**Federal Monitor Interview
Veg QV and Veg QA**

February 2021

**Background**

**Topic**

**Quality Assurance and Quality Verification of Vegetation Management Work**

**Desired Outcome**

**Desired Outcome from Interview**
- Understand the results of PG&E's Quality Assurance and Quality Verification results from 2020 vegetation management work and the Company's plans for 2021 Quality Assurance and Quality Verification.

**What**

**High-Level Agenda**
- Summary of Quality Assurance Audit Results from 2020 Vegetation Management Work
- Summary of Quality Verification Review Results from 2020 Vegetation Management Work
- Current plans for 2021 QA Audits and QV Reviews of Vegetation Management Work
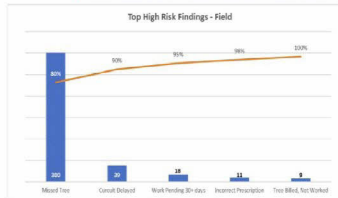
2 • INTERNAL

## Quality Management Key Takeaways

- Findings associated with PG&E cycle extensions between pruning were largely a carryover of 2019 issues in to early 2020. By mid-2020, these findings had nearly been eliminated.

- The biggest contributor to non-compliance findings continues to be "Missed Tree by Pre-inspection". This was the primary cause for QM identified non-compliances.

- Tree contractor performance declined from 2019 to 2020. There was a 64% increase in findings with a 17% decrease in number of trees audited. There was also a 19% increase in contractors invoicing trees as complete with no evidence of trimming.
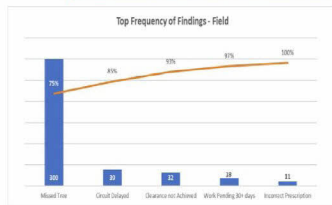
# High Risk 2020 Quality Assurance Results

Top High Risk Findings - Field



## Explanations of Top Findings Based on High Risk

| Category | Finding | Finding Explanation |
|---|---|---|
| Pre-Inspection | Missed Tree | Pre-inspection failure to prescribe work on a tree during inspection. |
| Schedule | Circuit Delayed | Cycle extensions initiated by PG&E either through planned scheduling or diversion of resources to other programs. |
| Tree Contractor | Work Pending 30+ days | Failure to complete work within 30 days of receipt, whether due to staffing or their own prioritization choices. |
| Pre-Inspection | Incorrect Prescription | Pre-inspector prescribed work, but prescribed insufficient clearance or trim frequency |
| Tree Contractor | Tree Billed, Not Worked | Tree Contractor billed work as complete, but QA was unable to find evidence of any cuts |

**Key Takeaways:**
- Missed trees with regard to risk is that potentially it will not be inspected by the routine program for another year. The Second Patrol program might inspect certain HFTD trees, but it won't guarantee that all missed trees would be inspected.

4

# High Frequency 2020 Quality Assurance Results

### Top Frequency of Findings - Field

### Explanations of Top Findings Based on Frequency

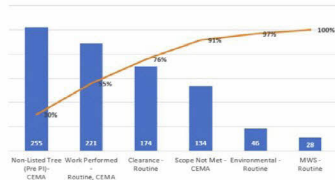| Category | Finding | Finding Explanation |
|---|---|---|
| Pre-Inspection | Missed Tree | Pre-inspection failure to prescribe work on a tree during inspection |
| Schedule | Circuit Delayed | Cycle extensions initiated by PG&E either through planned scheduling or diversion of resources to other programs. |
| Tree Contractor | Clearance not Achieved | Failure to cut tree to prescribed clearance. |
| Tree Contractor | Work Pending 30+ days | Failure to complete work within 30 days of receipt, whether due to staffing or prioritization choices. |
| Pre-Inspection | Incorrect Prescription | Pre-inspector prescribed work, but prescribed insufficient clearance or trim frequency |

**Key Takeaways:**
- Missed trees has consistently been an area with a high number of findings; there has been little improvement in this area over the last several years.

5

# High Risk 2020 Quality Verification Results

**Top High Risk Findings - Field**

**Explanations of Top Findings Based on High Risk**

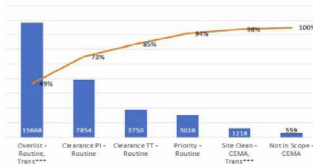| Category | Finding | Finding Explanation |
|---|---|---|
| Pre-Inspection/Tree Trim | Non-Listed Tree (Pre PI) | Tree that was identified as not being worked during a Pre-Inspections or Tree Trim review, that should have been listed to be worked. |
| Tree Trim | Work Performed | Tree does not appear worked, submitted as worked. |
| Pre-Inspection/Tree Trim | Clearance | Tree will not hold growth for 1 year; or 6 months if listed as bi-annual to met required specifications. |
| Pre-Inspection/Tree Trim | Scope Not Met | Tree was not prescribed properly by pre-inspection or not worked properly by tree trim vendor to mitigate hazard or fulfill the scope of work. |
| Pre-Inspection/tree Trim | Environmental | No Riparian Restriction when required, (>1/3 canopy, work within 25 feet of OHWM) |
| Pre-Inspection | MWS | Major Woody Stem—Tree listed does not qualify for MWS or tree qualifies but is not documented with MWS. |

**Key Takeaways:**

- Non-listed trees, Work Performed, and Clearance findings contributes to 76% of the findings, these have the potential to pose a high risk as these are trees that have been identified as not being worked and should have, or not worked as prescribed to mitigate potential hazards (i.e., a tree or part of the tree that fails, has the potential to take out a power line).
- There is an opportunity to ensure vendor accountability, especially those who continuously show poor performance. Vegetation Management understands the concerns associated and are making changes to address.

# High Frequency 2020 Quality Verification Results

**Top Frequency of Findings - Field**

(Pareto chart with bars: 15668 (Overlist - Routine, Trans***), 7854 (Clearance PI - Routine), 5750 (Clearance TT - Routine), 3016 (Priority - Routine), 1213 (Site Clean - CEMA, Trans***), 559 (Not in Scope - CEMA); cumulative line: 49%, 72%, 85%, 94%, 98%, 100%)

### Explanations of Top Findings Based on Frequency

| Category | Finding | Finding Explanation |
|---|---|---|
| Pre-Inspection | Over list | Final clearance above the buffer threshold, no strain or abrasion present, where connecting wood is visible or is less than 6 inches between stems or cannot find (if certain location is found). |
| Pre-Inspection | Clearance | Did not prescribe accurate clearance or trim to proper clearance to mitigate the hazard. |
| Tree Trim | Clearance | Did not achieve prescribed clearance which would have resulted in additional cycles, or not enough clearance to mitigate hazard. |
| Pre-Inspection | Priority | Incorrect per Distribution Routine Patrol Procedure, based on regulatory compliance at time of review. (LRA/SRA 4" to 18") |
| Tree Trim | Site Clean | Brush left from current work with chipper access (within 100 feet), or where 1 or more are true: Average >18 inch depth, Customer satisfaction, safety, Riparian. |
| Pre-Inspection | Not in Scope | Quantity of listed units does not match 1st and 2nd Patrol scope of work, or unable to find. |

**Key Takeaways:**
- Over listed trees and Clearance findings contributes to 85% of the findings.
- Not identifying and prescribing proper clearance or not trimming trees to the proper clearance can contribute to a potential risk of the tree not holding until the next cycle, and lead to possible growth near or within a powerline.
- Over listed trees pose an impact to resource efficiency, at the time of review these trees were identified as not needing to be worked.

7

## 2021 Quality Management Audit Plans

**2021 Plan for Veg Quality Assurance**

QA has doubled the number of distribution compliance audits conducted while decreasing the average audit size by 40%. Overall, this will result in an increase in sampled mileage in trees compared with previous years, which will allow the QA group to provide more frequent, timely feedback to VM operations throughout the transition to Defined Scope. QA is collecting additional data on missed trees in 2021 in order to provide better trending information and drive more meaningful corrective action. QA is also performing audits on both VM transmission programs as well as the Vegetation Control Pole Clearing program.

QA also has a process assessment function that will perform audits throughout 2021. The intent is to review effectiveness of internal procedures and employee and contractor knowledge/adherence. This includes two audits on the EVM program (One in Q1, and one in Q4). Scope is currently being developed for the Q1 audit, and feedback will be solicited from stakeholders prior to setting a scope for the Q4 audit.

| Program Area | Program Review* |
|---|---|
| Transmission & Distribution | Pre-Inspection (PI) |
| | Tree Trimming (TT) |
| | Mid-Cycle (MC) |
| Transmission | Orchard - Focus |
| Distribution | EVM Work Verification |
| | CEMA 2nd Patrol PI |
| | CEMA 2nd Patrol TT |
| VC - Pole Clearing | Clear Only |
| | Chem |
| | Warranty |
| | VMA/1255/ICA - Focus |

**2021 Plan for Veg Quality Verification**

QV will increase the frequency of EVM WV reviews and will continue performing reviews on the programs as seen in the table.

A *Review = Is location-based consisting of an Address, Segment, Span, Source Side Device (SSD), pole. Sample methodologies vary depending on review types:

- Pre-Inspection (PI) – Previous week of PI locations where trees listed for work.
- Tree Trim (TT) – Previous 3 weeks of locations where work has been invoiced as complete.
- Mid-Cycle – Circuits with TT completion dates 5-7 months prior.
- Poles (VC) – Completed projects for Area Work Groups sampled.

8