2023-2025 WMP Joint IOU Covered Conductor Working Group

Topics:

2023-2025 WMP: Joint IOU Report Overview
2023 Workshop Planning

AGENDA

Background

2023-2025 WMP: Joint IOU Report Overview

2023 Workshop Planning

Next Steps

Public

Background

- **2021 WMP Update Decisions: Utilities must coordinate to develop a consistent approach to evaluating the long-term risk reduction and cost-effectiveness of covered conductor deployment, including:**
  - The effectiveness of covered conductor in the field in comparison to alternative initiatives
  - How covered conductor installation compares to other initiatives in its potential to reduce PSPS risk
- **2022 WMP Update Decisions: Added three new requirements:**
  - Lessons Learned: Document all lessons learned and build milestones/goals for best practices that will be implemented
  - Inspection and Maintenance: Compare M&I practices relating to specific failure modes
  - New Technologies: Document effectiveness values for alternative technologies, document best practices and implementation strategies, discuss other potential grid hardening initiatives

2023-2025 WMP - Joint IOU CC Working Group Report

Continuation of Framework established to meet 2021 WMP Update Decisions' Requirements

- Seven focal areas: Testing, Benchmarking, Estimated Effectiveness, Recorded Effectiveness, PSPS Impacts, Alternatives, and Costs
- Provide updated information across these seven workstreams
- Largest focus area in 2022 was Testing

Added New 2022 WMP Update Decisions' Requirements

- Three new focal areas: Lessons Learned, M&I Practices, and New Technologies
- Developed approach and began collecting and discussing data in 2022

54-Page Report

- Exponent Testing Report: 109-page Report not including appendices
- PG&E Testing Report: 71-page Report

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2023-2025 WMP - Joint IOU CC Working Group Report (Cont.)

Estimated Effectiveness

- Continue to share information on calculating effectiveness of CC
- Assess testing results, recorded data, etc. and update calculations where appropriate; SCE and PG&E updated effectiveness calculations

Recorded Effectiveness

- Continue to share data on recorded results
- Data indicate CC is ~70% effective at reducing faults compared to bare conductor

Benchmarking

- No changes from 2021
- New survey to be developed in 2023

Testing

- Conducted significant testing in 2022; a few remaining tests are still in process
- Results illustrate effectiveness of CC
- Continue to discuss results and next steps

Alternatives

- Assessing/developing framework to calculate effectiveness of a combination of mitigations

PSPS Impacts

- Continue to meet and discuss CC ability to reduce PSPS impacts
- No changes from 2021
- Assess testing results and utilities' studies to inform potential changes to PSPS thresholds

Costs

- Continue to update, share, and discuss CC unit costs
- Added first instance of undergrounding unit costs

M&I Practices (New)

- Documented and discussed types of inspections by utility
- Organizing efforts around five categories: general conductor M&I practices; specific CC M&I practices; M&I Training, QA/QC and Inspection types / tools used to conduct inspections

New Technologies (New)

- Documented use of new technologies by utility
- Plans to assess effectiveness values, practices and implementation strategies for select technologies

Lessons Learned (New)

- Documenting lessons learned across all workstreams

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2023 Workshop Planning

Identified Three Workstreams to Conduct Workshops / Discussions with Energy Safety

- Testing, New Technologies, and M&I Practices

Objectives:

- Engagement, participation and feedback from Energy Safety
- Present and discuss certain Testing results
- Present and discuss certain new technologies effectiveness values, practices and implementation strategies
- Present and discuss M&I CC practices and opportunities for lessons learned

Approach:

- Workshops intended to be educational and illicit feedback/questions from Energy Safety
- Minimize overlaps with other WMP-related workshops, meetings, etc.
- Presentation materials sent out prior to workshops
- Utilities to ensure SME and field employee, where applicable, participation
- No longer than 3-hour sessions

Public

2023 Testing Preliminary Workshops and Schedule

Testing

- Conducted significant testing in 2022; a few remaining tests are still in process
- Results illustrate effectiveness of CC
- Continue to discuss results and next steps

Utility	Highlights 2023 Filing
SCE	• CC 100% effective at mitigating arcing/ignition from various CFO scenarios • Increased mitigation effectiveness by 5% due to testing results
PG&E	• Covered conductor could be susceptible to advanced corrosion under certain conditions. • UV exposure could accelerate degradation of CC assets.
SDG&E	• Testing began with results expected in Q2 2023. Benchmarking with IOUs on PSPS wind speed thresholds to implement in Q4 2023.

Topics for 2023 Workshops	Schedule
Aging Susceptibility Testing	June 5, 2023 (9 AM –12 PM)
Arc Testing	August 7, 2023 (9 AM –12 PM)
High Impedance Faults	September 11, 2023 (9 AM –12 PM)
Tree Fall-in	October 16, 2023 (9 AM –12 PM)
Corrosion Testing	TBD

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M&I Practices Preliminary Workshops and Schedule

M&I Practices

- Documented and discussed types of inspections by utility
- Organizing efforts around five categories: general conductor M&I practices; specific CC M&I practices; M&I Training, QA/QC and Inspection types / tools used to conduct inspections

Utility	Highlights 2023 Filing
SCE	• SCE has had specific CC inspection prompts since 2019 • SCE continues to share CC inspection and maintenance practices with all utilities
PG&E	• Update Overhead Inspection Job Aid (TD-2305M-JA02) to include reference images of the type of damage inspectors should look to identify. • Updated inspection criteria and maintenance tag prioritizations for mechanisms, threats, and hazards identified from the Joint IOU Study.
SDG&E	• Continued trainings and demonstrations of Covered Conductor equipment and the types of issues that may be found during inspections.

Topics for 2023 Workshops	Schedule
General conductor and specific CC Training	July 24, 2023 (2 PM – 5 PM)
QA/QC of CC	August 21, 2023 (2 PM – 5 PM)
Recommendations from Testing Results	October 9, 2023 (2 PM – 5 PM)
Inspection Types and Tools Used	November 13, 2023 (2 PM – 5 PM)
General conductor and specific CC M&I practices	TBD

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New Technologies Preliminary Workshops and Schedule

New Technologies

- Documented use of new technologies by utility
- Plans to assess effectiveness values, practices and implementation strategies for select technologies

Utility	Highlights 2023 Filing
SCE	• Reclosing has been a longstanding SCE practice • Fast Curve Settings began in 2018.
PG&E	• Fast Curve Settings (EPSS devices) deployed throughout PG&E's HFRA and HFTD territory. • PG&E's system doesn't have a baseline for recloser effectiveness due to historic inclusion on its systems throughout its territory.
SDG&E	• Deployment of Early Fault Detection began. • Reclosing and Fast Curve Settings (SRP) have been in-place at SDG&E for over 5 years.

Topics for 2023 Workshops	Schedule
Fast Curve Settings	June 21, 2023 (9 AM –12 PM)
DFA: Discuss implementation strategies, practices and effectiveness	July 12, 2023 (9 AM –12 PM)
EFD: Discuss implementation strategies, practices and effectiveness	September 20, 2023 (9 AM –12 PM)
REFCL: Discuss implementation strategies, practices and effectiveness	November 8, 2023 (9 AM –12 PM)
Disable Reclosing Settings	TBD

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Next Steps

- **Confirm approach, schedule, etc. with Energy Safety**
- **Schedule Workshops**
- **Develop presentation materials**
- **Execute Workshops**

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