

## Liberty QA Plan- 2024

CFVM will perform a statistically valid audit of distribution and transmission miles for adherence to regulatory minimum clearance requirements. Audit parameters will stay consistent with those of the 2023 QA audit which set a baseline for future audits. CFVM will provide root cause analysis for any findings. Preliminary start date is July 1. Estimated time to complete is 3 to 4 weeks.

The following information is based on the data set labeled “spans2024-01-23”.

|                            |             |       |
|----------------------------|-------------|-------|
| Total population           | 702.2 miles |       |
| <u>Voltage breakdown</u>   |             |       |
| Distribution               | 607.0 miles | 86.4% |
| Transmission (60kv)        | 62.7 miles  | 8.9%  |
| Transmission (120kv)       | 32.5 miles  | 4.6%  |
| <u>REAX Risk breakdown</u> |             |       |
| Very High                  | 172.8 miles | 24.6% |
| High                       | 140.2 miles | 20.0% |
| Moderate                   | 166.5 miles | 23.7% |
| Low                        | 198.0 miles | 28.2% |
| Temporary reduction        | 24.7 miles  | 3.5%  |

Sample Methodology

95% Confidence  
99% Estimate of compliance  
3% Error rate

A population of 702.2 miles results in a sample size of **41 miles**.

There are 19,877 spans that make up the 702.2 miles. Average span length indicates 1,162 spans must be audited to reach 41 miles. It is recommended that instead of visiting 1,162 separate, random locations, that random locations are “expanded” to 5 spans each. Random sample span length is added until 8.2 miles is reached. In this population, the first 235 spans add up to 8.2 miles. **235**, 5 span locations must be audited in order to reach the minimum sample size of 41 miles. Since the additional 4 spans are not known at the time of planning, completed mileage will be tracked during the audit and more or less locations may be performed as needed.

Sample Breakdown

After randomizing the 19,877 spans in the data set “spans2024-01-23”, the first 235 were labeled “Sample” and numbered 1 through 235. The following is derived from assuming the additional 4 spans around each Sample span have similar length and are multiplied by 5.

|                            |            |       |
|----------------------------|------------|-------|
| Total sample               | 41 miles   |       |
| <u>Voltage breakdown</u>   |            |       |
| Distribution               | 35.1 miles | 85.6% |
| Transmission (60kv)        | 3.3 miles  | 8.0%  |
| Transmission (120kv)       | 2.6 miles  | 6.3%  |
| <u>REAX Risk breakdown</u> |            |       |
| Very High                  | 10.4 miles | 25.4% |
| High                       | 9.0 miles  | 22.0% |
| Moderate                   | 10.1 miles | 24.6% |
| Low                        | 10.2 miles | 24.9% |
| Temporary reduction        | 1.4 miles  | 3.4%  |

#### Audit Duration

CFVM estimates it will take 3 to 4 weeks to complete.

#### Audit Form- Reference data, question and other fields

Status (Pending, Completed, Not Reviewed)

*From data sheet*

Sample/Extra

Sample #

FID

Line ID

Section

Span ID

Voltage

Fire Area

Miles

Auditor

Review Date

**Population**- Count # of trees that have ever been pruned & that may need to be pruned in the next 3 years (will be within the RCD).

***Base all findings on regulatory distances. Assume it is Fire Season during audit.***

Report all...

# Priority 1 Growth Trees (contact or evidence of)

# Priority 2 Growth Trees (within RCD *not a P1*)

# Priority 1 Threat Trees (already failing)

# Priority 2 Threat Trees (failure within 6 months)

# Trees that will not hold minimum regulatory distance for 90 days. (basically at or very near minimum clearance, too close to call or rare situation of a fast grower that won't hold.)

Root cause (multiple choice)

N/A

Scheduling

Missed by Inspection

No-worked by Inspection

No-worked by Liberty

No-worked by Tree Crew

No-worked by QC

Clearance not achieved by Tree Crew

Tree not worked by Tree Crew

MWS not documented

MWS documented and does not qualify

Location Expansion Rules

Audit Sample span plus 2 Other spans on either side. If up against an end pole, add needed Other spans to the other side. If against a tap, choose Other spans to the right. If an Other span is another Sample span, an additional "Other" sample + 4 spans will need to be added, beginning in chronological order with #236.