checks with dates spanning 2020 to 2021. PG&E stated in its response that the PI audit will remain open in SLP until the audit has been approved by the VPM.<sup>281</sup> In addition, PG&E stated that it does not document VPM requests for additional audits of contracted employees as a separate step in the process as it is expected that the VPM will not sign off until the audit process is complete.<sup>282</sup> Therefore, Energy Safety's audit found that

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<sup>276</sup> DR-161, response to question 24.

<sup>277</sup> PG&E's 2021 WMP Update, page 731.

<sup>278</sup> DR-161, response to question 25.

<sup>279</sup> DR-161, response to question 25.

<sup>280</sup> PG&E's 2021 WMP Update, page 731.

<sup>281</sup> DR-161, response to question 26.

<sup>282</sup> <sup>282</sup> DR-161, response to question 26.



PG&E provided information consistent with the completion of the work identified in this statement regarding training.

PG&E's 2021 WMP Update states "In 2021, we have been providing tree risk assessment qualification (TRAQ) training to current ISA Certified Arborists through the Western Chapter International Society of Arboriculture (WCISA)."<sup>283</sup> As a sample of this, Energy Safety reviewed e-mail correspondence from 2021 confirming that PG&E provided TRAQ training through the WCISA in 2021.<sup>284</sup> These trainings were held on April 12-14 in Concord, May 12-13 in Sacramento, and August 2-4 in Fresno. A total of 34 contractors completed the TRAQ training provided by PG&E in 2021.<sup>285</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

In its 2021 WMP Update, PG&E states it "has partnered with the IBEW and educational institutions, such as Butte Glenn Community College District, to establish a training program designed to provide the skills and knowledge necessary to perform tree crew work safely and competently. This Tree Crew Training Program provides both classroom and in-the-field instruction, which focuses on safety, climbing, and line clearance qualifications."<sup>286</sup> Energy Safety reviewed e-mail correspondence in 2020 between PG&E and educational institutions detailing establishing training programs.<sup>287</sup> PG&E provided additional documentation in the form of a PowerPoint presentation to show that Tree Crew Training Program was both field and classroom-based in 2021. Items listed in Modules 1-5 as "Hands-On" were completed at training work sites in the field. Lastly, the syllabus was provided for the Tree Crew Training to show a focus on safety, climbing and tree clearance qualifications.<sup>288</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

Additionally, PG&E's 2021 WMP Update states it "implemented a system in 2021 to better track this issue by adding ISA certification procedures during the onboarding processes. We then check with ISA to ensure the certification is current."<sup>289</sup> Energy Safety reviewed a copy of the onboarding form and determined that providing the ISA certification number on the form was required.<sup>290</sup> However, PG&E stated in a data request response that there is no formalized

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<sup>283</sup> PG&E's 2021 WMP Update, page 732.

<sup>284</sup> DRU11775\_Q027\_Atch01\_TRAQ coordination email\_Redacted.pdf

<sup>285</sup> DR-161, response to question 27.

<sup>286</sup> PG&E's 2021 WMP Update, page 732.

<sup>287</sup> DRU11775\_Q028\_Atch01\_Tree Trimming Course email confirmation\_Redacted.pdf

<sup>288</sup> DR-161, response to question 28.

<sup>289</sup> PG&E's 2021 WMP Update, page 733.

<sup>290</sup> DR-161, response to question 29.

process for PG&E to ensure the ISA certification is current.<sup>291</sup> Therefore, Energy Safety's audit found that PG&E did not provide information consistent with the above statement.

In its 2021 WMP Update, PG&E states its

“...newly formed VMI team interacts with contract field personnel daily on job sites and discusses expectations for all aspects of the VM program using the specific job site to direct conversations. The ratio of VMI to tree crews is approximately 1 to 20 (assuming an average tree crew size of 3 people). VPM, who are responsible for daily operations, interact with Pre-Inspectors when issues are identified to educate and correct behaviors.”<sup>292</sup>

Energy Safety reviewed one example per quarter of the observations from the daily site-visit check-ins.<sup>293</sup> In addition, Energy Safety reviewed employee rosters (headcounts) for both VMIs and tree crews for 2021.<sup>294</sup> While the total headcount will vary throughout the year, at the end of 2021, PG&E employed approximately 2,383 tree crews (3-man crews) and 107 VMIs, a ratio of 1 VMI to 22 tree crews. Additional documentation was provided to support the approximately 1 to 20 ratio referenced above in the form of a monthly headcount tracking sheet. Lastly, Energy Safety reviewed a 2021 audit finding in PG&E's Quality Control Database in which VPM's utilize the database to document and assign corrective actions to PIs. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding VMI.

PG&E's 2021 WMP Update states that its “Safety training courses include SAFE-0101 and SAFE 1503. SAFE-0101 covers tools and resources for contractors to remain safe during PG&E work activities, and SAFE-1503 reviews key information in preventing and mitigating fires while performing PG&E work.”<sup>295</sup> Energy Safety reviewed the training materials for both courses and determined they covered the stated objectives.<sup>296, 297</sup> In 2021, 259 contractors completed SAFE-0101, and 235 contractors completed SAFE-1503.<sup>298</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding training.

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<sup>291</sup> DRU11775\_Energy Safety DR-161\_2021 SVM Audit\_Data Request\_OEIS - Response to Question No. 029 Response No. 001.pdf

<sup>292</sup> PG&E's 2021 WMP Update, page 733.

<sup>293</sup> DR-161, response to question 30.

<sup>294</sup> DRU11775\_Q030\_Atch05\_VMI\_TC Headcount\_Redacted

<sup>295</sup> PG&E's 2021 WMP Update, page 733.

<sup>296</sup> DRU11775\_Q031\_Atch01\_SAFE-0101WBT Corporate Contractor Safety Program v2.pdf

<sup>297</sup> DRU11775\_Q031\_Atch02\_SAFE-1503WBT v3.5.pdf

<sup>298</sup> DR-161, response to question 31.

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

Based on the analysis above in Section 7.14.1, Energy Safety finds PG&E did not complete all the required work for initiative 7.3.5.14: Recruiting and Training of Vegetation Management Personnel.

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

The purpose of this initiative is to “reduce ignition probability and wildfire consequences attributable to at-risk vegetation species....”<sup>299</sup>

### 7.15.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PG&E states that its “EVM program prioritization starting in 2021 is based on the Vegetation Risk Model, which is a risk-informed model that allows [PG&E] to prioritize our work at the Circuit Segment level.”<sup>300</sup> During the EOE process, Energy Safety reviewed PG&E's Corrective Action Plans submitted every 90 days which showed circuits under EVM being prioritized based on PG&E's Vegetation Risk Model. Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding EVM Program.

PG&E's 2021 WMP Update states, “Pre-inspectors evaluate trees using PG&E's TAT during inspections, which is a tool that evaluates an individual tree's likelihood of failing and indicates whether to abate the tree. TAT incorporates historical data on tree failures, regional species risk, and local wind gust data and assesses different components of an individual tree's health to determine the risk of falling into PG&E lines or equipment.”<sup>301</sup> PG&E's 2021 WMP Update also states that the “TAT assessment is performed on all trees with potential to strike facilities and trees worked according to the TAT according to the TAT result.”<sup>302</sup> During the EOE process, Energy Safety reviewed PG&E's TAT process and how it incorporated the above-mentioned parameters for assessing tree risk. Additionally, Energy Safety has read-only access to PG&E's EVM ArcGIS program. Energy Safety used access to this program to verify PG&E's use of the TAT during inspections at individual strike-potential trees. Furthermore, Energy Safety reviewed PG&E's training materials for its TAT.<sup>303</sup> Therefore,

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<sup>299</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

<sup>300</sup> PG&E's 2021 WMP Update, page 735.

<sup>301</sup> PG&E's 2021 WMP Update, page 735.

<sup>302</sup> PG&E's 2021 WMP Update, page 737.

<sup>303</sup> VEGM-0104WBT Tree Assessment Tool (TAT)\_CONF.pdf.

Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding how the TAT is described in the 2021 WMP Update.

PG&E’s 2021 WMP Update describes its Vegetation Management Priority Tag Procedure and that a “Priority 1 tag must be mitigated within 24 hours of identification when reported. A Priority 1 condition is a hazard that meets any of the following scenarios: The vegetation is in contact or showing signs of previous contact with a primary conductor. The vegetation is actively failing or at immediate risk of failing and could strike the facilities. The vegetation presents an immediate risk to the facilities.”<sup>304</sup> PG&E’s 2021 WMP Update describes Priority 2 tags as requiring mitigation within 30 days and consist of vegetation encroaching within minimum clearance requirements to the conductor but not in contact with the conductor.<sup>305</sup> Energy Safety reviewed PG&E’s Vegetation Management Priority Tag Procedure that described the above conditions for Priority 1 and Priority 2 trees.<sup>306</sup> Furthermore, Energy Safety reviewed patrol maps,<sup>307</sup> emails communicating patrol findings including priority designation,<sup>308</sup> and a spreadsheet showing circuits, tree locations and species, priority designation, when the trees were remediated, and the VM Points of Contact assigned to the trees. PG&E remediated 19 Priority 1 trees and 177 Priority 2 trees in 2021.<sup>309</sup> Therefore, Energy Safety’s audit found PG&E provided information consistent with the completion of the work identified in this statement regarding Vegetation Management Priority Tag.

In its 2021 WMP Update, PG&E set a target of conducting EVM on approximately 1,800 circuit miles in 2021.<sup>310</sup> During the EOE process, PG&E reported circuits completed under the EVM program.<sup>311</sup> PG&E completed approximately 1,895 miles of EVM in 2021. Therefore, Energy Safety’s audit found that PG&E provided information showing it conducted EVM on approximately 1,800 circuit miles in 2021.

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

Based on the analysis above in Section 7.15.1, Energy Safety finds PG&E 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>304</sup> PG&E’s 2021 WMP Update, page 737.

<sup>305</sup> PG&E’s 2021 WMP Update, page 737.

<sup>306</sup> TD-7102P-17, published 02/24/2021, page 2.

<sup>307</sup> DR-134, response to question 2, DRU11655\_Q002\_Atch01\_CONF.pdf and DRU11655\_Q002\_Atch02\_CONF.pdf.

<sup>308</sup> DR-134, response to question 2, DRU11655\_Q002\_Atch03\_CONF.pdf.

<sup>309</sup> DR-134, responses to questions 1c and 1d.

<sup>310</sup> PG&E’s 2021 WMP Update, page 736.

<sup>311</sup> PG&E’s Corrective Action Plan 90-Day Report submitted on February 2, 2022, Attachment A: 2021 EVM Scope of Work – Year End Summary, Columns 9: “Miles Complete and Verified as of 12/31/21 (Audited).”

## 7.16 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 “remediate trees that could potentially strike electrical equipment, if adverse events such as the failure at the ground-level of the tree or branch breakout within the canopy, occur.”<sup>312</sup>

### 7.16.1 2021 WMP Update Statements, Supporting Information, and Analysis

PG&E’s 2021 WMP Update, initiative 7.3.5.16, redirects readers to initiatives 7.3.5.2, 7.3.5.3, and 7.3.5.15.<sup>313</sup> Therefore Energy Safety did not conduct a separate analysis for work performed for this initiative.

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

See Energy Safety’s determination for initiatives 7.3.5.2, 7.3.5.3, and 7.3.5.15.

## 7.17 Initiative 7.3.5.17: Substation Inspections

The purpose of this initiative is to inspect “vegetation surrounding substations.”<sup>314</sup> Note that PG&E’s 2021 WMP split this initiative into sub-initiatives: 7.3.5.17.1: Substation Inspections, Distribution and 7.3.5.17.2: Substation Inspections, Transmission.<sup>315</sup> For the purposes of this audit, Energy Safety reagggregated the sub-initiatives into one initiative: 7.3.5.17.

### 7.17.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PG&E describes its substation program as meeting or exceeding “CALFIRE recommendations (Pub. Res. Code § 4291) for defensible space by clearing vegetation in and around Tier 2 and Tier 3 HFTD Electric Distribution Substations” as well as annually<sup>316</sup> conducting these ground inspections and recording the inspections and

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<sup>312</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

<sup>313</sup> PG&E’s 2021 WMP Update, page 741.

<sup>314</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

<sup>315</sup> PG&E’s 2021 WMP Update, page 742.

<sup>316</sup> PG&E’s 2021 WMP Update, page 743, footnote 94 describes the inspection timeframe as “November 15 of the prior year to November 15 of the current year.”

maintenance operations electronically.<sup>317</sup> PG&E made similar statements for its Electric Transmission Substations and Hydro facilities programs.<sup>318</sup> Energy Safety reviewed PG&E's Wildfire Defensible Space for Substations bulletin which establishes guidelines for the inspection of defensible space in and around electric substations.<sup>319</sup> Energy Safety also reviewed PG&E's inspection and maintenance records for electric distribution and transmission substations within or adjacent to Tier 2 and Tier 3 HFTDs and found PG&E cleared vegetation in and around Tier 2 and Tier 3 HFTD substations and recorded activity electronically.<sup>320</sup> The records included the date of service, before and after images, and descriptions of work performed at each site. In its 2021 WMP Update, PG&E provided five specific categories of transmission substations, distribution substations, and hydro facilities and provided a targeted number of inspections for each category for the period of November 15, 2020, through November 15, 2021. Energy Safety evaluated whether PG&E met its inspection targets for each category. The results of this evaluation are provided in the remainder of this section and summarized in Table 4 below.

In its 2021 WMP Update, PG&E stated it would inspect 176 Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 HFTD.<sup>321</sup> Energy Safety reviewed inspection records for all electric distribution substations within or adjacent to Tier 2 and Tier 3 HFTD and found PG&E completed inspections for 170 substations.<sup>322</sup> Therefore, Energy Safety's audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding inspections of Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 HFTD.

In its 2021 WMP Update, PG&E stated it would inspect 263 Electric Distribution Substations not within a Tier 2 or 3 HFTD<sup>323</sup> during the period of November 15, 2020, through November 15, 2021.<sup>324</sup> Energy Safety reviewed inspection records for all electric distribution substations not within or adjacent to Tier 2 and Tier 3 HFTD and found PG&E completed inspections for 86 substations from November 15, 2020 through November 15, 2021.<sup>325</sup> Energy Safety observed an additional 194 inspections reported by PG&E occurred prior to November 15, 2020, according to the dates listed on the inspection records provided by PG&E. Conducting inspections prior to PG&E's stated commencement date of the annual inspection interval can

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<sup>317</sup> PG&E's 2021 WMP Update, page 743.

<sup>318</sup> PG&E's 2021 WMP Update, page 745.

<sup>319</sup> DR-169, response to question 1.

<sup>320</sup> DR-169, response to question 2 and DR-169 Supplemental Response.

<sup>321</sup> PG&E's 2021 WMP Update, pages 743-744.

<sup>322</sup> DR-169 Supplemental Response.

<sup>323</sup> PG&E's 2021 WMP Update, page 744.

<sup>324</sup> PG&E's 2021 WMP Update, page 743.

<sup>325</sup> DR-169 Supplemental Response.

result in a site being inspected less than annually.<sup>326</sup> For example, the earliest substation inspection reported by PG&E was conducted on July 27, 2020.<sup>327</sup> Based on PG&E's stated annual inspection period of November to November, PG&E could next inspect that same substation in October 2022 – 15 months from the July 2020 inspection, and a time period that includes two winter seasons. Therefore, Energy Safety did not count inspections conducted prior to PG&E's stated commencement date of its 2021 WMP substation inspections towards PG&E's 2021 WMP targets. PG&E completed inspections for 86 of the targeted 263 Electric Distribution Substations not within a Tier 2 or 3 HFTD during the programmatic cadence it set in its 2021 WMP Update. Therefore, Energy Safety's audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding inspections of Electric Distribution Substations not within or adjacent to Tier 2 and Tier 3 HFTD.

In its 2021 WMP Update, PG&E stated it would complete 46 inspections of Electric Transmission Substations within or adjacent to Tier 2 and Tier 3 HFTD.<sup>328</sup> Energy Safety reviewed inspection records for all electric transmission substations within or adjacent to Tier 2 and Tier 3 HFTD and found PG&E completed inspections for 79 substations.<sup>329</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding inspections of Electric Transmission Substations within or adjacent to Tier 2 and Tier 3 HFTD.

In its 2021 WMP Update, PG&E stated it would complete 41 inspections of Electric Transmission Substations not within or adjacent to Tier 2 and Tier 3 HFTD<sup>330</sup> during the period of November 15, 2020, through November 15, 2021.<sup>331</sup> Energy Safety reviewed inspection records for all electric transmission substations not within or adjacent to Tier 2 and Tier 3 HFTD and found PG&E completed inspections for 22 substations from November 15, 2020, through November 15, 2021.<sup>332</sup> Energy Safety observed an additional 19 inspections reported by PG&E occurred prior to November 15, 2020, according to the dates listed on the inspection records provided by PG&E.<sup>333</sup> PG&E only completed 22 of the targeted 41 inspections of Electric Transmission Substations not within or adjacent to Tier 2 and Tier 3 HFTD during the

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<sup>326</sup> DR-169 Supplemental Response, PG&E explained, "Inspections for the 2021 inspection cycle were initiated as soon as practical due to the large number of inspections that we needed to complete by the end of 2021. Completing inspections earlier in the cycle also provided additional lead time for any agency permits, environmental releases, or property owner negotiations required for work identified during the inspection."

<sup>327</sup> DR-169 Supplemental Response, DRU11971\_Q002\_Atch01\_Q.2.a DIST Tier 1 List of Inspections.xlsx.

<sup>328</sup> PG&E's 2021 WMP Update, page 745.

<sup>329</sup> DR-169 Supplemental Response.

<sup>330</sup> PG&E's 2021 WMP Update, page 746.

<sup>331</sup> PG&E's 2021 WMP Update, page 743.

<sup>332</sup> DR-169 Supplemental Response.

<sup>333</sup> DR-169 Supplemental Response, PG&E explained, "Inspections for the 2021 inspection cycle were initiated as soon as practical due to the large number of inspections that we needed to complete by the end of 2021. Completing inspections earlier in the cycle also provided additional lead time for any agency permits, environmental releases, or property owner negotiations required for work identified during the inspection."

programmatic cadence it set in its 2021 WMP Update. Therefore, Energy Safety's audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding inspections of Electric Transmission Substations not within or adjacent to Tier 2 and Tier 3 HFTD.

In its 2021 WMP Update, PG&E stated it would complete 63 inspections of Hydro facilities within or adjacent to Tier 2 and Tier 3 HFTD.<sup>334</sup> Energy Safety reviewed inspection records for all hydro facilities within or adjacent to Tier 2 and Tier 3 HFTD and found PG&E completed inspections for 64 substations.<sup>335</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding inspections of Hydro facilities within or adjacent to Tier 2 and Tier 3 HFTD.

As shown in Table 4, Energy Safety's audit found PG&E did not provide information consistent with the completion of the work identified in initiative 7.3.5.17 regarding substation inspections because it failed to complete all required work for Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 HFTD, Electric Distribution Substations not within a Tier 2 or 3 HFTD and Electric Transmission Substations not within a Tier 2 or 3 HFTD.

*Table 4: PG&E's Substation Vegetation Management Targets and Energy Safety's Assessment*

<b>Substation Type (Location)</b>	<b>WMP Target</b>	<b>Total Reported through SVM Data Requests</b>	<b>Energy Safety Confirmed</b>	<b>Energy Safety Assessment</b>
<b>Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 HFTD<sup>336</sup></b>	176	170	170	Did not perform all required work
<b>Electric Distribution Substations not within a Tier 2 or 3 HFTD<sup>337</sup></b>	263	280	86	Did not perform all required work
<b>Electric Transmission Substations within or</b>	46	79	79	Performed all required work

<sup>334</sup> PG&E's 2021 WMP Update, page 750.

<sup>335</sup> DR-169 Supplemental Response.

<sup>336</sup> PG&E's 2021 WMP Update, pages 743-744.

<sup>337</sup> PG&E's 2021 WMP Update, page 744.



Substation Type (Location)	WMP Target	Total Reported through SVM Data Requests	Energy Safety Confirmed	Energy Safety Assessment
<b>adjacent to Tier 2 and Tier 3 HFTD<sup>338</sup></b>				
<b>Electric Transmission Substations not within a Tier 2 or Tier 3 HFTD<sup>339</sup></b>	41	41	22	Did not perform all required work
<b>Hydro facilities within or adjacent to Tier 2 and Tier 3 HFTD<sup>340</sup></b>	63	64	64	Performed all required work

PG&E's 2021 WMP Update states "PG&E will identify and pursue vegetation removal and thinning work on undeveloped privately owned land neighboring PG&E property for further risk reduction purposes."<sup>341</sup> Energy Safety reviewed inspection and maintenance records and found that PG&E pursued vegetation removal and thinning work on undeveloped neighboring private property to transmission substations in 2021.<sup>342</sup> Therefore, Energy Safety's audit found that PG&E provided information consistent with the completion of the work identified in this statement regarding vegetation removal and thinning work.

### 7.17.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.17

Based on the analysis above in Section 7.17.1, Energy Safety finds PG&E did not perform all required work for initiative 7.3.5.17: Substation Inspections. See Section 8.1 of this audit for a list of corrective actions.

<sup>338</sup> PG&E's 2021 WMP Update, pages 745-746.

<sup>339</sup> PG&E's 2021 WMP Update, page 746.

<sup>340</sup> PG&E's 2021 WMP Update, pages 745-746.

<sup>341</sup> PG&E's 2021 WMP Update, page 744.

<sup>342</sup> DR-169, response to question 2b.

## 7.18 Initiative 7.3.5.18: Substation Vegetation Management

The purpose of this initiative is “to reduce the ignition probability and wildfire consequences attributable to contact from vegetation to substation equipment.”<sup>343</sup> Note that PG&E’s 2021 WMP Update split this initiative into sub-initiatives: 7.3.5.18.1: Substation Vegetation Management, Distribution and 7.3.5.18.2: Substation Vegetation Management, Transmission.<sup>344</sup> For the purposes of this audit, Energy Safety reagggregated the sub-initiatives into one initiative: 7.3.5.18.

### 7.18.1 2021 WMP Update Statements, Supporting Information, and Analysis

In its 2021 WMP Update, PG&E states, “In accordance with CAL FIRE defensible space recommendations (Pub. Res. Code § 4291), PG&E removes flammable fuels and removes or trims vegetation in and around Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 HFTDs to minimize ignition spread outside of facilities and provide improved structure defense capability for firefighting purposes and to reduce risk of potential loss.”<sup>345</sup> A similar statement was made for PG&E’s Electric Transmission Substations and Hydro facilities.<sup>346</sup> Energy Safety completed its analysis and review in Section 4.17.

PG&E’s 2021 WMP Update states that substation vegetation management work “included mechanical weed abatement, tree trim, newly identified hazard trees, and brush and debris removal in accordance with CAL FIRE recommendations for defensible space.”<sup>347</sup> PG&E’s 2021 WMP Update continues by stating that “In 2021, PG&E will improve the defensible space program with herbicide treatment plans within defensible space zones for improved long-term control and abatement of noxious weeds and reoccurring/regenerating brush species, where permitted.”<sup>348</sup> Additionally, PG&E’s 2021 WMP Update stated that it would “perform additional vegetation thinning and/or removal work beyond CALFIRE recommended zones for defensible space.”<sup>349</sup> Energy Safety reviewed work orders of vegetation management work around electric distribution substations from 2021,<sup>350</sup> which included the following types of work:

- Brush and debris removal

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<sup>343</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

<sup>344</sup> PG&E’s 2021 WMP Update, page 747.

<sup>345</sup> PG&E’s 2021 WMP Update, page 748.

<sup>346</sup> PG&E’s 2021 WMP Update, page 750.

<sup>347</sup> PG&E’s 2021 WMP Update, page 748.

<sup>348</sup> PG&E’s 2021 WMP Update, page 748.

<sup>349</sup> PG&E’s 2021 WMP Update, page 749.

<sup>350</sup> DR-169, response to questions 5, 6 and 7.

- Grass and weed abatement
- Hazard tree removal
- Vegetation trimming
- Herbicide treatment plans
- Additional vegetation thinning and/or removal

Therefore, Energy Safety’s audit found PG&E provided information consistent with the completion of the work identified in these statements regarding additional vegetation thinning and removal work.

In its 2021 WMP Update, PG&E stated it would perform maintenance on 176 Electric Distribution Substations, meeting or exceeding Public Resources Code Section 4291 requirements for tree, brush and debris compliance work based on HFTD Tiers.<sup>351</sup> Energy Safety reviewed a list of all PG&E substations set to be assessed annually. Of the 223 total substations within Tier 2 and Tier 3 HFTDs, 170 sites are classified as distribution substations. A total of 95 sites are within Tier 2 and 26 sites are within Tier 3. The remaining 49 sites are classified as adjacent to the Tier 2 and Tier 3 HFTDs. PG&E provided a complete set of inspection and maintenance records for electric distribution substations within or adjacent to Tier 2 and Tier 3 HFTDs except for one that could not be located at the time of the data request (a screenshot of the completed assignment was provided as evidence).

In the first quarter QIU, PG&E increased the distribution substation “locations” (i.e., inspections) target from 176 to 178 (due to the sale or decommissioning of an asset). In the second quarter QIU, PG&E decreased the distribution substation locations target from 178 to 170 to combine substations which had two or more switchyards into one substation location. While the initial annual distribution target was 176 substations, PG&E stated that due to the sale or decommissioning of assets as well as grouping co-located facilities the target was reduced to 170 sites. However, PG&E does not have an approved change order related to this reduction, therefore the target remains 176 substations. Energy Safety reviewed maintenance records for all electric distribution substations within or adjacent to Tier 2 and Tier 3 HFTD. Energy Safety completed its analysis and review of this initiative in Section 4.17 and found PG&E completed 170 substation inspections, which did not meet the target of 176. Therefore, Energy Safety’s audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding substation maintenance.

Finally, PG&E’s 2021 WMP Update stated PG&E would perform maintenance on 46 Electric Transmission Substations and 63 Hydro facilities, prioritizing the additional CALFIRE recommended tree, brush, and debris compliance work based on HFTD Tiers (Pub. Res. Code § 4291).<sup>352</sup> Energy Safety reviewed Electric Transmission Substations and Hydro facilities maintenance records and confirmed that PG&E conducted maintenance on 79 Transmission

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<sup>351</sup> PG&E’s 2021 WMP Update, page 748.

<sup>352</sup> PG&E’s 2021 WMP Update, page 750.

Substations and 64 Hydro facilities within or adjacent to Tier 2 and Tier 3 HFTD.<sup>353</sup> The maintenance records include the date of service, before and after images, and descriptions of work performed at each site. The records indicate that tree, brush, and debris clearance was conducted at all sites consistent with PRC4291. However, the records did not clearly indicate that PG&E prioritized maintenance based on HFTD Tiers.<sup>354</sup> Therefore, Energy Safety’s audit found that PG&E did not provide information consistent with the completion of the work identified in this statement regarding substation maintenance.

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

Based on the analysis above in Section 7.18.1, Energy Safety finds PG&E did not perform all required work for initiative 7.3.5.18: Substation Vegetation Management. See Section 8.1 of this audit for a list of corrective actions.

## **7.19 Initiative 7.3.5.19: Vegetation Inventory System**

The purpose of this initiative is having a “centralized inventory of vegetation clearances” that includes species, growth forecast, and grow-in, fly-in, or fall-in risk.<sup>355</sup>

### **7.19.1 2021 WMP Update Statements, Supporting Information, and Analysis**

PG&E’s 2021 WMP Update states,

“PG&E is reviewing work management platforms and is planning to perform proof-of-concepts with one or more vendors in 2021 to begin to test how platforms may perform with current data collected in VM programs as well as to collect additional data required by the WSD Guidance 10 Data standards. VM is also engaging with PG&E’s internal Information Technology department to define and plan database support.... PG&E will continue to work on a project plan in 2021.”<sup>356</sup>

Energy Safety reviewed date-stamped internal communications regarding action items such as ‘VM Schema Changes’, ‘WSD GIS Data Analysis’, ‘WSD Domain Requirements’, ‘WSD Dictionary’ and an example reference of the WSD Guidance 10 standard from February 4,

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<sup>353</sup> DR-169 Supplemental Response.

<sup>354</sup> DR-169 Supplemental Response.

<sup>355</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

<sup>356</sup> PG&E’s 2021 WMP Update, pages 752-753.

2021.<sup>357</sup> Energy Safety reviewed meeting notes with examples of communication between vendors, PG&E VM, and IT regarding a proof-of-concept proposal for a One VM Database, the IT system selected for VM use.<sup>358</sup>

PG&E stated that “VM and PG&E IT engaged multiple vendors for proof of concepts in developing what we now know as the One VM Database. The engagement with the external vendors began in Q2 of 2021 and consisted of multiple meetings around demos, questions, walkthroughs, and feedback. Ultimately, these engagements with internal IT and external vendors resulted in the selection of Salesforce as the vendor for the One VM tool in July 2021.”<sup>359</sup>

After the selection of Salesforce as the vendor for the One VM Database, PG&E drafted the One VM Project schedule in August 2021.<sup>360</sup> In October 2021, the One VM Tool Deployment Scope was revised and approved.<sup>361</sup> Therefore, Energy Safety’s audit found that PG&E provided information consistent with the completion of the work identified in these statements regarding the One VM Database.

### **7.19.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.19**

Based on the analysis above in Section 7.19.1, Energy Safety finds PG&E provided information consistent with completion of the work identified in the 2021 WMP update Initiative 7.3.5.19: Vegetation Inventory System.

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

The purpose of this initiative is “to ensure that vegetation does not encroach upon the minimum clearances in GO95.”<sup>362</sup>

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<sup>357</sup> DR-169, response to question 8a.

<sup>358</sup> DR-169, response to question 8b.

<sup>359</sup> DR-169, response to question 8d.

<sup>360</sup> DR-169, response to question 8d, DRU11971\_Q008\_Atch07\_DRAFT PG&E One VM Project Baseline Schedule.xlsx.

<sup>361</sup> DR-169, response to question 8d.

<sup>362</sup> Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

### **7.20.1 2021 WMP Update Statements, Supporting Information, and Analysis**

PG&E's 2021 WMP Update, initiative 7.3.5.20, redirects readers to initiatives 7.3.5.2 and 7.3.5.3.<sup>363</sup> Therefore Energy Safety did not conduct a separate analysis for work performed for this initiative.

### **7.20.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.20**

See Energy Safety's determination for initiatives 7.3.5.2 and 7.3.5.3.

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<sup>363</sup> PG&E's 2021 WMP Update, page 754.

## 8. Conclusion

Energy Safety reviewed all 20 initiatives pertaining to vegetation management in PG&E’s 2021 WMP Update. Energy Safety’s audit found PG&E did not perform all the work specified in nine out of the 20 vegetation management initiatives in its 2021 WMP Update. In these instances, Energy Safety’s audit found that PG&E did not provide supporting documentation or information consistent with statements made in its 2021 WMP Update regarding its vegetation management initiatives.

This audit is not an assessment of the quality of PG&E’s execution of its vegetation management programs.

See Table 5 below for a summary of Energy Safety’s findings and corrective actions for PG&E pertaining to this audit. Within 10 business days following receipt of this audit, PG&E must submit a response to the corrective actions listed in Table 5 below, as well as supporting documentation. PG&E must title its response “PGE 2021 SVM Audit Corrective Action Plan” and submit the response on the 2021 SVM Docket in Energy Safety’s E-Filing System.<sup>364</sup>

### 8.1 Corrective Action

*Table 5: Findings from Energy Safety’s 2021 SVM Audit of PG&E*

Initiative Number	Finding	Corrective Action
<b>7.3.5.1</b>	1. PG&E did not communicate its community and environmental impacts via text messaging in 2021.	PG&E shall a) provide a reason why it did not conduct communication efforts in all the methods listed in this initiative of the WMP, and b) detail the steps it’s taking to ensure vegetation management operations are consistent with statements made in this initiative of the WMP.
<b>7.3.5.1</b>	2. PG&E did not continue discussions with CALFIRE and the Board of Forestry in 2021, only attending one public workshop regarding Forest Practice	PG&E shall a) provide a reason why it did not continue discussions with CALFIRE and the Board of Forestry regarding Forest Practice Rules and Utility Exemptions in 2021 beyond attending the one public workshop, and b) detail the steps it’s taking

<sup>364</sup> 2023 Compliance Guidelines, Section 6.1, page 14.

Initiative Number	Finding	Corrective Action
	Rules and of Utility Exemptions.	to ensure vegetation management operations are consistent with statements made in this initiative of the WMP.
7.3.5.3	3. PG&E did not reach the targets of LiDAR flown for NERC and non-NERC lines in 2021.	PG&E shall a) provide an explanation for why it did not meet its target for LiDAR flown for NERC and non-NERC lines, b) detail the steps it's taking to ensure vegetation management operations are consistent with the targets stated in the WMP, and c) detail the steps it's taking to ensure PG&E's database (ETGIS) accurately portrays the miles in the field.
7.3.5.3	4. PG&E did not provide documentation showing the ROW Expansion program treated vegetation via chipping or lopping and scattering in 2021.	PG&E shall a) confirm PG&E cannot provide documentation showing different fuel treatment types in this program, and b) detail the steps it's taking to track ROW Expansion program vegetation management treatments as described in the WMP.
7.3.5.3	5. PG&E did not formally document its prioritization of the IVM projects in 2021.	PG&E shall detail the steps it's taking to ensure vegetation management operations are consistent with statements made in this initiative of the WMP.
7.3.5.14	6. PG&E did not add program-specific courses for Transmission VM programs.	PG&E shall provide evidence that it has added or plans to add the Transmission specific course to the SLP.
7.3.5.14	7. PG&E did not meet the requirement for the month 6 audit and instead completed the month 6 audit in month 9.	PG&E shall a) provide a reason why it failed to timely complete the month 6 audit, b) detail steps it's taking to ensure audits are timely completed.



Initiative Number	Finding	Corrective Action
7.3.5.17	8. PG&E did not meet the inspection targets for Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 HFTD.	PG&E shall detail the steps it is taking to: a) ensure that within its future EC ARCs, it documents any deviations from the targets stated in its WMP, and b) ensure vegetation management operations are consistent with the targets stated in its WMP.
7.3.5.17	9. PG&E did not meet the inspection targets for Electric Distribution Substations not within or adjacent to Tier 2 and Tier 3 HFTD.	PG&E shall detail the steps it is taking to: a) ensure that within its future EC ARCs, it utilizes the programmatic cadence stated in its WMP to determine target completion, and b) ensure vegetation management operations are consistent with the targets stated in its WMP.
7.3.5.17	10. PG&E did not meet the inspection targets for Electric Transmission Substations not within or adjacent to Tier 2 and Tier 3 HFTD.	PG&E shall detail the steps it is taking to: a) ensure that within its future EC ARCs, it utilizes the programmatic cadence stated in its WMP to determine target completion, and b) detail the steps it is taking to ensure vegetation management operations are consistent with the targets stated in its WMP.
7.3.5.18	11. PG&E did not meet the maintenance targets for Electric Distribution Substations within or adjacent to Tier 2 and Tier 3 HFTD.	PG&E shall detail the steps it is taking to: a) ensure that within its future EC ARCs, it documents any deviations from the targets stated in its WMP, and b) ensure vegetation management operations are consistent with the targets stated in its WMP.
7.3.5.18	12. PG&E's records did not clearly show it prioritized Electric Transmission Substation and Hydro facility maintenance based on HFTD Tiers.	PG&E shall a) provide clear records showing it prioritized Electric Transmission Substation and Hydro facility maintenance based on HFTD Tiers or provide an explanation as to why these clear records are not available, b) describe how it will clearly demonstrate in the future that it is

Initiative Number	Finding	Corrective Action
		prioritizing facility maintenance based on HFTD Tiers, and c) detail the steps it is taking to ensure vegetation management operations are consistent with the targets stated in its WMP.

# DATA DRIVEN FORWARD-THINKING INNOVATIVE SAFETY FOCUSED



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