Utility Pole Safety

Safety and Enforcement Division
May 12, 2016

Fadi Daye, P.E.
Program & Project Supervisor
Electric Safety and Reliability Branch
Typical Utility Pole

- The structure used to support supply and or communication conductor cables and associated equipment
- Wood poles
- Concrete poles
- Metal poles
- Fiberglass
Fundamental Safety Problems with Utility Poles

Electric Investor Owned Utilities (IOUs) and Communication Infrastructure Providers (CIPs):

- Neglect / opportunity based maintenance
- Flawed rules
- CIPs adding facilities to existing poles
- Inspectors failing to capture violations
- IOUs/CIPs Inspectors not familiar with the GOs
- Long inspection cycles, e.g. 25 years
Pole Problems and Violations

Pole problems and violations will cause serious injuries to the public and damage to properties:

• Pole Overloading
• Safety factor
• Pole transfer ("buddy pole")
• Climbing space
• Working space
• Pole locations
Pole Overloading

Factors that affect overloading of a pole:

- Weight of equipment
- Weight of conductors
- Conductor tensions
- Height of conductors
- Height of equipment
- Wind forces (on poles, equipment, and conductors)
- Remaining wood strength
- Pole depth
- Low safety factor
Safety Factor

- A measure of a pole’s resistance to breaking
- Ratio of the maximum tensile strength of the pole over the working load
- Inversely related to the “loads” on a pole
- Loads depend on winds, weight of facilities, tensions on conductors

This rope is rated to 30 kN.

When it is holding a 2 kN load, the safety factor is 15:1.
Examples of Pole Overloading and Low Safety Factors
Examples of Pole Overloading and Low Safety Factors - continued

Malibu 2014
Examples of Pole Overloading and Low Safety Factors - continued
Examples of Pole Overloading and Low Safety Factors - continued

Nuevo

Arcadia
Examples of Pole Overloading and Low Safety Factors - continued

El Cajon
Pole Transfer – “Buddy Pole”

- A “buddy pole” is an old pole that should be removed, but is instead left in the field.
- Existed for many years.
- CIPs frequently ignore the requirements to transfer their facilities.
Examples of Buddy Poles

Hidden Valley

El Cerrito

Oakland
Examples of Buddy Poles - continued
Lake Elsinore
Examples of Buddy Poles - continued
Examples Climbing Space/Working Space Violations and Others
What is SED Doing?

- Committed to driving a safety culture
- Electric and CIP audits
- Active in proposing new safety rules
- Researching new technology
- Citations for IOUs
- Seeking Citations for CIPs