



OFFICE OF ENERGY INFRASTRUCTURE SAFETY

715 P Street, 20th Floor | Sacramento, CA 95814

916.902.6000 | www.energysafety.ca.gov

Caroline Thomas Jacobs, Director

September 29, 2023

To: Southern California Edison Company
Shinjini Menon
Vice President Asset Management and Wildfire Safety
2244 Walnut Grove, Rosemead, CA 91770

Subject: Office of Energy Infrastructure Safety’s Audit on Southern California Edison 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 Southern California Edison Company’s (SCE’s) 2021 substantial vegetation management work.

During the audit, Energy Safety reviewed data provided by SCE and compared it to the representations SCE made in its 2021 Wildfire Mitigation Plan Update. A copy of the audit findings is enclosed. SCE must submit its responsive Corrective Action Plan to the 2021-SVM docket¹ 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 Edward Chavez at Edward.Chavez@energysafety.ca.gov, and provide a copy to compliance@energysafety.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Suzie Rose", is enclosed in a rectangular box.

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

cc:

¹ [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 September 28, 2023)



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715 P Street, 20th Floor | Sacramento, CA 95814
916.902.6000 | www.energysafety.ca.gov

Caroline Thomas Jacobs, Director

Elizabeth Leano, SCE
Johnny Parker, SCE
Cynthia Childs, SCE
Denise Harris, SCE
Marissa Blunschi, SCE
Sunny Chu, SCE
Gary Chen, SCE
Raymond Fugere, SCE
Edward Chavez, Program and Project Supervisor
Gary Candelas, Environmental Scientist



**OFFICE OF ENERGY INFRASTRUCTURE SAFETY'S
2021 SUBSTANTIAL VEGETATION
MANAGEMENT AUDIT
SOUTHERN CALIFORNIA EDISON COMPANY
September 2023**

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1.0 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).¹ In each audit, Energy Safety must specify any failure of the electrical corporation to fully comply with the vegetation management requirements in the WMP.² 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 Southern California Edison Company's (SCE's) 2021 WMP Update and conducted this audit to determine if SCE performed the work required by each of those commitments and statements.

In performing the audit, Energy Safety found that SCE did not complete the work required by five (5) initiatives, as summarized below:

- Initiative 7.3.5.5: Fuel Management
 - SCE missed its pole brushing target by 36,747 poles
 - SCE did not implement a new fuel standard based on contractor report findings
- Initiative 7.3.5.8: Light Detection and Ranging (LiDAR) Transmission Line Inspections
 - SCE missed its LiDAR transmission circuit inspection target by eight inspections
- Initiative 7.3.5.14: Recruiting and Training of Vegetation Management Personnel
 - SCE missed its Hazard Tree Mitigation Program (HTMP) assessment target by 18,693 trees
- Initiative 7.3.5.16: Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment
 - Energy Safety's analysis found that SCE did not perform all required work for initiative 7.3.5.14 for a similar statement made regarding the target for HTMP tree assessments under this initiative. Therefore, Energy Safety determined that SCE did not perform all required work for initiative 7.3.5.16
- Initiative 7.3.5.17: Substation Inspections
 - SCE performed multiple inspections on 28 out of 557 substations. The remaining 529 substations received one inspection during the 2021 WMP calendar year

Energy Safety found that SCE performed all work required for the other 15 initiatives in its 2021 WMP Update, as detailed in Table 1 below.

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

² *Id.*

Table 1: Energy Safety's Analysis of SCE'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 | Performed all required work |
| 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 Transmission Electric Lines and Equipment | Performed all required work |
| 7.3.5.4 | Emergency Response Vegetation Management Due to Red Flag Warning or Other Urgent Conditions | Performed all required work |
| 7.3.5.5 | Fuel management and reduction of “slash” from vegetation management activities | Did not perform all required work |
| 7.3.5.6 | Improvement of Inspections | Performed all required work |
| 7.3.5.7 | LiDAR Inspection of Vegetation Around Distribution Electric Lines and Equipment | Performed all required work |
| 7.3.5.8 | LiDAR Inspection of Vegetation Around Transmission Electric Lines and Equipment | Did not perform all required work |
| 7.3.5.9 | Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment Beyond Inspections Mandate by Rules and Regulations | Performed all required work |
| 7.3.5.10 | Other Discretionary Inspections of Vegetation Around Transmission Electric Lines and Equipment Beyond Inspections Mandate by Rules and Regulations | Performed all required work |
| 7.3.5.11 | Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment | Performed all required work |
| 7.3.5.12 | Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment | Performed all required work |
| 7.3.5.13 | Quality Assurance/ Quality Control of Inspections | Performed all required work |
| 7.3.5.14 | Recruiting and Training of Vegetation Management Personnel | Did not perform all required work |

| 2021 WMP Update Initiative Number | 2021 WMP Update Initiative Name | Findings |
|-----------------------------------|--|--|
| 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 | Did not perform all required work |
| 7.3.5.17 | Substation Inspections | Did not perform all required work |
| 7.3.5.18 | Substation Vegetation Management | Performed all required work |
| 7.3.5.19 | Vegetation Inventory System | Performed all required work |
| 7.3.5.20 | Vegetation Management to Achieve Clearance Around Electric Lines and Equipment | Performed all required work |

2.0 SCOPE OF THE SUBSTANTIAL VEGETATION MANAGEMENT AUDIT

To conduct this audit, Energy Safety evaluated the vegetation management section of SCE's 2021 WMP Update.³ The 2021 WMP Update Guidelines identified the 20 initiatives that must be included in the vegetation management section of each WMP.⁴ In reviewing the vegetation management section and initiatives in SCE's 2021 WMP Update, Energy Safety identified both quantitative commitments and verifiable statements in the WMP. Energy Safety then reviewed available information and requested additional documentation to assess whether SCE performed the work specified by its quantitative commitments and executed its verifiable statements.

On January 5, 2022, SCE notified Energy Safety⁵ that it had completed a substantial portion of the work required by its vegetation management initiatives in its 2021 WMP Update.⁶ SCE reported that three vegetation management initiatives were substantially completed. In performing this audit, Energy Safety requested documentation substantiating the work performed by SCE. This audit does not assess the quality of that work.

3.0 VEGETATION MANAGEMENT PROGRAMS

SCE states that it implements the following programs to perform vegetation management work near distribution and transmission lines: Hazard Tree Mitigation Program (VM-1), Expanded Pole Brushing (VM-2), Expanded Clearance for Legacy Facilities (VM-3), Dead and Dying Tree Removal (VM-4), Quality Assurance/Quality Control, Distribution Mitigation Vegetation Management Plan (DVMP), and Transmission Mitigation Vegetation Management Plan (TMVP). Each of these programs is described in more detail below.

- **Hazard Tree Mitigation Program (VM-1):** A detailed inspection involving a two-level assessment process of trees that pose risks despite trimming and pruning⁷
- **Expanded Pole Brushing (VM-2):** Expanded pole brushing that goes beyond those required in Public Resources Code (PRC) Section 4292. This program inspects and

³ SCE WMP Update, pages 257-286

⁴ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55.

⁵ Pursuant to Public Utilities Code Section 326, subdivision (b), on July 1, 2021, the Wildfire Safety Division (WSD) transitioned from the Commission into the Office of Energy Infrastructure Safety (Energy Safety), a department under the California Natural Resources Agency.

⁶ Letter of Notification of Substantial Compliance (SB-247) from Gary Chen (Director Safety and Infrastructure) to the Director of Energy Safety dated January 5, 2022

⁷ SCE 2021 WMP Update, page 278

clears the brush to a 10-foot radial clearance on distribution poles in High Fire Risk Areas (HFRA)⁸

- **Expanded Clearances for Legacy Facilities (VM-3):** Legacy Facilities receive larger vegetation-free buffers⁹
- **Dead and Dying Tree Removal (VM-4):** Removal of dead, dying, or diseased trees affected by drought conditions and/or insect infestation in HFRA¹⁰
- **Quality Assurance/Quality Control of Inspections (VM-5):** Risk-informed sampling of HFRA circuits to ensure vegetation management is being achieved¹¹
- **Summer Readiness Verification:** These supplemental vegetation inspections provide added assurance that vegetation encroachments will not occur during peak fire season and high wind conditions. Patrols include Canyon Patrols, At-Risk Circuits Patrols, and Operations Santa Ana¹²
- **Distribution Vegetation Management Plan (DVMP) and Transmission Vegetation Management Plan (TVMP):** SCE annually inspects for clearance around distribution and transmission conductors. These inspections are performed in accordance with SCE’s DVMP and TVMP, which conform to regulatory requirements¹³ and are commonly referred to as “routine” vegetation management.

4.0 WMP 2021 VEGETATION MANAGEMENT INITIATIVES

In its 2021 WMP Update, SCE 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

⁸ SCE 2021 WMP Update, page 264

⁹ SCE 2021 WMP Update, page 265

¹⁰ SCE 2021 WMP Update, page 279

¹¹ SCE 2021 WMP Update, page 272

¹² SCE 2021 WMP Update, page 271

¹³ SCE 2020 WMP, page 152

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

5.0 SCE’S VEGETATION MANAGEMENT PROGRAMS AND THE 2021 WMP UPDATE INITIATIVES

Through a review of SCE’s 2021 WMP Update, Energy Safety correlated SCE’s vegetation management programs listed in the section above to the following initiatives listed in its 2021 WMP Update as shown in Table 2 below.

Table 2: SCE Vegetation Management Program and Corresponding 2021 WMP Update Vegetation Management Initiative

| Vegetation Management Program | WMP Initiative |
|---|---|
| Distribution Vegetation Management Plan (DVMP) | 7.3.5.2 |
| Transmission Vegetation Management Plan (TVMP) | 7.3.5.2 |
| Hazard Tree Mitigation Program (VM-1) | 7.3.5.9, 7.3.5.10, 7.3.5.16, 7.3.5.16.1 |
| Expanded Pole Brushing (VM-2) | 7.3.5.5, 7.3.5.5.1 |
| Expanded Clearance for Legacy Facilities (VM-3) | 7.3.5.5, 7.3.5.5.2 |
| Dead and Dying Tree Removal (VM-4) | 7.3.5.16, 7.3.5.16.2 |
| Quality Assurance/Quality Control | 7.3.5.13 |

| Vegetation Management Program | WMP Initiative |
|-------------------------------|--------------------|
| Summer Readiness Verification | 7.3.5.11, 7.3.5.12 |

6.0 DOCUMENTS REVIEWED

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

1. SCE’s 2021 Wildfire Mitigation Plan Update
2. SCE response to Energy Safety’s Data Request DR-122
3. SCE response to Energy Safety’s Data Request DR-141
4. SCE response to Energy Safety’s Data Request DR-162
5. SCE response to Energy Safety’s Data Request DR-165
6. SCE response to Energy Safety’s Data Request DR-183
7. SCE response to Energy Safety’s Data Request DR-193
8. Utility Vegetation Management Inspection Manual, Version 4
9. UVM-03 Utility Vegetation Management Distribution Vegetation Management Plan (DVMP), Version 5
10. UVM-07 Utility Vegetation Management Post Work Verification and UVM Program Oversight, Version 4
11. Independent Evaluator Report O7-SCE-2021_2022
12. Independent Evaluator Report 02-SCE-2021
13. Independent Evaluator Report 03_SCE-2021
14. Southern California Edison Company’s 2021 Wildfire Mitigation Plan Update Change Order Report
15. Submitted Quarter Data Report 2021 (QDR)
16. SCE Annual Report on Compliance, 2021

Energy Safety’s communication, Data Requests and SCE’s responses pertaining to this SVM audit are listed in Table 3 below.

Table 3: Timeline of Events SCE’s Communication with Energy Safety Regarding SVM Audit

| Number | Date(s) | Event |
|--------|-----------------|--|
| 1 | January 5, 2022 | SCE submitted a notification to Energy Safety stating it had completed a substantial portion of its 2021 Wildfire Mitigation Plan (WMP) vegetation management initiatives pertaining to three of SCE’s programs: Hazard Tree Assessments (VM-1), Expanded Pole Brushing Program (VM-2), and Dead and Dying Tree Removal (VM-4) |

| Number | Date(s) | Event |
|--------|--------------------|--|
| 2 | March 23, 2023 | Energy Safety submitted Data Request DR-122 to SCE asking for details pertaining to initiatives in SCE's 2021 WMP Update:7.3.5.1, 7.3.5.2, 7.3.5.4 |
| 3 | April 6, 2023 | SCE submitted its response to DR-122 to Energy Safety. Additionally, SCE asked for an extension in responding to DR-122 for items 1,7,14,15, and 17 |
| 4 | April 12, 2023 | SCE submitted responses to 1,7,14,15, and 17 to DR-122. |
| 5 | April 12, 2023 | Energy Safety submitted Data Request DR-141 to SCE, asking for details pertaining to initiatives 7.3.5.5, 7.3.5.5.2, 7.3.5.6, and 7.3.5.8 |
| 6 | April 21, 2023 | SCE submitted a response to DR-141. |
| 7 | May 10, 2023 | Energy Safety submitted Data Request DR-162 to SCE asking for details pertaining to initiatives in SCE's 2021 WMP Update 7.3.5.5, 7.3.5.8, 7.3.5.11, 7.3.5.13 |
| 8 | May 30, 2023 | SCE submitted a response to DR-162. |
| 9 | May 30, 2023 | Energy Safety submitted Data Request DR-165 to SCE asking for details pertaining to initiatives in SCE's 2021 WMP Update 7.3.5.14, 7.3.5.15, 7.3.5.17, 7.3.5.19. |
| 10 | June 12, 2023 | SCE submitted a response to DR-165. |
| 11 | August 4, 2023 | Energy Safety submitted Data Request DR-183 to SCE asking for details pertaining to initiatives in SCE's 2021 WMP Update 7.3.5.5, 7.3.5.20. |
| 12 | August 17, 2023 | SCE submitted a response to DR-183 |
| 13 | August 21, 2023 | Energy Safety had a follow-up email to DR-183 |
| 14 | August 30, 2023 | SCE submitted a response to the follow-up regarding DR-183 |
| 15 | September 14, 2023 | Energy Safety submitted Data Request DR-193 to SCE asking for details pertaining to initiative in SCE's 2021 WMP Update 7.3.5.14 |

| Number | Date(s) | Event |
|--------|--------------------|------------------------------------|
| 16 | September 21, 2023 | SCE submitted a response to DR-193 |

7.0 ANALYSIS

This section contains an initiative-by-initiative analysis of all vegetation management initiatives in SCE’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 findings.

7.1 Initiative 7.3.5.1 Additional Efforts to Manage Community and Environmental Impacts

The purpose of this initiative is “careful visual inspections of vegetation around the right-of-way, where individual trees are carefully examined, visually, and the condition of each rated and recorded to mitigate negative impacts of the utility’s vegetation management on local communities and the environment.”¹⁴

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

In its 2021 WMP Update, SCE states, “SCE has processes in place to mitigate the customer and environmental impact of its vegetation management activities.”¹⁵ SCE continues, “When vegetation mitigation is necessary, SCE’s standard process is to leave a door hanger at the time of inspection with information on the work to be performed and contact information for questions or concerns. Additional notification is then provided several days in advance of the vegetation work.”¹⁶ Energy Safety reviewed the response to DR-122, which states SCE has processes in place for customer impacts pertaining to vegetation management. SCE gives advance notice to customers prior to work being performed. Those notifications include “Approximately 30-90 days prior to scheduled inspection a courtesy paper postcard or email notification, approximately 30-45 days prior to the scheduled trim month, customer is notified either in-person or through a door hanger notification. Approximately 7 to 24 hours prior to work commencing, the customer is notified either in person or through a door

¹⁴ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹⁵ SCE 2021 WMP Update, page 257

¹⁶ SCE 2021 WMP Update, page 257

hanger.”¹⁷ SCE provided 2021 samples of the above notifications. These included an email notifying a customer of vegetation inspection to be carried out in the coming weeks on their property.¹⁸ SCE also provided multiple samples of door hangers that were given to customers, notifying them of vegetation work, which included tree trimming hazard tree removal.¹⁹ Door hangers had the inspector's contact information as a point of contact for the homeowner to reach out for questions.

In relation to environmental impacts, SCE requires environmental compliance prior to any vegetation management activities in SCE’s Environmental Sensitive Areas (ESA).²⁰ SCE stated, “SCE’s work management system identifies potential resources impacted and provides specific instructions to the tree contractor on how to proceed (e.g., requirement for a pre-site survey by a biologist and/or the need to monitor site).”²¹ SCE provided records of four poles from its work management system, showing the pole's environmental status in ESA territory. The records stipulate instructions to tree contractors on environmental requirements like water monitoring or biological environmental requirements. For example, identifying non-habitats for California bird species Black Rail and Gnatcatcher.²² Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in these statements regarding the mitigation of customer and environmental impacts of its vegetation management activities.

In its 2021 WMP Update, SCE states, “SCE also makes note of individual customer requests for items such as advance phone calls or appointment requests before conducting work and notates the tree inventory accordingly to satisfy customers' wishes as much as possible.”²³

SCE provided a screenshot of SCE’s vegetation management survey 123 work management tool, which allows pre-inspectors to input information regarding access issues or tree notes.²⁴ SCE provided examples from each quarter showing customer's considerations are inputted into the SCE work management tool. These considerations include who the property point of contact is, along with a phone number and instructions on when to notify. In this example, the input stated 48 hours in advance to a week's notice of informing the point of contact work is to be carried out.²⁵ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding making notes of individual customer requests pertaining to vegetation management work.

¹⁷ Response to DR-122, question 1a

¹⁸ Response to DR-122, question 1a; attachment “01_Q2-2021 Trim Sample Email_Redacted”

¹⁹ Response to DR-122, question 2; attachment “02_Vegetation Pocket Door Hanger with Inserts_v3”

²⁰ Response to DR-122, question 1a

²¹ Response to DR-122, question 1a

²² Response to DR-122, question 1b

²³ SCE 2021 WMP Update, page 257

²⁴ Response to DR-122, question 3a; attachment “03_ES122-SCE-2021-SVM-01-Question 03.a_Survey123Cust-TreeNotesEntry”

²⁵ Response to DR-122, question 3b; attachment “03_Confidential_ES122-SCE-2021-SVM-01-Question 03.b_Unredacted.xlsx”

In its 2021 WMP Update, SCE states, “SCE's Dead & Dying Tree Removal (formerly Drought Resolution Initiative (DRI)) and Hazard Tree Mitigation Program (HTMP), SCE also sends a certified letter to customers before any work is performed.”²⁶ In a data request response, SCE stated it sent out 1,582 notifications under the Hazard Tree Mitigation Program and 1,789 under its Dead and Dying Tree Removal.²⁷ SCE sends certified letters where contact with the customer was not made in person or via a door hanger.²⁸ SCE provided an Excel showing samples of certification letters that were sent in 2021. The Excel file showed the property address, date letter sent to the customer, program type (HTMP, DRI), and date of mitigation. Energy Safety verified that all sample notifications were sent prior to mitigation work.²⁹ SCE provided two certified letters from each program, HTMP, and DRI, which notify customers that vegetation work is required.³⁰ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding certification letters being sent to customers.

In its 2021 WMP Update, SCE states, “SCE staffs at least one ISA-certified arborist in each district across its service area to address such concerns.”³¹ SCE provided a list of the International Society of Arboriculture (ISA) arborists along with their respective ISA identification numbers and the district each arborist oversees.³² The list showed 33 ISA arborists assigned to 32 districts in the SCE territory (two arborists were assigned to the same district). Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding staffing at least one arborist in each district.

In its 2021 WMP Update, SCE states, “SCE meets with the affected city, county, and/or the homeowner associations, as well as schedules and attends public meetings, and prepares and distributes educational materials.”³³ In response to a data request, SCE stated it held 14 public meetings on vegetation management in 2021.³⁴ An example of these meetings was carried out in the Agoura Hills City Council meeting on April 14, 2021, at 6 p.m. SCE provided the meeting minutes, which discussed SB 85, which helps the State prepare for the upcoming fire season and status update on tree trimming procedures.³⁵ In addition, SCE provided examples of distributed educational materials detailing the importance of vegetation

²⁶ SCE 2021 WMP Update, page 257

²⁷ Response to DR-122, question 4a

²⁸ Response to DR-122, question 4a

²⁹ Response to DR-122, question 4a; attachment “04_DRI and HTMP 2021 Certified Letters Sent Unredacted”, comparing column E and C

³⁰ Response to DR-122, question 4a; attachment “04_DRI Letter to Customer_2021_Redacted” and “04_HTMP Certified Letter_2021_Redacted”

³¹ SCE 2021 WMP Update, page 257

³² Response to DR-122, question 5; attachment “05_Arborist_Unredacted”

³³ SCE 2021 WMP Update, page 257

³⁴ Response to DR-122, question 6a

³⁵ Response DR-122, question 6; attachment “06_Meeting Minutes Agoura Hills City Council_2021-04-14”

management. Topics included: “What is vegetation management?”, “What is meant by a hazard tree?” and “What’s my responsibility?”³⁶ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding meeting with public stakeholders.

In its 2021 WMP Update, SCE states, “Prior to conducting vegetation mitigation activities, SCE conducts an environmental review, obtains environmental permits, and performs environmental field support. SCE leverages GIS layers that integrate with its work management tools to identify environmentally sensitive areas, automating the process where feasible.”³⁷ SCE continues, “SCE works with environmental agencies through their processes to obtain relevant permits to mitigate the wildfire risk.”³⁸ In response to a data request, SCE stated, “[it] performs environmental review for vegetation work prescribed in the Environmentally Sensitive Area (ESA) layer and for tree removal on Federal and State Lands.”³⁹ SCE provided examples of environmental reviews conducted in wetlands/waterways in Sierra National Forest, Sequoia & Kings Canyon National Park, Mt. San Jacinto State Park, and Topanga State Beach. Each environmental review contained information using a state/federal request notification template. Each example contains SCE information, tree descriptions, latitude and longitude of a tree, instructions to access vegetation, review of water/wetlands, and water/wetlands avoidance and minimization measures.⁴⁰ SCE also provided four examples of 2021 project-specific permits from Santa Monica Mountains National Recreation and Coastal Zone, Sequoia National Parks, and Environmental Land management agencies prior to conducting utility line maintenance or removal of deceased and hazardous trees. SCE provided examples of pre-activity surveys performed in 2021 by environmental field support. The examples pertained to nesting bird survey information included biological survey area ID, survey type, survey start and end date, survey methodology, and project type.⁴¹ Also, to show that SCE leverages GIS layers that integrate with its work management tools to identify environmentally sensitive areas, a screenshot from SCE’s management tool was provided depicting the GIS layer of Environmentally Sensitive Area of a portion of Angeles National Forest.⁴² Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding environmental review, obtaining permits, and conducting field support.

³⁶ Response to DR-122, question 6; attachment “SCE_Veg_Management_FAQ_V2.pdf”

³⁷ SCE 2021 WMP Update, page 258

³⁸ SCE 2021 WMP Update, page 258

³⁹ Response to DR-122, question 7

⁴⁰ Response to DR-122, question 7; attachments “07_DR 7a MSUP_00349_SNF_CreekFire_CampSierra_ClassIIB_Table”; “07_DR 7a NPS Notification00022-SEKI_VM_HT_BCR”; “07_DR 7a VM_HT_00129_TopangaStatePark_Table”; “07_DR 7a VM_HT_0147_MtSanJacinto_Table”

⁴¹ Response to DR-122, question 7; attachment “07_DR 7c_S123 NBS”

⁴² Response to DR-122, attachment “07_7e_Sample ESA screenshot”

In its 2021 WMP Update, SCE states, “SCE provides vegetation contractors with annual training on environmental requirements and procedures and may supplement that with ad hoc training for specific projects where reinforcement is prudent.”⁴³ In response to a data request, SCE stated, “[it] provides annual environmental training to third party vegetation vendors in a ‘train-the-trainer’ format”.⁴⁴ In 2021, key staff from each of the approximately 18 company vendors were trained by SCE online. The key staff then trains their own staff as part of SCE’s Statement of Work.⁴⁵ SCE conducted eight training sessions in 2021 and two training in 2020.⁴⁶ SCE provided the attendance roster for environmental training in March of 2021. The roster contained the employee’s name, the contractor company the employee is associated with, and the training date.⁴⁷ In total, 227 key staff received Environmental Training in March of 2021.⁴⁸ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding annual training.

In its 2021 WMP Update, SCE states, “SCE strives to work with individual communities and environmental permitting agencies to identify ways to reduce or eliminate barriers to scheduled vegetation management.”⁴⁹ SCE provided The Statewide General Permit for Utilities’ Dredge and Fill Activities in Waters of the State Scope and Project Notification form. This collaboration between California utilities and the State Water Resources Control Board which states, “The goal of this general permit is to develop a streamline permitting process for utilities that will protect wetlands and water resources, water quality, as well as ensure energy grid reliability and resiliency.”⁵⁰ Additionally, SCE provided documentation of the Master Streambed Alteration permit application in collaboration with the Department of Fish and Wildlife with the goal to streamline the permitting process by creating more consistent and predictable permit requirements and conditions.⁵¹ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding ways to reduce barriers to vegetation management scheduling.

In its 2021 WMP Update, SCE states, “For 2021, SCE is developing processes to integrate its DRI and HTMP programs in a manner that reduces the number of visits for both inspections and mitigations.”⁵² SCE provided a record table of the combination of inspections from the

⁴³ SCE 2021 WMP Update, page 258

⁴⁴ Response to DR-122, question 8a

⁴⁵ Response to DR-122, question 8

⁴⁶ Response to DR-122, question 8c

⁴⁷ Response to DR-122, question 8d, attachment “08_CONFIDENTIAL_ES122-SCE-2021-SVM-8.d_EnvTraining_Roster_20210301”

⁴⁸ Response to DR-122, question 8d, attachment “08_CONFIDENTIAL_ES122-SCE-2021-SVM-8.d_EnvTraining_Roster_20210301” sum of column A

⁴⁹ SCE 2021 WMP Updates, page 258

⁵⁰ Response to DR-122, question 10; Attachment “10_Statewide General Order for Utilities Dredge-Fill Activities Final 20210727”

⁵¹ Response to DR-122, question 10a

⁵² SCE 2021 WMP Update, page 259

Dead and Dying Tree Removal and Hazard Tree Mitigation Program (HTMP) to increase vegetation management efficiency.⁵³ SCE completed 339 circuit assignments integrating the two respective programs out of a total of 1,737 circuit assignments in 2021.⁵⁴ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding integrating two vegetation management programs.

In its 2021 WMP Update, SCE states, “In 2021, SCE will explore expanding its overall customer service evaluation effort to measure customer interactions associated with its vegetation management work, such as including vegetation management-specific questions in its Voice of the Customer surveys.”⁵⁵ SCE provided a sample of its 2021 Voice of Customer (VOC) survey in 2021. The sample provided survey questions given to customers in the evaluation of SCE interactions associated with its vegetation management work. These questions include rating SCE’s tree trimming and notification process from a scale of one (not at all satisfied) to ten (Extremely satisfied).⁵⁶ Also, in November of 2021, SCE added two survey questions asking respondents, “If they see vegetation in or around the electrical lines, what would they do?” with optional answers being “a) contact SCE, b) Hire a tree trimmer certified to work in close proximity to power lines, c) something else” the second question asking “if you have a tree on your property growing into or new power lines which would you prefer? a) Recurring visits to trim trees, b) Removing the tree, c) something else?”⁵⁷ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding customer service evaluation.

In its 2021 WMP Update, SCE states, “SCE will continue to manage contractors in accordance with environmental compliance plans and perform post-work validations in partnership with SCE environmental department. Environmentally sensitive areas will be identified for environmental review and field support, further enhancing environmental compliance controls.”⁵⁸ In a data request response, SCE stated that its Environmental Service Division (ESD) performs post-work monitoring of tree mitigation in environmentally sensitive areas.⁵⁹ During or after work is completed, sites will be assessed to verify avoidance or minimization measures are carried out.⁶⁰ SCE provided two 2021 Waters Monitoring Reports, which required assessors to assess environmental impacts by answering a set of questions, ensuring precautions were being taken to minimize environmental impacts. At the end of each report,

⁵³ Response to DR-122, question 11

⁵⁴ Response to DR-122, question 11

⁵⁵ SCE 2021 WMP Update, page 259

⁵⁶ Response to DR-122, question 12a; attachment “12_VOC Veg Mgmt. Survey Questions 2021”

⁵⁷ Response to DR-122, question 12a; attachment “12_VOC Veg Mgmt. Survey Questions 2021”

⁵⁸ SCE 2021 WMP Update, page 259

⁵⁹ Response to DR-122, question 13a

⁶⁰ Response to DR-122, question 13a

photographs were taken to illustrate site monitoring and conditions.⁶¹ SCE’s vegetation management Senior Specialist and Specialists are required to perform environmental and safety observations on tree contractors annually. SCE provided records of the results of the observations. SCE’s staff conducted 1,703 environmental observations. The records show the vendor number, category which is environmental requirements, observation results, and any comments.⁶² Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding environmental compliance post-work.

7.1.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.1

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

7.2 Initiative 7.3.5.2 Detailed Inspection of Vegetation Around Distribution Electric Lines and Equipment

The purpose of this initiative is “careful visual inspections of vegetation around the right-of-way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.”⁶³

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

In its 2021 WMP Update, SCE states, “SCE inspects all distribution and transmission lines for vegetation encroachment and clearances annually.”⁶⁴ Additionally, SCE states, “SCE’s inspections are scheduled such that each of these Grids in SCE’s HFRA or non-HFRA is inspected annually.”⁶⁵ SCE provided the inspection schedule for 2021 and 2022. The schedule is broken up by Grid/Circuit ID, High Fire Thread District (HFTD) tier,

⁶¹ Response to DR-122, question 13; attachment “13_Confidential_30-2_1172703_watermon_08092021_Unredacted” and “13_Confidential_4677_1234604_watermon_07132021_Unredacted”

⁶² Response to DR-122, question 13; attachment “13_ES122-SCE-2021-SVM_13b_2021_VM Env Obs_SCE Item-Specific Observation Details”

⁶³ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

⁶⁴ SCE 2021 WMP Update, page 260

⁶⁵ SCE 2021 WMP Update, page 260

distribution/transmission, and inspection date.⁶⁶ SCE also provided for each quarter in 2021 the Quarterly Data Report (QDR), which is Geographic Information System (GIS) data on completed vegetation management programs in SCE territory.⁶⁷ The data shows SCE initiatives progress throughout the quarter, including but not limited to inspections of distribution and transmission lines in SCE’s HFRA and non-HFRA.⁶⁸ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding inspections of all distribution and transmission lines for vegetation encroachment.

In its 2021 WMP Update, SCE states, “SCE also inspects most of its tree inventory along distribution and transmission lines approximately six months following the planned annual inspection to ensure system compliance with regulation and identify any vegetation encroachments that may have grown faster than expected at the time of the annual inspection.”⁶⁹ SCE provided an Excel file showing SCE’s 2021 Cycle Busters. The file shows the circuit ID, name of the circuit, whether its transmission or distribution, HFTD tier, annual inspection date, and 2021 second inspection date.⁷⁰ 54% had the second inspection within six months following the annual inspection.⁷¹ SCE states, “On occasion, contractors are not able to perform second inspections at a six-month interval due to weather or resource constraints.”⁷² Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding a second inspection.

In its 2021 WMP Update, SCE states, “SCE schedules higher risk HFRA locations for inspection in the months leading up to peak fire season to the extent that resources are available, and it is reasonable to schedule the work during this time period.”⁷³ In response to a data request, SCE stated, “SCE considers peak fire season to span from May through October. Inspections may be completed in and after peak fire season due to agency and weather restrictions as well as internal resource requirements.”⁷⁴ SCE provided an Excel file containing the records of grids inspected prior to fire season. The file contained grid/ circuit ID, HFRA/non-HFRA, risk level, Transmission and Distribution, and inspection date.⁷⁵ The records showed 70% of the highest risk circuits were inspected prior to fire season, with only 30% of grids with the

⁶⁶ Response to DR-122, question 14; attachment “14_ES122-SCE-2021-SVM_14.a-b_Inspection Schedule by grid_HFRA_NonHFRA”

⁶⁷ QDR data submitted Q1 May 1st, Q2 August 1st, Q3 November 1st, Q4 February 1st

⁶⁸ QDR data submitted Q1 May 1st, Q2 August 1st, Q3 November 1st, Q4 February 1st

⁶⁹ SCE 2021 WMP Update, page 260

⁷⁰ Response to DR-122, question 17; attachment “17_ES122-SCE-2021-SVM_17_CycleBusters”

⁷¹ Formula calculation: column E-column F/30; filter for 6months and less divide by total number of GridID/CircuitID

⁷² Response to DR-122, question 17

⁷³ SCE 2021 WMP Update, page 260

⁷⁴ Response to DR-122, question 15a

⁷⁵ Response to DR-122, question 15; attachment “15_ES122-SCE-2021-SVM_15.a_Grids inspected prior to fire season”

highest rank being inspected during what SCE considers fire season.⁷⁶ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding the majority of higher-risk HFRA locations being inspected prior to fire season. Therefore, Energy Safety’s audit found that SCE was able to produce information consistent with the above statement made in its 2021 WMP Update for this initiative.

In its 2021 WMP Update, SCE states, “Detailed inspections for SCE's Bulk Electric System are performed using a combination of LiDAR and manual foot patrols by inspectors.”⁷⁷ SCE provided an Excel file showing the Bulk Electric system that received both LiDAR and manual foot patrols.⁷⁸ The file contained names of the circuit, LiDAR flight date, and dates vegetation management received LiDAR data. All LiDAR flights were completed before inspectors performed inspections. SCE states, “LiDAR data was provided to ground inspectors to enhance their inspections.”⁷⁹ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding the detailed inspection of the Bulk Electric System utilizing both LiDAR and foot patrols.

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

Based on the analysis above, Energy Safety finds that SCE provided information consistent with the completion of the work identified in the 2021 WMP Update Initiative 7.3.5.2: Detailed Inspection of Vegetation Around Distribution Electric Lines and Equipment.

7.3 Initiative 7.3.5.3 Detailed Inspection of Vegetation Around Transmission Electric Lines and Equipment

The purpose of this initiative is “careful visual inspections of vegetation around the right-of-way, where individual trees are carefully examined, visually, and the condition of each rated and recorded.”⁸⁰

⁷⁶ “15_ES122-SCE-2021-SVM_15.a_Grids inspected prior to fire season”; Filter for highest risk circuits, divide those grids which had inspections during fire season and total grids

⁷⁷ SCE 2021 WMP Update, page 261

⁷⁸ Response to DR-122, question 16; attachment “16_2021 Transmission LiDAR”

⁷⁹ Response to DR-122, question 16

⁸⁰ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

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

SCE’s 2021 WMP Update, Initiative 7.3.5.3: Detailed Inspection of Vegetation Around Transmission Electric Lines and Equipment, directs readers to Initiative 7.3.5.2: Detailed Inspection of Vegetation Around Distribution Electric Lines and Equipment.⁸¹ Therefore, Energy Safety did not conduct a separate analysis of the work performed for this initiative.

7.3.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.3

See Energy Safety’s determination for Initiatives 7.3.5.2.

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 detail the “plan and execution of vegetation management activities, such as trimming or removal, executed based upon and in advance of forecast weather conditions that indicate high fire threat in terms of ignition probability and wildfire consequence.”⁸²

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

In its 2021 WMP Update, SCE states, “SCE does not engage in any emergency response vegetation management in response to RFWs but has protocols in place to mitigate the risk of performing vegetation management work during those conditions.”⁸³ SCE provided its HFRA HOT Work Restriction & Mitigation Measures protocol, which stipulates actions tree crew and equipment take to help mitigate against fire ignitions in high-risk areas.⁸⁴ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding protocols to mitigate risk in performing vegetation management during RFW.

⁸¹ SCE 2021 WMP Update, page 261

⁸² Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

⁸³ SCE 2021 WMP Update, page 261

⁸⁴ Response to DR-122, question 18; attachment “HFRA Hot Work Restriction & Mitigation Measures”

In its 2021 WMP Update, SCE states, “SCE also modifies its vegetation management activities during RFW periods to help mitigate potential risks, including pausing non-emergency work in HFRA (e.g., use of chainsaws) that have the potential to cause sparks, and instead working in non-HFRA areas. Additionally, for any PSPS events during high fire risk days, vegetation management crews are on standby to mitigate any vegetation-related ignition risks identified during PSPS pre- or - post-patrols.”⁸⁵ Five email communications were provided in which SCE directed tree crews to stand by during a period of concern in 2021.⁸⁶ An example of one email stated, “Due to current weather conditions, there are circuits which are listed under “Period of Concern.” Below and attached is a list of circuits that cannot receive any maintenance activities, including vegetation mitigation, during the times listed. The only exception is if there is an emergency call-out scenario. The hours where work cannot be performed are color-coded in RED.”⁸⁷ All e-mails have tables depicting circuit name, tree work grid ID, district, county, and substation. SCE states, “SCE’s contractors are responsible for rescheduling and/or relocating vegetation management work for their tree crews.”⁸⁸ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding notification during red flag warnings.

7.4.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.4

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

7.5 Initiative 7.3.5.5 Fuels Management and Reduction of “Slash” from Vegetation Management 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...”⁸⁹ Note that SCE’s 2021 WMP Update splits this initiative into sub-initiatives: 7.3.5.5.1: Expanded Pole Brushing (VM-2) and 7.3.5.5.2: Expanded Clearances for

⁸⁵ SCE 2021 WMP Update, page 262

⁸⁶ Response to DR-122, question 19

⁸⁷ Response to DR-122, question 19; attachment “19_Q1_2021-01-31 Period of Concern Email Redacted”

⁸⁸ Response to DR-122, question 19b

⁸⁹ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

Legacy Facilities (VM-3).⁹⁰ For the purposes of this audit, Energy Safety reaggregated the sub-initiatives into one Initiative: 7.3.5.5.

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

In its 2021 WMP Update, SCE states, “SCE reduces slash (e.g., cut limbs and other woody debris) from vegetation management activities by chipping and hauling the material away to be disposed or recycled by pruning/removal contractors.”⁹¹ SCE continues, “SCE’s pruning/removal contractors abide by standard cleanup and disposal expectations for work sites. Removal and disposal of all debris generated during SCE vegetation management activity, except as requested by the customer (e.g., for firewood or mulch) or logistical constraints exist (e.g., steep slope with no vehicular access), is typically performed the same day.”⁹² SCE continues, “Where logistical constraints exist, SCE will work to mitigate the potential fuel risk by scattering the debris according to best management practices or any existing fuel management plan applicable to the work site.”⁹³ SCE provided an excerpt from the company’s Statement of work which states “contractors [are] responsible for immediate cleanup and disposal of all debris generated from line clearing or other Edison support or vegetation management activity. Contractors shall leave the property in the same condition as it was when they entered the property.”⁹⁴ SCE provided four invoices, one from each quarter of 2021, reflecting cleanup activities from vegetation contractors. Those cleanup activities include “cutting logs and clean-up, and chipping brush & wood.”⁹⁵ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in these statements regarding slash after vegetation activities.

In its 2021 WMP Update, SCE states, “Through 2021, SCE plans will review and analyze the results of the study and implement more regionally appropriate fuel management standards.”⁹⁶ SCE provided a technical brief by the Electric Power Research Institute (EPRI), ‘SCE Fuel Removal Assessment for Wildfire Mitigation.’⁹⁷ The brief outlined SCE’s current fuel and vegetation management practices and identified new fuel management approaches while working with external stakeholders. SCE participated in recurring meetings from March to December of 2021 with contractors who developed the technical brief to review and analyze the material used in the technical brief. SCE provided a screenshot of the reoccurring

⁹⁰ SCE 2021 WMP Update, pages 264-265

⁹¹ SCE 2021 WMP Update, page 262

⁹² SCE 2021 WMP Update, page 263

⁹³ SCE 2021 WMP Update, page 263

⁹⁴ Response to DR-141, question 2

⁹⁵ Response to DR-141, question 2; attachments “ES141-SCE-2021-SVM-02_Q.1_Daily Tree Logs_March 2021_Redacted”; “ES141-SCE-2021-SVM-02_Q.1_Daily Tree Logs_June 2021_Redacted”; “ES141-SCE-2021-SVM-02_Q.1_Daily Tree Logs_Sept 2021_Redacted”; “ES141-SCE-2021-SVM-02_Q.1_Daily Tree Logs_Oct 2021_Redacted”

⁹⁶ SCE 2021 WMP Update, page 263

⁹⁷ Response to DR-141, question 3; attachment “03_SCE Fuel Removal Assessment for Wildfire Mitigation”, page 3

meeting along with an agenda outline discussing feedback from SCE and external stakeholders.⁹⁸ SCE stated in its 2021 WMP Update that it would implement a fuel management standard from the study, but per SCE statement in DR-141, “SCE intended to utilize the results of the EPRI study to implement regionally appropriate fuel management standards in 2021. As of April 2023, the consultant has not yet released the final report.”⁹⁹ Therefore, Energy Safety’s audit found that SCE did not provide sufficient information consistent with the completion of work for this statement regarding implementing regionally appropriate fuel management standards.

In its 2021 WMP Update, SCE states, “Additionally, SCE has partnered with one of the USFS agencies on a program for sustained fuel management measures, e.g., putting in low-growing “utility-friendly” vegetation to undesirable tree species growth.”¹⁰⁰ SCE provided a presentation from a November 2021 meeting with USFS Region 5 and PG&E on fuel management measures.¹⁰¹ The presentation touches on some fuel management measures that involve areas utilities are exploring, which include the Stewardship Agreement, Integrated Vegetation Management Program (i.e., Herbicide Use), and Land Use Allocation with Fuel, Timber, and IVM programs.¹⁰² SCE states, “[The] Presentation lists potential partnership avenues with USFS that the utilities are exploring.”¹⁰³ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding the partnership with USFS on sustained fuel management measures.

In its 2021 WMP Update, SCE states, “SCE removes vegetation around poles to create 10-foot radial clearings (when attainable) at the base of its pole HFRA.”¹⁰⁴ SCE continues, “SCE’s goal in 2020 was to perform pole brushing on approximately 200,000 to 300,000 distribution poles. SCE brushed approximately 230,000 poles as part of this goal. In 2021 and beyond, SCE expects to exceed 230,000 distribution poles brushed in HFRA.”¹⁰⁵ Energy Safety reviewed an Excel file showing 163,253 poles were brushed in 2021.¹⁰⁶ The file contains a record giving structure ID, date work performed, Pole HFRA status, PRC 4292 equipment, and latitude and longitude coordinates.¹⁰⁷ SCE completed 82% of its stated target.¹⁰⁸ The reason for missing the target “[was] due to contractor performance, loss of crews, access constraints, and delay in obtaining environmental permitting. The activity cleared or made a reasonable attempt to

⁹⁸ Response to DR-162, question 1; attachment “01_ES162-SCE-2021-SVM-03_Q.1 EPRI Study Analysis”

⁹⁹ Response to DR-141, question 3b

¹⁰⁰ SCE 2021 WMP Update, page 263

¹⁰¹ Response to DR-162, question 2a

¹⁰² Response to DR-162, question 2; attachment “02_ES162-SCE-2021-SVM-03_USFS Meeting with SCE and PG&E”

¹⁰³ Response to DR-162, question 2a

¹⁰⁴ SCE 2021 WMP Update, page 264

¹⁰⁵ SCE 2021 WMP Update, page 265

¹⁰⁶ Response to IE02 attachment “02_Q02-VM-2 Pole Brushing 2021_Final YE Data Update”

¹⁰⁷ Response to IE02 attachment “02_Q02-VM-2 Pole Brushing 2021_Final YE Data Update”

¹⁰⁸ SCE’s Annual Report on Compliance for 2021 Wildfire Mitigation Plan, attachment A page 8

clear all non-exempt & unknown poles in the 2021 inventory to meet compliance requirements (PRC 4292).”¹⁰⁹ Therefore, Energy Safety’s audit found that SCE did not complete all the work identified in this statement regarding pole brushing.

In its 2021 WMP Update, SCE stated, “SCE has approximately 80,000 of these PRC 4292 poles, however, to adequately address wildfire risks, SCE increased its pole brushing population to approximately all distribution poles in HFRA.”¹¹⁰ Energy Safety reviewed Excel file ‘*02_Q02-VM-2 Pole Brushing 2021_Final YE Data_Update.xlsx*’, which contained the records of 82,314¹¹¹ poles in HFRA subjected to Public Resource Code (PRC) 4292 that were pole brushed throughout 2021 and pole brushed 69,882¹¹² in HFRA not subjected to PRC 4292. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding pole brushing subjected to PRC 4292.

In its 2021 WMP Update, SCE states, “SCE creates larger vegetation-free buffers around its Legacy Facilities.”¹¹³ SCE continues, “SCE performs these clearances around Legacy Facilities in HFRA Tier 2 and 3 over non-HFRA regions.”¹¹⁴ SCE concludes, “In 2020, all 156 Legacy Facilities in scope were assessed, and SCE completed treatment of 61 of the highest risk locations, based on HFRA tier and assessment findings. The remaining 95 locations are scheduled for treatment in 2021 and 2022 during this 3-year plan.”¹¹⁵ Energy Safety reviewed an excerpt from the SCE VM-3 Program guide for ‘Expanded Clearances for Legacy Facilities’ used in 2021. The excerpt shows an illustration of the minimum vegetation clearance allowed within each buffer zone around distribution and transmission legacy facilities.¹¹⁶ Energy Safety reviewed the Excel file “*02_Q02-VM-3 Expanded Clearances All of 2021.xlsx*,”¹¹⁷ which showed the Facility name, Facility type, latitude/longitude, Tier level, Remediation notes, Clearance Target (Ft), Status, and signoff date. Analysis of the data showed that 61¹¹⁸ sites received clearance, 34%¹¹⁹ are in ‘Extreme’ designation and 67%¹²⁰ in ‘Elevated’ designation. All treatments were completed in 2021, with 43%¹²¹ receiving clearance of 100 feet, with the rest receiving 30 feet. Therefore, Energy Safety’s audit found that SCE provided information

¹⁰⁹ SCE’s Annual Report on Compliance for 2021 Wildfire Mitigation Plan, attachment A page 8

¹¹⁰ SCE 2021 WMP Update, page 264

¹¹¹ Response to IE02 attachment “02_Q02-VM-2 Pole Brushing 2021_Final YE Data Update”, filter column F for ‘non-exempt’

¹¹² Response to IE02 attachment “02_Q02-VM-2 Pole Brushing 2021_Final YE Data Update”, filter column E for ‘blank’

¹¹³ SCE 2021 WMP Update, page 265

¹¹⁴ SCE 2021 WMP Update, page 265

¹¹⁵ SCE 2021 WMP Update, page 266

¹¹⁶ Response to DR-162 question 4; attachment “04_VM-3 Program Guide edited”

¹¹⁷ Response to IE02_SCE_2021 question 2

¹¹⁸ “*02_Q02-VM-3 Expanded Clearances All of 2021.xlsx*” sum of column A

¹¹⁹ “*02_Q02-VM-3 Expanded Clearances All of 2021.xlsx*” filter column E for Extreme than divide by total legacy facilities treated

¹²⁰ “*02_Q02-VM-3 Expanded Clearances All of 2021.xlsx*” filter column E for elevated than divide by total legacy facilities treated

¹²¹ “*02_Q02-VM-3 Expanded Clearances All of 2021.xlsx*” filter column G for 100 than divide by total legacy facilities treated

consistent with the completion of the work identified in this statement regarding Legacy Facilities.

In its 2021 WMP Update, SCE states, “By 2021, SCE plans to include its Legacy Facilities and locations in the WRRM model.”¹²² Energy Safety reviewed a screenshot of an internal e-mail, with excel attachments, correspondence dated in September 2021. The e-mail stated, “The WRRM 6.0 consequences were finalized this past month. Here are the updated consequences and risk scores for the generation assets [Legacy Facility].”¹²³ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding Legacy Facilities in its WRRM model.

7.5.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.5.1

Based on the analysis above, Energy Safety finds that SCE did not complete all the work of the 2021 WMP Update Initiative 7.3.5.5: Fuels Management and Reduction of “Slash” from Vegetation Management Activities. See Section 8.1 of this audit for a list of corrective actions.

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.”¹²⁴

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

In its 2021 WMP Update, SCE states, “SCE implemented plans to improve the quality and consistency of inspections performed around its transmission and distribution systems to ensure vegetation is maintained in accordance with regulatory requirements.”¹²⁵ To improve the quality and consistency of inspections around its transmission and distribution system, SCE “issued Version 4 of its Utility Vegetation Management Inspection Manual on 7/19/2021, which provides comprehensive guidance to vegetation management pre-inspection contractors. After the document was issued, training was provided to all vegetation management inspection contractors on 8/13/2021 to ensure they understood the requirements contained in the revised manual.”¹²⁶ Energy Safety reviewed Version 4 of the

¹²² SCE 2021 WMP Update, page 266

¹²³ Response to DR-141, question 4

¹²⁴ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹²⁵ SCE 2021 WMP Update, page 266

¹²⁶ SCE response to DR-141, question 5a

manual,¹²⁷ which gives instructions and illustrations on SCE vegetation management inspections. SCE also provided the training roster for the updated manual.¹²⁸ SCE measures improvements of inspections by its post-work verification performed by vegetation management’s Senior Specialists, who are certified Arborists.¹²⁹ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding improving the quality and consistency of its inspections.

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

Based on the analysis above, Energy Safety finds that SCE provided information consistent with the completion of the work identified in the 2021 WMP Update Initiative 7.3.5.6: Improvements for Inspections.

7.7 Initiative 7.3.5.7: LiDAR Inspections of Vegetation Around Distribution Electric Lines and Equipment

The purpose of this initiative is to inspect distribution right-of-way using LiDAR (Light Detection and Ranging).¹³⁰

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

In its 2021 WMP Update, SCE states, “Because the LiDAR was prioritized and collected for non-vegetation purposes, SCE used the sample data from the LiDAR flown around distribution electric lines and equipment to determine the validity/usefulness of the resultant data and the feasibility of implementing LiDAR in the broader distribution population of equipment.”¹³¹ SCE continues, “LiDAR data obtained in 2020 is currently being reviewed for validity and usefulness and to determine the future continued use of LiDAR in and around distribution systems.”¹³² SCE provided a PDF status sheet.¹³³ The information illustrated the total number of LiDAR data, which were field inspector verified. Three batches of sample LiDAR data were inspected by field inspectors. Also provided was the total number of vegetation points that needed some form of mitigation. For example, for Batch 2 in October, SCE completed 3,548

¹²⁷ UVM-09 Utility Vegetation Management Inspection Manual, Version 4

¹²⁸ 05_UVM-09 VM Inspection Training Roster 8_31_21

¹²⁹ SCE response to DR-141, question 5b

¹³⁰ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹³¹ SCE 2021 WMP Update, page 268

¹³² SCE 2021 WMP Update, page 268

¹³³ Response to DR-141, question 6; attachment “06_ES141-SCE-2021-SVM-02_Q.6_Dist_LiDAR_Update”

field inspection LiDAR points, with 1,630 requiring vegetation work due to being out of compliance. SCE worked on 1,593 of the 1,630, with the remaining being inaccessible due to customer refusals to the work sites.¹³⁴ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in these statements regarding the validity/usefulness of LiDAR flown around distribution electric lines.

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

Based on the analysis above, Energy Safety finds SCE provided information consistent with the completion of the work for 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 inspect distribution rights-of-way using LiDAR (Light Detection and Ranging).¹³⁵

7.8.1 2021 WMP Update Initiative Statements, Supporting Information, and Analysis

In its 2021 WMP Update, SCE states, “SCE utilizes LiDAR technology to inspect select transmission and sub-transmission lines for appropriate clearances between SCE's lines and vegetation.”¹³⁶ SCE continues, “LiDAR around transmission system [sic] is prioritized based on the potential for ground inspection inaccuracy - specifically vegetation density and accessibility challenges. Each Transmission circuit is rated accordingly, and flights are conducted every 1-10 years, with the circuits rated higher risk being flown frequently. Because of flight efficiencies, the data is collected for entire circuits, independent of HFRA status, although the majority of Transmission line miles that are flown frequently fall within HFRA.”¹³⁷ SCE concludes, “SCE expects approximately 80 transmission circuits to be flown in 2021.”¹³⁸ SCE provided the Excel file “*07_ES141-SCE-2021-SVM-02_2021 Circuits with Ranking.xlsx*,” which provided evidence of circuits that were flown by LiDAR in 2021.¹³⁹ The file contains the names of the circuits and the ranking for each circuit. The ranking of circuits

¹³⁴ Response to DR-141, question 6; attachment “06_ES141-SCE-2021-SVM-02_Q.6_Dist_LiDAR_Update” Batch 2

¹³⁵ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹³⁶ SCE 2021 WMP Update, page 269

¹³⁷ SCE 2021 WMP Update, page 269

¹³⁸ SCE 2021 WMP Update, page 269

¹³⁹ Response to DR-141, question 7

ranged from rank A-flown every year, rank B-flown every other year, and rank C flown every three years. All rank A circuits were flown in 2021.¹⁴⁰ 72 circuits were listed, with 24 of those being rank A, 45 rank B, and three rank C, flown every three years.¹⁴¹ In the Excel file “05_ES162-SCE-2021-SVM-03 - Q.5 LiDAR Circuit Data.xlsx,” LiDAR data from one circuit was provided showing the clearance distances of over 1,000 vegetation points, in feet, from vegetation to the conductors.¹⁴² Energy Safety’s audit found that SCE inspected 9% fewer transmission circuits in 2021 than it expected. Therefore, SCE did not complete all the work identified in this statement regarding using LiDAR on 80 Transmission circuits.

7.8.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.8

Based on the analysis above, Energy Safety finds that SCE did not complete all the work of the 2021 WMP Update Initiative 7.3.5.8: LiDAR Inspections of Vegetation Around Transmission Electric Lines and Equipment. See Section 8.1 of this audit for a list of corrective actions.

7.9 Initiative 7.3.5.9 Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandate by Rules and Regulations

The purpose of this initiative is inspection of the distribution rights-of-way and the adjacent vegetation that may be hazardous, which goes beyond the minimum standards in rules and regulations.¹⁴³

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

SCE’s 2021 WMP Update, Initiative 7.3.5.9 Other Discretionary Inspections of Vegetation Around Distribution Electric Lines and Equipment, Beyond Inspections Mandate by Rules and Regulations, directs readers to Initiative 7.3.5.16.1 HTMP for more details.¹⁴⁴ Therefore, Energy Safety did not conduct a separate analysis for performed work for this initiative.

¹⁴⁰ Response to DR-141, question 7; attachment “07_ES141-SCE-2021-SVM-02_2021 Circuits With Ranking”, column C

¹⁴¹ Response to DR-141, question 7; attachment “07_ES141-SCE-2021-SVM-02_2021 Circuits With Ranking”, column B

¹⁴² Response to DR-141, question 7; attachment “05_ES162-SCE-2021-SVM-03 - Q.5 LiDAR Circuit Data.xlsx”, column F

¹⁴³ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹⁴⁴ SCE 2021 WMP Update, page 270

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

See Energy Safety’s determination for initiatives 7.3.5.16.1.

7.10 Initiative 7.3.5.10 Other Discretionary Inspections of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandate by Rules and Regulations

The purpose of this initiative is an inspection of the transmission rights-of-way to identify vegetation hazards.¹⁴⁵

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

SCE’s 2021 WMP Update, Initiative 7.3.5.10 Other Discretionary Inspections of Vegetation Around Transmission Electric Lines and Equipment, Beyond Inspections Mandate by Rules and Regulations, directs readers to Initiative 7.3.5.9.¹⁴⁶ Therefore, Energy Safety did not conduct a separate analysis for performed work for this initiative.

7.10.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.9

See Energy Safety’s determination for initiatives 7.3.5.16.1.

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

The purpose of this initiative is to describe the utility’s distribution right-of-way inspection program to identify “obvious [vegetation] hazards.”¹⁴⁷

¹⁴⁵ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹⁴⁶ SCE 2021 WMP Update, page 270

¹⁴⁷ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

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

In its 2021 WMP Update, SCE states,

SCE performs supplemental vegetation inspections to verify certain circuits are free from vegetation encroachments into the minimum vegetation clearance distance. Supplemental vegetation inspections are part of SCE's summer readiness verifications to provide added assurance that vegetation encroachments will not occur during peak fire season and high wind conditions. These patrols include canyon patrols, at-risk circuit patrols, and Operation Santa Ana. Canyon Patrols are performed annually, where downslope, off-shore winds have greater potential to compromise trees conditioned to growing under primarily on-shore winds, to verify that certain circuits located in canyons are free from vegetation encroachments. At-risk Patrols are performed on circuits that have a history of multiple vegetation-caused circuit interruptions. Operation Santa Ana is a joint patrol effort with state and local fire authorities to perform patrols of overhead powerlines and poles in the HFRA...These patrols are performed in HFRA and focus on electrical facilities and adherence to PRC Sections 4292 and 4293.¹⁴⁸ The 2020 patrols have been completed and continue to be planned for subsequent years. These included Canyon and Summer Readiness patrols, which identified approximately 1,500 trees requiring mitigation and were included in the total line clearing inspection costs. In 2021, SCE will maintain the same scope for these patrols.¹⁴⁹

To assess compliance with the above statements, Energy Safety reviewed an Excel file provided in response to DR-162. The file contains all HFRA patrol records, which included data identifying area names, grid identifications, type of inspection (Canyon Patrol or Summer Readiness Verification), Inspection start and end date, and miles inspected.¹⁵⁰ In total, 2,182 miles were inspected in 2021.¹⁵¹ SCE states the scope for 2021 of the Canyon Patrol “considers points of ingress and egress. SCE also analyzes prior year scope and the annual inspection plans to ensure there is no duplicative effort executed by Canyon Patrols.”¹⁵² In determining the scope for the Summer Readiness Patrols, SCE states, “[Summer Readiness Patrols] is informed by the REAX engineering risk model. In addition, ‘aging mitigations’ were pending completion, SCE sent supplemental patrollers to ensure compliance and escalated mitigations as needed based on patrol findings.”¹⁵³ Therefore,

¹⁴⁸ SCE 2021 WMP Update, page 271

¹⁴⁹ SCE 2021 WMP Update, page 272

¹⁵⁰ 07_ES162-SCE-2021-SVM-03_Q.7_2021 Canyon Patrols and SRVP Inspections

¹⁵¹ 07_ES162-SCE-2021-SVM-03_Q.7_2021 Canyon Patrols and SRVP Inspections, sum of “F”

¹⁵² Response to DR-162, question 8

¹⁵³ Response to DR-162, question 8

Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in these statements regarding supplemental inspections.

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

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

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 right-of-way to identify obvious [vegetation] hazards.¹⁵⁴

7.12.1 2021 WMP Update Initiative Statements, Supporting Information, and Analysis

SCE’s 2021 WMP Update, Initiative 7.3.5.12: Patrol Inspections of Vegetation Around Transmission Electric Lines and Equipment, directs readers to Initiative 7.3.5.11: Patrol Inspections of Vegetation Around Distribution Electric Lines and Equipment.¹⁵⁵ Therefore, Energy Safety did not conduct a separate analysis for compliance with this initiative. Energy Safety’s assessment of this initiative is subsumed within its assessment of the 2021 WMP Update initiative 7.3.5.11.

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

See Energy Safety’s determination for initiatives 7.3.5.11.

7.13 Initiative 7.3.5.13 Quality Assurance/Quality Control of Inspections (VM-5)

¹⁵⁴ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹⁵⁵ SCE 2021 WMP Update, page 272

The purpose of this initiative is to audit completed vegetation work, including its input into “decision-making and related integrated workforce management processes.”¹⁵⁶

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

In its 2021 WMP Update, SCE states, “Arborists certified by the ISA inspect vegetation based on a risk-informed sampling of HFRA circuit miles to provide assurance that vegetation management standards are being achieved.”¹⁵⁷ SCE provided the 2021 year-end QC results for line clearing by all ISA arborists (QC inspectors).¹⁵⁸ An image was provided showing SCE’s districts with the number of trees inspected and the RCD and CCD pass rates for each district. RCD is clearance distances from conductors required by state statute and General Order 95. In 2021, SCE had an overall Regulatory Clearance Distance (RCD) pass rate of 99.20% in HFRA territory and 99.70% in non-HFRA territory. The SCE’s internal standards Compliance Clearance Distance (CCD) showed 95.43% and 98.43% in HFRA and non-HFRA territory, respectively.¹⁵⁹ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding vegetation management standards are being achieved.

In its 2021 WMP Update, SCE states, “100% QC inspection is performed in the highest Reax areas, which represent approximately 94% of the risk-consequence for SCE. In the remaining 6% of Reax risk-consequence areas, QC is performed using judgmental sampling techniques with a Confidence Level/Confidence interval of 99/1.7% to identify where to inspect.”¹⁶⁰ Energy Safety reviewed SCE’s UVM-07 Utility Vegetation Management Post Work Verification and UVM Program Oversight.¹⁶¹ The procedure details SCE’s sampling methodology and sampling strategy. It provides an in-depth, step-by-step process of SCE’s QA/QC program, which calculates program performance in HFRA and non-HFRA. The document states that 100% of QC inspections are performed in the highest REAX % range, which is 93.87% risk-consequence area. The remaining 6.13% uses a confidence level/confidence interval of 99/1.7.¹⁶² Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding QC inspections.

In its 2021 WMP Update, SCE states, “SCE plans to perform approximately 5,000 miles in 2021-22.”¹⁶³ Energy Safety reviewed the Excel file “*IE DR 7 Q14_2021 QC Inspection Mileage*

¹⁵⁶ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹⁵⁷ SCE 2021 WMP Update, page 272

¹⁵⁸ Response to DR-162, question 9a

¹⁵⁹ Response to DR-162, question 9a

¹⁶⁰ SCE 2021 WMP Update, page 272

¹⁶¹ Version 4, effective 4/1/2020

¹⁶² UVM-07 table 1-CL/CI Based on REAX Stratification for HFRA

¹⁶³ SCE 2021 WMP Update, page 272

Summary.xlsx,” which contains the records of QC circuit miles completed in 2021. Each record provided a grid ID and stated whether the equipment is distribution or transmission, the number of circuit miles within that grid, whether the area is HFRA or non-HFRA, and the QC completion date. The records contain a total of 6,471¹⁶⁴ circuit miles in HFRA and 2,573¹⁶⁵ circuit miles in non-HFRA for a total of 9,044 circuit miles that were QC by SCE. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding performing 5,000 miles of QC inspection circuit miles.

7.13.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.13

Based on the analysis above, Energy Safety finds that SCE provided information consistent with the completion of the work identified in the 2021 WMP Update Initiative 7.3.5.13: Quality Assurance/Quality Control of Inspections (VM-5).

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.”¹⁶⁶

7.14.1 2021 WMP Update Initiative Statements, Supporting Information, and Analysis

In its 2021 WMP Update, SCE states, “SCE recruits and trains qualified personnel, including ISA-certified arborists, to perform quality and timely vegetation management work.”¹⁶⁷

SCE continues, “SCE provides annual training to all vegetation management employees and vegetation contractor lead personnel, called “utility vegetation management (UVM) Core Plans Training.” This training is intended to provide program knowledge to SCE’s certified arborists and others to enhance understanding of the specific requirements of SCE’s VM program.”¹⁶⁸ SCE provided the “UVM-09 Utility Vegetation Management Inspection Manual,”

¹⁶⁴ IE DR 7 Q14_2021 QC Inspection Mileage Summary.xlsx Sum of column “C” HFRA circuit mileage

¹⁶⁵ IE DR 7 Q14_2021 QC Inspection Mileage Summary.xlsx Sum of column “D” non-HFRA mileage

¹⁶⁶ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

¹⁶⁷ SCE 2021 WMP Update, page 273

¹⁶⁸ SCE 2021 WMP Update, page 273

which outlines SCE’s vegetation management programs. The manual discusses the clearance distances for transmission and distribution lines, regulatory requirements and SCE standards, how to identify SCE assets, how to prescribe vegetation work, and discussing environmentally sensitive areas.¹⁶⁹ The UVM-9 training was held on August 31, 2021, for all vegetation management pre-inspection contractors. SCE provided the roster of 471 attendees.¹⁷⁰ SCE provided two arborists who attended the training along with their ISA numbers, employee numbers, and classification.¹⁷¹ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in these statements regarding annual training.

In its 2021 WMP Update, SCE states, “SCE plans to contract with approximately 40 ISA-certified arborists to perform hazard tree assessments in 2021.”¹⁷² SCE continues, “In 2021, SCE conservatively anticipates it will perform 150,000 to 200,000 HTMP assessments and will require a year-end total of approximately 40 ISA Certified assessors to achieve this goal.”¹⁷³

SCE provided 40 hazard tree assessments carried out by each of the 40 ISA-certified arborists in 2021.¹⁷⁴ Each report contained the ISA-certified arborist identification number. The report shows pictures of identified hazardous trees. It relays the following tree information: the tree risk score and mitigation status and gives the location by identifying the grid and circuit. In addition, Energy Safety reviewed the SCE data request response to IE02-SCE-2021 in which SCE stated, “724 circuits were inspected in 2021. Within the 724 circuits inspected, 131,307 trees were assessed.”¹⁷⁵ Energy Safety reviewed the Excel file “02_Q02-VM-1_2021 Assessments,” which contained records of 131,307 HTMP trees assessed and contained the latitude/longitude of each tree along with the date of assessment, prescribed mitigation, HFTD status, and ID and name of circuits.¹⁷⁶ In SCE’s 2021 WMP Update Change Order Report, SCE requested a change for its HTMP assessments from 150,000 to 120,000-130,000 due to “SCE exceeded the number of circuits that it planned to patrol in 2021 (383 as of October 1 [2021] compared to 322 planned for the entire year), SCE found fewer trees with strike potential (subject trees) than originally forecasted and therefore fewer assessments were performed.”¹⁷⁷ Energy Safety’s 2021 WMP Change Order Decision made a determination of “No Change Necessary” to this request.¹⁷⁸ Hence, the target in SCE’s 2021 WMP Update did

¹⁶⁹ 05_UVM-09 - V4_Redacted

¹⁷⁰ 05_UVM-09 VM Inspection Training Roster 8_31_21

¹⁷¹ Response to DR-165, question 1a

¹⁷² SCE 2021 WMP Update, page 273

¹⁷³ SCE 2021 WMP Update, pages 274-275

¹⁷⁴ Response to DR-165, question 2 attachment file “02_ES165-SCE-2021-SVM-04 Q.2_Assessments of ISA Arborist redacted”

¹⁷⁵ IE02-SCE-2021, response to question 2

¹⁷⁶ 02_Q02-VM-1_2021 Assessments

¹⁷⁷ Southern California Edison Company’s 2021 Wildfire Mitigation Plan Update Change Order Report, submitted to E-filing Docket #2021-WMP, November 1, 2021.

¹⁷⁸ 2021 Wildfire Mitigation Plan Change Order Decision: “For a determination of ‘No Change Necessary,’ Energy Safety concluded that the change order and associated updated target, if applicable, was not necessary because it did not relate to a utility’s updated risk assessment or differing understanding of risk.” Page 2

not change. Therefore, Energy Safety’s audit found that SCE did not complete all work identified in this statement regarding performing 150,000 HTMP assessments.

In its 2021 WMP Update, SCE states, “SCE requires that its vegetation QC inspectors are ISA-certified arborists. SCE also employs a number of ISA-certified arborists for internal positions to provide guidance to contractors for SCE's vegetation management activities.”¹⁷⁹ SCE continues, “For line clearing work, SCE requires any person supervising or advising pre-inspection activities in the field to be ISA-certified.”¹⁸⁰ SCE concludes, “Senior Specialists (SSPs) are responsible for coaching and performing work verification on a sample of completed vegetation work performed in their respective work districts to verify contractors are meeting SCE's performance expectations. SCE currently has approximately 41 SSPs across its service area.”¹⁸¹

SCE provided an excerpt from SCE’s UVM-11 Section 4.2 Qualification of UVM Senior Specialists, which states, “UVM Personnel qualified in accordance with Personnel Qualification Standards (PQS) # Utility Vegetation Management Field Technical Specialist (UVMFTS) shall be an International Society of Arboriculture (ISA) Certified Arborist.”¹⁸² SCE also provided a list of SSPs along with their ISA identification number and the district each SSP oversees.¹⁸³ SCE had a total of 41 SSPs in the SCE service area in 2021.¹⁸⁴ SCE confirmed that each SSP provides guidance to tree contractors for SCE’s vegetation management activities and performs work verification (which includes pre-inspection and tree work).¹⁸⁵ In UVM-11 Section 3 stipulates that SSPs review documentation and validate field work completed by contractor work crews.¹⁸⁶ SCE provided two annual verification reports from districts 34 and 51 carried out by the respective SSP in 2021. Each report contains the Grid ID/Circuit ID, species, clearance achieved, incorrect pre-inspection, which identifies “missed trees,” incorrect pruning, and overall SSP comments.¹⁸⁷ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding SCE’s QC inspectors being ISA certified arborists and providing guidance to contractors related to vegetation management activities.

In its 2021 WMP Update, SCE states, “SCE's contractor was able to successfully onboard an additional ten resources in 2020, for a total of 26 to allow SCE to exceed its VM-5 activity target of performing 3,000 risk-based High Fire Risk Areas (HFRA) circuit mile inspections.

¹⁷⁹ SCE 2021 WMP Update, page 273

¹⁸⁰ SCE 2021 WMP Update, page 273

¹⁸¹ SCE 2021 WMP Update, page 275

¹⁸² Response to DR-165, question 3a

¹⁸³ Response to DR-122, question 5, attachment “05_Arborist_Redacted.xlsx”

¹⁸⁴ Response to DR-122 question 5 attachment “05_Arborist_Redacted.xlsx” and Response to DR-165 question 4b

¹⁸⁵ Response to DR-165, question 3b

¹⁸⁶ Response to DR-165, question 3c

¹⁸⁷ Response to DR-165, question 4; attachments “04_ES165-SCE-2021-SVM-04_Q.4 2021 D34” and “04_ES165-SCE-2021-SVM-04_Q.4 2021 D51”

Therefore, since the number of assessments SCE expects to perform in 2021 is in line with those performed in 2020[...]¹⁸⁸ Energy Safety reviewed the Excel file “Q.1_ES193-SCE-2021-SVM-06.xlsx,” which provides the circuits for which SCE performed risk-based inspections. The file contains the following information for each circuit listed: circuit name, type of circuit (distribution or transmission), length of circuit in circuit-miles, length of circuit-miles in the HFRA, and QC completion date.¹⁸⁹ According to this spreadsheet, in 2021, SCE inspected a total of 6,471¹⁹⁰ risk-based circuit miles in the HFRA and 2,635¹⁹¹ circuit miles in non-HFRAs for a total of 9,044 circuit miles. All of these were QC’d by SCE. In response to an inquiry of how SCE prioritized the risk-based circuit-miles, SCE stated “in 2021, SCE’s Vegetation Management worked with several internal organizations to identify the highest risk circuit miles. Once those highest risk circuit miles were identified, SCE’s Vegetation Management overlaid those circuits with its Vegetation Management grid/polygons in its GIS system to calculate the total number of circuit miles within those high-risk grids. Lastly, SCE ensured that 100% of those identified grids were on the annual QC schedule in 2021.”¹⁹² Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding 3,000 risk-based HFRA circuit mile inspections.

7.14.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.14

Based on the analysis above, Energy Safety finds that SCE did not complete all the work of the 2021 WMP Update Initiative 7.3.5.14: Recruiting and Training of Vegetation Management Personnel. See Section 8.1 of this audit for a list of corrective actions.

7.15 Initiative 7.3.5.15 Remediation of At-Risk Species

The purpose of this initiative is to describe the utility’s “action to reduce ignition probability and wildfire consequences attributable to at-risk vegetation species....”¹⁹³

¹⁸⁸ SCE 2021 WMP Update, page 275

¹⁸⁹ Response to DR-193, question 1; attachment

¹⁹⁰ Sum of column “E” HFRA circuit mileage

¹⁹¹ Sum of column “D” minus “E” non-HFRA mileage

¹⁹² Response to DR-193, question 1

¹⁹³ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

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

In its 2021 WMP Update, SCE states, “SCE manages at-risk species and implements clearances to reduce the probability of vegetation contacting electric facilities.”¹⁹⁴ Energy Safety reviewed the SCE spatial quarterly data report (QDR) provided throughout 2021. Each report contained information on completed work SCE performed in its service territory during a specific quarter (Q1, Q2, Q3, Q4) that includes species name, geographical coordinates of work done, growth rate, and mitigation type.¹⁹⁵ The completed work shown in the QDR provides Energy Safety insight of SCE progress of implementing clearances throughout the year in 2021. SCE also provided a list of tree species in SCE territory along with their growth rate and risk rating.¹⁹⁶ Of the 201 species in the SCE territory, 30% were designated as high risk, 31% as medium, and 39% as low.¹⁹⁷ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding at-risk species and clearances.

In its 2021 WMP Update, SCE states, “SCE has categorized its tree inventory species with three growth rate selections (fast, medium, slow).”¹⁹⁸ Energy Safety reviewed SCE’s UVM-03 Distribution Vegetation Management Plan, which contains a list of tree species in SCE territory that categorizes each tree species growth rate as either fast, medium, or slow.¹⁹⁹ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding tree growth rate.

In its 2021 WMP Update, SCE states, “In addition, SCE has documented the list of species contained in SCE’s service area that have historically caused problems such as Tree Caused Circuit Interruptions.”²⁰⁰ SCE provided Energy Safety spatial data that contained the list of species that caused circuit interruptions in 2021.²⁰¹ According to the QDR data, the leading cause of vegetation-caused outages was Palms, with Pine and Eucalyptus coming in second and third. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding documentation of tree-caused circuit interruptions.

In its 2021 WMP Update, SCE states, “SCE removes immature vegetation in the drop-in zone (e.g., overhang) within HFRA and removes or makes safe palms that have the potential to

¹⁹⁴ SCE 2021 WMP Update, page 276

¹⁹⁵ QDR data submitted Q1 May 1st, Q2 August 1st, Q3 November 1st, Q4 February 1st

¹⁹⁶ Response to DR-165, question 5 attachment; “05_ES165-SCE-2021-SVM-04_Q.5_At-Risk Species List.xlsx”;

¹⁹⁷ Response to DR-165, question 5 attachment; “05_ES165-SCE-2021-SVM-04_Q.5_At-Risk Species List.xlsx”; Filter Column E “Risk Rate” for high, medium, low respectively.

¹⁹⁸ SCE 2021 WMP Update, page 276

¹⁹⁹ UVM-03 utility Vegetation Management Distribution Vegetation Management Plan, version 5 page 19

²⁰⁰ SCE 2021 WMP Update, page 276

²⁰¹ QDR data submitted Q1 May 1st, Q2 August 1st, Q3 November 1st, Q4 February 1st

dislodge fronds.”²⁰² Energy Safety reviewed SCE’s UVM-03 Distribution Vegetation Management Plan, which states, “Where practical and achievable, all vegetation in the Drop-in Zone (overhangs) within the designated fire areas shall be removed.”²⁰³ Energy Safety reviewed QDR data that showed SCE completed work.²⁰⁴ For example, in quarter four of 2021, the spatial data showed that 206 palms were mitigated (trimmed/removed). The information for each palm spatial data included HFTD class, SCE district, and latitude and longitude. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding vegetation being removed from the drop-in zone and the removal of palms.

In its 2021 WMP Update, SCE states, “In 2021, SCE will develop and initiate a palm tree removal program to help mitigate the risk of vegetation related ignitions and faults caused directly by palms.”²⁰⁵ SCE provided “ES165-SCE-2021-SVM-04_Q.6_2021 Palm Strategy 010821F”.²⁰⁶ This document discusses the SCE palm removal approach for 2021. It begins with the risk of Palms. Examples given were palm fronds dropping onto primary wires, or dead palm fronds being easily blown long distances by winds, and that Palms are fast growers.²⁰⁷ The document provides a systemic approach on trying to achieve removal on all Palms in high fire areas.²⁰⁸ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding the palm tree removal program.

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

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

7.16 Initiative 7.3.5.16 Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment

²⁰² SCE 2021 WMP Update, page 276

²⁰³ UVM-03 Utility Vegetation Management Distribution Vegetation Management Plan, version 5 page 11

²⁰⁴ QDR data submitted Q1 May 1st, Q2 August 1st, Q3 November 1st, Q4 February 1st

²⁰⁵ SCE 2021 WMP Update, page 277

²⁰⁶ Response to DR-165 question 6

²⁰⁷ Response to DR-165, question 6 attachment; 06_ES165-SCE-2021-SVM-04_Q.6_2021 Palm Strategy 010821F, page 2

²⁰⁸ Response to DR-165, question 6 attachment; 06_ES165-SCE-2021-SVM-04_Q.6_2021 Palm Strategy 010821F, page 3

The purpose of this initiative is to “remediate trees that could potentially strike electrical equipment if failure at the ground-level of the tree or branch breakout within the canopy.”²⁰⁹ Note that SCE’s 2021 WMP Update split this initiative into sub-initiatives: 7.3.5.16.1: Hazard Tree (VM-1) and Dead and Dying Tree Removal (VM-4).²¹⁰ For the purposes of this audit, Energy Safety reaggregated the sub-initiatives into one Initiative 7.3.5.16.

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

In its 2021 WMP Update, SCE states, “SCE takes steps to remove trees that represent a significant fall-in or blow-in risk.”²¹¹ Energy Safety reviewed the data request response to IE02-SCE-2021, in which SCE stated, “724 circuits were inspected in 2021. Within the 724 circuits inspected, 131,307 trees were assessed.”²¹² Energy Safety reviewed two Excel files that supported the total HTMP trees assessed and removed in 2021. “02_Q02-VM-1_2021 Assessments” contained records of 131,307 HTMP trees assessed and contained the latitude/longitude of each tree along with the date of assessment, prescribed mitigation, HFTD status, and ID and name of circuits.²¹³ The “02_Q02-VM-1_2021 Mitigations” contained a total of 3,390 trees with specific records, including the HTMP tree ID, latitude/longitude, work completed date, and work type completed.²¹⁴ 2,815²¹⁵ were removed, 99²¹⁶ palms received skirt removal, and 476²¹⁷ were pruned. Therefore, Energy Safety’s audit found that SCE provided information consistent with an effort to complete the work identified in these statement regarding taking steps to remove trees that represent risk.

In its 2021 WMP Update, SCE states, “SCE plans to continue HTMP in 2021 and anticipates finishing this work in the HFRA by December 2024. Current plans are to perform between 150,000 to 200,000 HTMP assessments in 2021.”²¹⁸ Please see Section 7.14.1 for Energy Safety’s analysis of this statement regarding HTMP assessments. Energy Safety’s audit found that SCE did not complete all work identified in this statement regarding performing 150,000 HTMP assessments.

In its 2021 WMP Update, SCE states, “SCE removes trees that have a high probability of failing due to drought or other conditions such as insect infestations.”²¹⁹ SCE continues, “SCE patrols

²⁰⁹ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

²¹⁰ SCE 2021 WMP Update, pages 277-279

²¹¹ SCE 2021 WMP Update, page 277

²¹² IE02-SCE-2021, response to question 2

²¹³ IE02-SCE-2021; attachment “02_Q02-VM-1_2021 Assessments”

²¹⁴ IE02-SCE-2021; attachment “02_Q02-VM-1_2021 Mitigations”

²¹⁵ 02_Q02-VM-1_2021 Mitigations, filter for “removal” and “removal by other party”

²¹⁶ 02_Q02-VM-1_2021 Mitigations, filter for “palm skirts”

²¹⁷ 02_Q02-VM-1_2021 Mitigations, filter for “pruned”

²¹⁸ SCE 2021 WMP Update, page 278

²¹⁹ SCE 2021 WMP Update, page 279

the entire HFRA areas several times a year as conditions warrant to identify and remove compromised trees.”²²⁰ SCE concludes, “SCE performs all inspections in accordance with Dead & Dying Tree Removal program requirements and in 2021 targets to remove 90% of active inventory within six months. Active inventory reflects trees for which SCE has both access and authorization to perform the removal.”²²¹ Energy Safety reviewed the Excel file “VM-4 2021 Completed DRI Circuits.xlsx,” which provided each circuit that was inspected under VM-4. The file contained the circuit name, circuit record number of inspection, and date of completion. The file showed 944 individual circuits with 1,302 total circuit passes. Two hundred forty-five individual circuits received multiple passes throughout the 2021 year.²²² Excel file “02_Q02-VM-4_2021 Mitigations.xlsx” showed the records of trees mitigated from VM-4. The file contained information for each tree removed, which included the record Identification number, SCE district, circuit name, HFTD status, latitude and longitude, risk assessment date, and mitigation completed date. 2,179 trees mitigated were from trees identified for removal from the 2021 assessments.²²³ Energy Safety calculated that 91% of the active inventory was removed within six months.²²⁴ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in these statements regarding 90% tree removal of active inventory within six months and patrols of HFRA.

7.16.2 Energy Safety’s Determination for 2021 WMP Update Initiative 5.3.5.16.1

Based on the analysis above, Energy Safety finds that SCE did not complete all the work of the 2021 WMP Update Initiative 7.3.5.16: Removal and Remediation of Trees with Strike Potential to Electric Lines and Equipment. See Section 8.1 of this audit for a list of corrective actions.

7.17 Initiative 7.3.5.17 Substation Inspections

The purpose of this initiative is to inspect “vegetation surrounding substations.”²²⁵

²²⁰ SCE 2021 WMP Update, page 279

²²¹ SCE 2021 WMP Update, page 279

²²² Response to IE03_SCE-2021 question 10; attachment “10_VM-4 2021 Completed DRI Circuits”, column ‘B’ filter for duplicates

²²³ Response to IE03_SCE-2021 question 10; “02_Q02-VM-4_2021 Mitigations”, Column ‘G’ filter for 2021

²²⁴ Response to IE03_SCE-2021 question 10; “02_Q02-VM-4_2021 Mitigations”, found the difference of column ‘H’ “mitigation complete” from column ‘g’ assessment date and filter for trees that were removed within six months.

²²⁵ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

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

In its 2021 WMP Update, SCE states, “SCE inspects vegetation around its substations for potential mitigation.”²²⁶ SCE continues, “SCE Substation Operators perform substation inspections in accordance with CPUC GO 174 requirements. Although not specifically referenced in GO 174, SCE monitors substations for vegetation management and conducts inspections of substation perimeter fencing for encroachments. All substations are inspected in accordance with GO 174 except for SCE facilities subject to California Independent System Operator's control and/or subject to FERC reliability standards and Customer Substations which are exempt from GO 174 requirements.”²²⁷ SCE provided a spreadsheet that lists substations that had vegetation inspections in 2021. SCE notes that the spreadsheet gives the records of each substation inspection date, substation type, mitigation date, and notes related to work being completed (i.e., weeds, trees, no work required). There were 230²²⁸ substations that required vegetation mitigation, with 66²²⁹ of those substations being in high fire threat districts. SCE also provided an inspection report subjected to CPUC GO 174 requirements.²³⁰ The substation report was conducted for the month of January 2021. The report directs the inspector to address any weeds within the substation landscape and vegetation encroachment along the fence line within 10 feet. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in these statements regarding substation inspections.

In its 2021 WMP Update, SCE states, “Substation inspections are performed at each substation several times per year and will continue in 2021 and beyond.”²³¹ SCE provided a spreadsheet that lists substations that had vegetation inspections in 2021.²³² In total, 557²³³ substations were inspected in 2021, with 28²³⁴ (5%) substations being inspected twice. The remaining 95%²³⁵ of substation were only inspected once in 2021. Energy Safety does not deem two inspections sufficient as it relates to the statement stating substation inspections are performed “several times per year.” Therefore, Energy Safety’s audit found that SCE did not complete all the work identified in this statement regarding each substation being inspected several times per year.

²²⁶ SCE 2021 WMP Update, page 280

²²⁷ SCE 2021 WMP Update, page 280

²²⁸ 07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections; filter column “F” for year 2021 & 2022

²²⁹ 07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections; filter column “C” for tier 2 and tier 3

²³⁰ ES165-SCE-2021-SVM-04_Q.7_January 2021 Substation Inspection Redacted

²³¹ SCE 2021 WMP Update, page 280

²³² Response to DR-165, question 7; attachment “07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections”

²³³ 07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections, sum total of column A “substation name”

²³⁴ 07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections, sum total of column E “substation name”

²³⁵ 07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections; filter for column E for “1” divided by total number of substations

7.17.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.17

Based on the analysis above, Energy Safety finds that SCE did not complete all the work of the 2021 WMP Update Initiative 7.3.5.17: Substation Inspections. See Section 8.1 of this audit for a list of corrective actions.

7.18 Initiative 7.3.5.18 Substation Vegetation Management

The purpose of this initiative is to take actions “to reduce the ignition probability and wildfire consequences attributable to contact from vegetation to substation equipment.”²³⁶

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

In its 2021 WMP Update, SCE states, “SCE manages vegetation around its substations.”²³⁷ SCE continues, “SCE manages vegetation in proximity to substation equipment, outside the fence line for potential encroachment, or fall in risk by performing pruning, removal, and weed abatement.”²³⁸ SCE provided a spreadsheet that lists substations that had vegetation inspections in 2021.²³⁹ SCE notes that the spreadsheet gives the records of each substation inspection date, substation type, mitigation date, and notes related to work being completed (i.e., weeds, trees, no work required). 230²⁴⁰ substations required vegetation mitigation, with 66²⁴¹ of those substations being in high fire threat districts. SCE also provided an inspection report subjected to CPUC GO 174 requirements.²⁴² The report directs the inspector to address any weeds within the substation landscape and vegetation encroachment along the fence line within 10 feet. Following the evaluation, SCE inspects vegetation around its substations and performs inspections in accordance with CPUC GO 174 requirements. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding vegetation around its substations.

²³⁶ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

²³⁷ SCE 2021 WMP Update, page 280

²³⁸ SCE 2021 WMP Update, page 281

²³⁹ Response to 165, question 7; attachment “07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections”

²⁴⁰ 07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections; filter column “F” for year 2021 & 2022

²⁴¹ 07_ES165-SCE-2021-SVM-04_Q.7.a_2021 Substation Vegetation Inspections; filter column “C” for tier 2 and tier 3

²⁴² ES165-SCE-2021-SVM-04_Q.7_January 2021 Substation Inspection_Redacted

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

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

7.19 Initiative 7.3.5.19 Vegetation Inventory System

The purpose of this initiative is to have a “centralized inventory of vegetation clearances” that includes species, growth forecast, and grow-in, blow-in, or fall-in risk.²⁴³

7.19.1 2021 WMP Update Initiative Statements, Supporting Information, and Analysis

In its 2021 WMP Update, SCE states, “SCE is in the process of consolidating its vegetation programs into a single digital tool to streamline its view and management of vegetation risks.”²⁴⁴ In response to a data request, SCE provided documentation with a “roadmap” related to implementing its consolidation of its vegetation programs into a single digital tool – Arbora.²⁴⁵ SCE states, “This roadmap outlines the different versions of Arbora as SCE consolidates the Vegetation Management (VM) programs into a single digital tool.”²⁴⁶ SCE also instituted a pilot program for Arbora in 2021, as discussed in further detail below. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding consolidating its vegetation programs into a single digital tool.

In its 2021 WMP Update, SCE states, “SCE maintains multiple digital tools for Vegetation Management, including collector/Survey 123 for line clearing inspections and FULCRUM for HTMP, Dead and Dying Tree removal and Pole Brushing.”²⁴⁷ Energy Safety reviewed two screenshots. The first screenshot was of SCE’s management tool Survey123, used for pre-inspectors for inspecting vegetation. It provides the geographical location of the vegetation along with any notes the pre-inspector needs to convey to the tree crew.²⁴⁸ The second was of SCE’s management tool Collector, which can aid SCE staff in identifying Environmentally Sensitive Areas.²⁴⁹ FULCRUM records were provided, including tree identification numbers for

²⁴³ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

²⁴⁴ SCE 2021 WMP Update, page 281

²⁴⁵ Response to DR-165, question 8 attachment “ES165-SCE-2021-SVM-04_Q.8_Planning Initiative Overview – ARBORA.pdf”

²⁴⁶ Response to DR-165 question 8

²⁴⁷ SCE 2021 WMP Update, page 281

²⁴⁸ Response to DR-122, question 3; attachment “03_ES122-SCE-2021-SVM-01-Question 03.a_Survey123Cust-TreeNotesEntry”

²⁴⁹ Response to DR-122, question 7; attachment “07_7e_Sample ESA screenshot”

SCE's tree removal programs HTMP and Dead and Dying Tree.²⁵⁰ Therefore, Energy Safety's audit found that SCE provided information consistent with the completion of the work identified in this statement regarding multiple digital tools used for vegetation management.

In its 2021 WMP Update, SCE states, "Currently, the platform is being piloted for SCE's Dead & Dying Tree Removal program in District 77, which is in SCE's HFRA."²⁵¹ In response to DR-165, SCE provided a PDF "09_ES165-SCE-2021-SVM-04_Q.9_210113_Arbora Project Tracker," which is an update brief related to the Arbora program.²⁵² Arbora consolidating its vegetation programs into a single digital tool. The brief was given in 2021 during week 23 of the pilot being implemented in District 77.²⁵³ The PDF stated that the pilot's overall progress in District 77 is "on track." The PDF states progress since the last update, mentioning "Discussions in progress for margining DRI [Dead & Dying Tree Removal program was known as the Drought Relief Initiative (DRI)] and HTMP programs" and "technical and functional review complete." Therefore, Energy Safety's audit found that SCE provided information consistent with the completion of the work identified in this statement regarding Arbora being piloted in District 77.

7.19.2 Energy Safety's Determination for 2021 WMP Update Initiative 7.3.5.29

Based on the analysis above, Energy Safety finds that SCE provided information consistent with the 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 GO 95."²⁵⁴

²⁵⁰ Response to IE03_SCE-2021 Q1-06, 09 and 10; attachment "10_VM-4_2021 Mitigations" and Response to IE02_SCE_2021 Q2 attachment "02_Q02-VM-1_2021 Mitigations"

²⁵¹ SCE 2021 WMP Update, page 282

²⁵² Response to DR-165, question 9; attachment "09_ES165-SCE-2021-SVM-04_Q.9_210223_Arbora Project Tracker"

²⁵³ Response to DR-165, question 9

²⁵⁴ Resolution WSD-11 – Attachment 2.2: 2021 Wildfire Mitigation Plan Guidelines Template, pages 54-55

7.20.1 2021 WMP Update Initiative Statements, Supporting Information, and Analysis

In its 2021 WMP Update, SCE states, “SCE performs line clearances to mitigate the risk of vegetation contact with energized conductors.”²⁵⁵ Energy Safety reviewed the Quarterly Data Report (QDR) provided by SCE since 2020.²⁵⁶ The QDR gives spatial data on completed SCE programs, which include vegetation management. Vegetation data details the geospatial location, along with HFTD tier designation, mitigation type, and species name. Energy Safety can view all completed vegetation line clearance work done in SCE territory as the quarter progresses throughout 2021. Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding line clearances to mitigate risk.

In its 2021 WMP Update, SCE states, “To improve the overall effectiveness of these mitigations, commencing in late 2020 and continuing through the first quarter of 2021, SCE is holding quality performance meetings with all pre-inspection and pruning contractors to determine what additional measures can be implemented to improve the overall quality of vegetation work.”²⁵⁷

Energy Safety reviewed a presentation used in 2021 between SCE and the pre-inspection/pruning contract company.²⁵⁸ The presentation discusses SCE’s Defense-in-Depth (DID) oversight strategy, as SCE states, “To provide reasonable assurance that vegetation encroachments into SCE’s facilities are minimized.”²⁵⁹ The presentation goes into a brief discussion on what makes up DID, which includes Post Work Verification, Independent Quality Control Inspections, and Quality Assurance reviews. The contractor’s overview quality results of the last 3 months in 2020 were discussed.²⁶⁰ The topic then went on to discuss “Priority 1” (P1) conditions worked by the contractor.²⁶¹ P1s were broken down by district, species, and by month.²⁶² Finally, the presentation ended with an open quality discussion by asking the contractor, “What actions [are being] taken to address performance?” and “Other suggestions to drive improvement?”²⁶³ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding holding quality performance meetings with pre-inspection and pruning contractors.

²⁵⁵ SCE 2021 WMP Update, page 282

²⁵⁶ QDR data submitted Q1 May 1st, Q2 August 1st, Q3 November 1st, Q4 February 1st

²⁵⁷ SCE 2021 WMP Update, 284

²⁵⁸ Response to DR-183, question 2a; attachment “ES183-SCE-2021-SVM-05_Q.2_Quality Performance”

²⁵⁹ “ES183-SCE-2021-SVM-05_Q.2_Quality Performance” slide 4

²⁶⁰ “ES183-SCE-2021-SVM-05_Q.2_Quality Performance” slide 5. Information was redacted due to contractor confidentiality.

²⁶¹ P1 include but not limited to vegetation contacting the conductors

²⁶² “ES183-SCE-2021-SVM-05_Q.2_Quality Performance” slide 6

²⁶³ “ES183-SCE-2021-SVM-05_Q.2_Quality Performance” slide 6 and 8

In its 2021 WMP Update, SCE states, “In 2021 and beyond, SCE will analyze the clearance distances, obtained, specifically when GO 95 Rule 35 Appendix E enhanced clearance are not achieved, to understand the cause of not achieving enhanced clearances.”²⁶⁴ Energy Safety reviewed a presentation given in February 2021 that analyzed the post-trim data from March to December 2020 to identify causes of not achieving SCE standards.²⁶⁵ The presentation discussed SCE’s Grid Resiliency Clearance Distance (GRCD), establishing at least 12 feet of clearance at the time of tree trim in the High Fire Risk Area (HFRA).²⁶⁶ The presentation states, “Post trims are recorded by crews after each trim is completed...When GRCD is not achieved (and documented in the tool), a specific reason code must be selected by the user to indicate the restriction from achieving GRCD.”²⁶⁷ The presentation showed that 87% of trims in HFRA were given the mitigation of GRCD.²⁶⁸ The vegetation that did not receive GRCD clearance which made up 13%. 27% were due to customer denial of GRCD mitigation, 21% tree condition (tree could not be cleared back) GRCD without impact to tree health, and 28% marked as ‘other.’²⁶⁹ The presentation ends with a “Recommendation” on how to reduce customer refusal of GRCD mitigation by developing metrics to monitor Tree Contractor Customer Coordinator Activity.²⁷⁰ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding analyzation of clearance distances.

In its 2021 WMP Update, SCE states, “In 2021 and 2022, SCE will continue evaluating the use of LiDAR in distribution infrastructure and potential QC activities, onboarding qualified resources for a variety of Vegetation Management roles and refine risk modeling to better prioritize and focus SCE’s vegetation efforts to the highest risk areas”²⁷¹ Energy Safety reviewed an Excel file that showed the distribution circuits that were flown in 2021 through 2022.²⁷² The purpose of these flights was to test vegetation clearances and implement LiDAR for QC.²⁷³ The file showed the LiDAR flight completion date and the vegetation management clearance report delivered.²⁷⁴ The file also showed flights in 2022 that were flown over distribution. The file gives the circuit names, date of flight completion, and vegetation management clearance report delivered.²⁷⁵ As stated in Section 5.16.1, SCE provided evidence of onboarding qualified resources by showing evidence that 40 ISA arborists were onboarded

²⁶⁴ SCE 2021 WMP Update, page 284

²⁶⁵ Response to DR-183, question 3; attachment “ES183-SCE-2021-SVM-05_Q.3_GRCD_redacted.pdf”

²⁶⁶ “ES183-SCE-2021-SVM-05_Q.3_GRCD_redacted.pdf”, slide 2

²⁶⁷ “ES183-SCE-2021-SVM-05_Q.3_GRCD_redacted.pdf”, slide 2

²⁶⁸ “ES183-SCE-2021-SVM-05_Q.3_GRCD_redacted.pdf”, slide 3

²⁶⁹ “ES183-SCE-2021-SVM-05_Q.3_GRCD_redacted.pdf”, slide 3

²⁷⁰ “ES183-SCE-2021-SVM-05_Q.3_GRCD_redacted.pdf”, slide 6

²⁷¹ SCE 2021 WMP Update, page 284

²⁷² Response to DR-183, question 4; attachment “04_ES183-SCE-2021-SVM-05_Q.4a_2021-2022 Distribution LiDAR 080823”

²⁷³ Response to DR-183, question 4

²⁷⁴ Response to DR-183, question 4; attachment “04_ES183-SCE-2021-SVM-05_Q.4a_2021-2022 Distribution LiDAR 080823” tab 2021

²⁷⁵ Response to DR-183, question 4; attachment “04_ES183-SCE-2021-SVM-05_Q.4a_2021-2022 Distribution LiDAR 080823” tab 2022

in 2021.²⁷⁶ As it relates to refining risk modeling, SCE provided a pdf, “Vegetation Management Centralized Inspection Strategy and Tree Risk Index Updates,” showing the evolution of SCE’s Tree Risk Index (TRI).²⁷⁷ The TRI is a digital tool that helps pre-inspectors assess vegetation programs like SCE’s HTMP. The PDF showed updating the TRI 4x4 grid matrix to a 5x5 grid matrix by incorporating SCE’s severe risk areas and increasing the percentage of area in TRI category A. The TRI model development and analysis started in 2021 and was finalized in 2022.²⁷⁸ Therefore, Energy Safety’s audit found that SCE provided information consistent with the completion of the work identified in this statement regarding LiDAR, QC activities, onboarding qualified resources, and risk modeling.

7.20.2 Energy Safety’s Determination for 2021 WMP Update Initiative 7.3.5.20

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

8.0 CONCLUSION

Energy Safety reviewed all 20 initiatives pertaining to vegetation management in SCE’s 2021 WMP Update. Energy Safety’s audit found that SCE did not perform all the work specified in five out of the 20 vegetation management initiatives in its 2021 WMP Update. Energy Safety’s audit found that SCE was unable to 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 SCE’s execution of its vegetation management program.

See Table 4 below for a summary of Energy Safety’s findings and corrective actions for SCE pertaining to this audit. Within 10 days following receipt of this audit, SCE must submit a response to the Corrective Actions listed in Table 4 below, as well as supporting documentation.²⁷⁹ SCE must title its response “SCE 2021 SVM Audit Corrective Action Plan” and submit the response on the 2021 SVM Docket in Energy Safety’s E-Filing System.

8.1 Corrective Action

²⁷⁶ SCE 2021 SVM Update, page 34

²⁷⁷ Response to DR-183, question 4; attachment “*ES183-SCE-2021-SVM-05_Q.4d_2023 TRI Strategy (Post-SS#1).pdf*”

²⁷⁸ Response to DR-183 to question 4 follow-up

²⁷⁹ 2023 Compliance Guidelines, Section 6.1, page 14.

Table 4: Findings from Energy Safety's 2021 SVM Audit of SCE

| 2021 WMP Update Initiative Number | Finding | Corrective Action |
|-----------------------------------|---|---|
| 7.3.5.5 | 1. SCE failed to implement a fuel management standard based the Electric Power Research Institute’s study as stated in the 2021 WMP Update “SCE plans will review and analyze the results of the study and implement more regionally appropriate fuel management standards.” ²⁸⁰ | SCE shall detail the steps it is taking to ensure vegetation management operations are consistent with statements made in its WMP. |
| 7.3.5.5 | 2. SCE stated in its 2021 WMP Update that it would perform pole brushing on approximately 200,000 to 300,000 distribution poles in 2021, but it only performed pole brushing on 71% of poles in 2021. | SCE shall detail the steps it is taking to ensure vegetation management operations are consistent with statements made in its WMP. |
| 7.3.5.8 | 3. SCE stated in its 2021 WMP Update that it would inspect approximately 80 transmission circuits using LiDAR in 2021 but inspected 72 transmission circuits in 2021. | SCE shall a) provide a reason why it failed to perform LiDAR on the expected number of transmission circuits; and b) detail the steps it is taking to ensure vegetation management operations are consistent with statements made in its WMP. |
| 7.3.5.14 | 4. SCE stated in its 2021 WMP Update that it would assess 150,000 to 200,000 HTMP trees, | SCE shall detail steps it is taking to ensure accurate |

²⁸⁰ SCE 2021 WMP Update, page 263

| 2021 WMP Update Initiative Number | Finding | Corrective Action |
|-----------------------------------|--|---|
| | but it only assessed 87% of this target. | targets are stated in the WMP. |
| 7.3.5.16 | 5. SCE stated in its 2021 WMP Update that it would assess 150,000 to 200,000 HTMP trees, but it only assessed 87% of this target. | SCE shall detail steps it is taking to ensure accurate targets are stated in the WMP. |
| 7.3.5.17 | 6. SCE stated in its 2021 WMP Update that it performs inspections at each substation multiple times per year, but it did not do so for 95% of its substations in 2021. | SCE shall a) provide a reason why it failed to inspect each substation multiple times per year, and b) detail the steps it is taking to ensure vegetation management operations are consistent with statements made in the WMP. |

DATA DRIVEN FORWARD-THINKING INNOVATIVE SAFETY FOCUSED



OFFICE OF ENERGY INFRASTRUCTURE SAFETY
A California Natural Resources Agency
www.energysafety.ca.gov

715 P Street, 20th Floor
Sacramento, CA 95814
916.902.6000

