

ODI Covered Conductor Training

April 6, 2020

Energy for What's AheadSM



Purpose

ODI is adding two questions to the Inspect App survey related to covered conductor and associated hardware. The goal of the question additions is to determine if covered conductor is installed at the structure and if covered conductor is installed, validate the appropriate covered conductor protective hardware is installed correctly.

Objectives:

1. Understand added questions to survey and purpose
2. Understand covered conductor hardware and conductor type

CC Question Additions and Purpose (2 questions)

Validate CC is present on structure and select all applicable directions of CC

- If covered conductor is present on the pole, select all applicable directions covered conductor is installed.
 - North
 - South
 - East
 - West
 - No covered conductor installed

Validate each direction of CC span per pole

Size and Type:

- **ACSR – 1/0, 336, 653**
- **Hard drawn copper: #2, 2/0, 4/0**

If CC is installed, determine appropriate CC protection is installed

- If covered conductor is present on the pole, indicate which of the following covered conductor covers are missing.
 - Missing dead-end covers
 - Any bare jumper
 - Missing connector covers
 - Missing fuse covers
 - Missing lightning arrestor covers
 - Missing equipment bushing covers
 - Missing pothead covers
 - No missing covered conductor cover

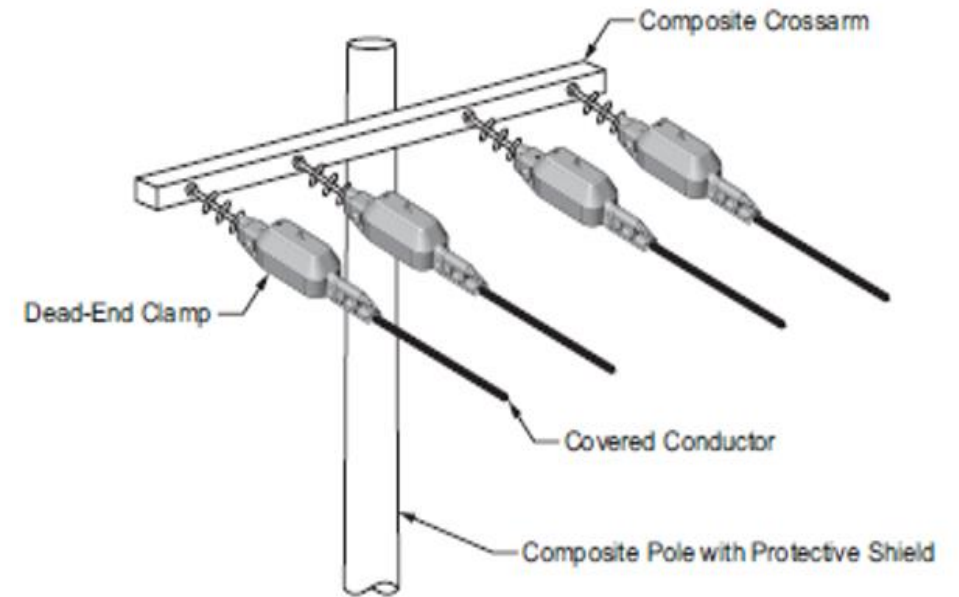
Risk Associated with Missing CC Hardware

Issue	Risk
Missing Dead-end Covers	Exposed conductor is present at dead-ends. The increased length of exposed present at dead-ends leads to an increased contact with wildfire or vegetation risk and possible failure at the bare to covered transition point when arcing occurs. Dead-end covers minimize these risks.
Bare Jumper	Exposed conductor will lead to contact with object risk and possible failure at the bare to covered transition point when arcing occurs.
Missing Connector Covers	Exposed conductor is present at connection points, leading to contact with object risk and possible failure at the bare to covered transition point when arcing occurs. Connector covers minimize the risk.
Missing Fuse Covers	Exposed connections points on the fuse may lead to phase-to-phase or phase-to-ground contact. Single phase configuration will have a lower risk of phase-to-phase contact compared to three phase configuration due to spacing.
Missing Lightning Arrester Cover	Exposed connections points on the lightning arrester may lead to phase-to-phase or phase-to-phase contact.
Missing Equipment Bushing Cover	Exposed connections points on the equipment arrester may lead to phase-to-phase or phase-to-ground contact.
Missing Pothead Cover	Exposed connections points on the pothead may lead to phase-to-phase or phase-to-ground contact.

CC Dead-End Covers

Per the Distribution Overhead Standard (DOH CC 150.2):

- Dead-ends shall be covered with a Dead End Clamp in covered conductor systems.
- Covering dead-ends will ensure that stripped portions of the covered conductor at the dead-end will be protected from contact.
- Dead-end Clamp Cover



CC Covered Jumper

- All overhead primary taps, leads, and jumper wires shall be covered
- Wildlife primary tubing is approved CC protection
- Protected Ground Wire (PGW) is approved CC protection
- Both displayed in illustration



CC Connector Covers

- Bolted wedge connectors shall be used for tap connections in CC systems. This includes overhead line taps, U/G risers, and equipment taps
- Parallel grooves and hotline clamps shall not be used in CC systems
- Bolted wedge connects shall be covered with connector cover



CC Fuse Covers and Lighting Arrestors

All overhead primary fuse holders and lighting arrestors are required to be covered with approved wildlife protection on CC systems



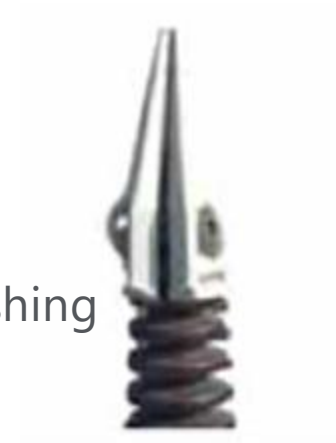
CC Equipment Bushing Cover

All primary equipment must be covered on a CC system

Recloser/Regulator
Cover



Transformer Bushing
Cover



CC Pothead Cover

Large Pothead Cover



All primary potheads and terminations must be covered by approved hardware on CC systems

Small Pothead Cover



ODI CC Questions and Reference Material

Reference: [Distribution Overhead Construction Standards CC 100](#)

