An Electric Industry Perspective on Wireless Pole Attachments

The Electric Industry Interest

- **Electric industry's core mission is to provide safe and reliable electric service at reasonable prices.**
  - This means ensuring the safety of electric utility workers and others.
  - This requires case-by-case analysis of specific conditions and attachments.
- **Electric utilities do not compete with wireless service providers in communications services markets.**
  - Electric utilities have no competitive interest in limiting access to poles.
- **Electric utilities do not have monopoly power over wireless carriers; and there is a large/competitive collocation market**
  - Poles are not essential wireless facilities; wireless carriers have other options.
  - Wireless carriers are sophisticated negotiators.

Wireless Attachments' Characteristics Vary

- **Wireless Attachments not uniform in character.**
  - **They can be small or large, but many are not "unobtrusive " or "aesthetically friendly installations."**
  - **They can be installed on other structures (e.g., billboards, buildings, etc.).**
  - **They are installed at different locations on utility poles:**
    - Some are installed on pole tops and others are installed in the electric supply space or the communication space.
    - Most require a power supply, meter equipment or communication box below the communications space.
  - **The equipment weight "varies depending on the specific needs of the installment."**

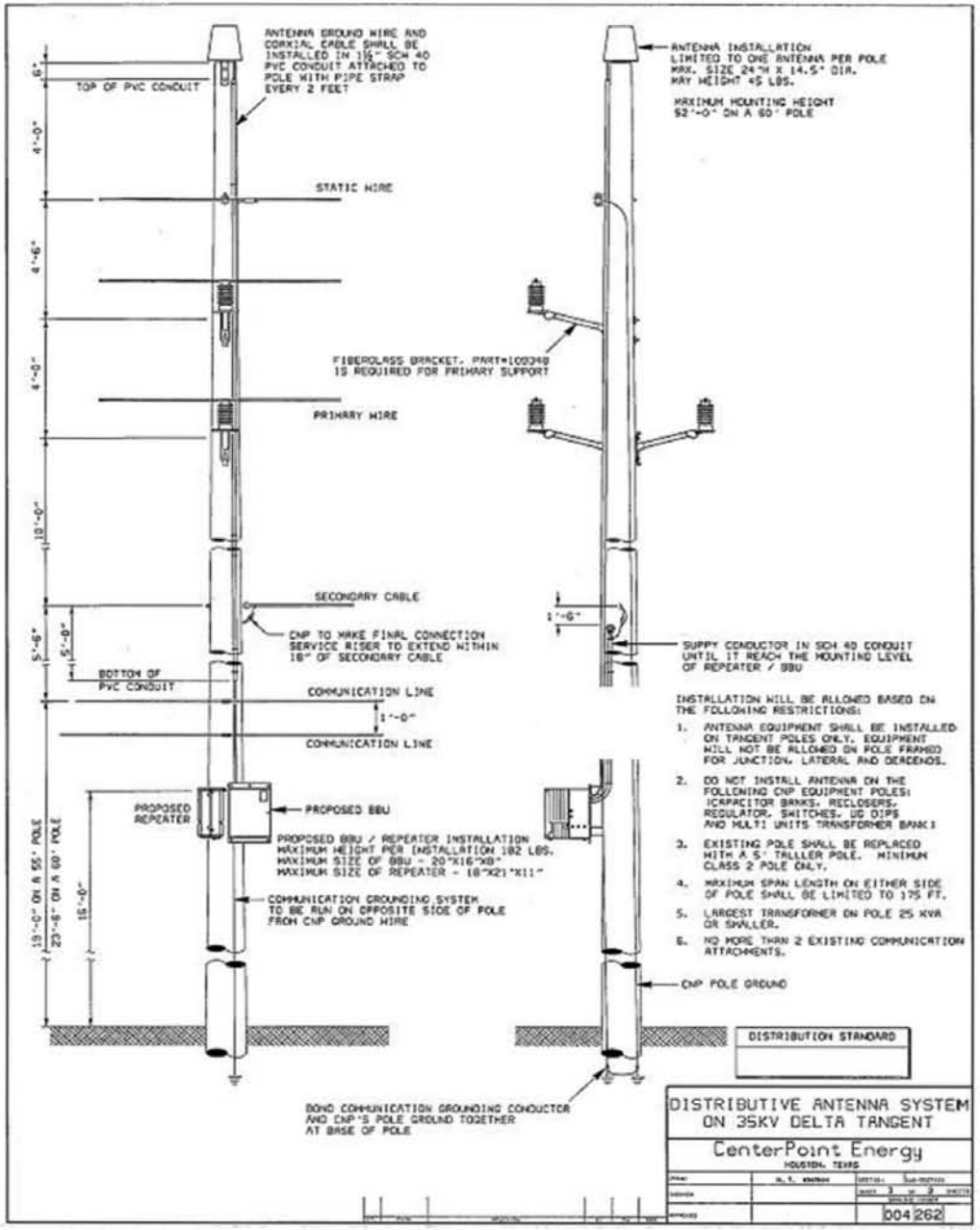
alvarion

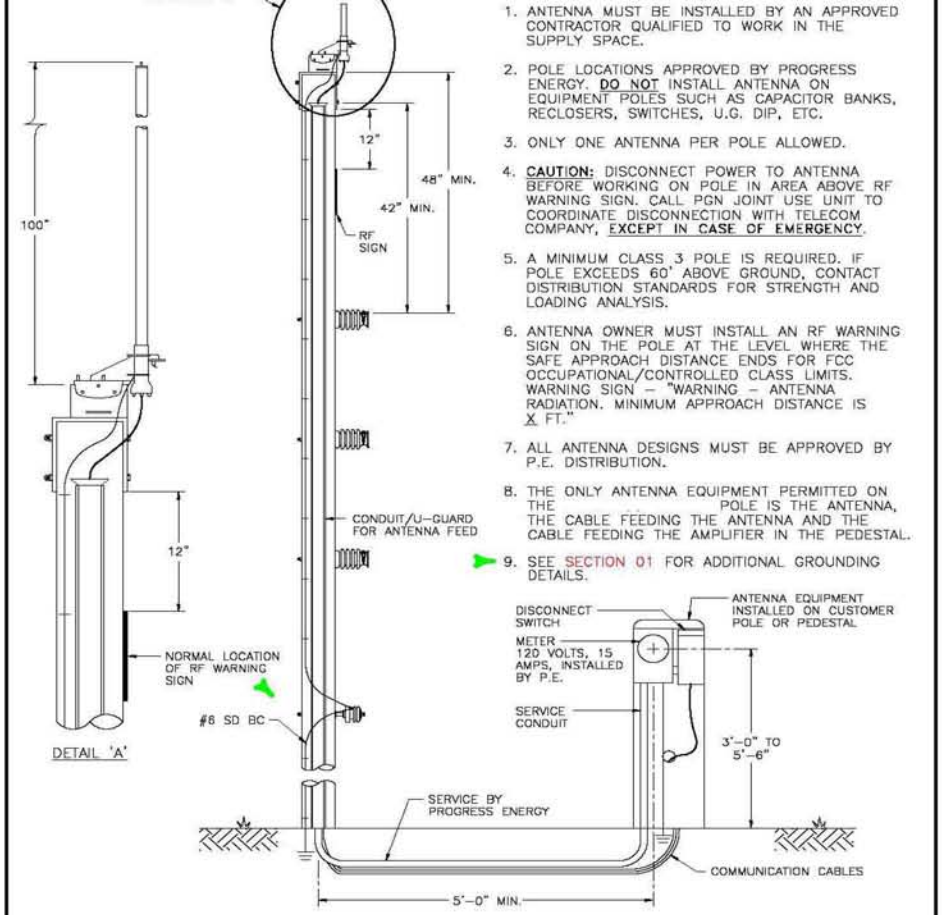
Safety & Reliability Requires Case-By-Case Approach to Access

- **Each region/locality has particular conditions (e.g., wind storms, hurricanes, ice/snow, earthquakes) that the National Electric Safety Code (NESC) intends utilities to account for.**
- **The NESC does <u>not</u> answer all utility safety concerns or eliminate the need study proposed attachments – it is only a starting point for utilities to analyze the safety and reliability of proposed attachments in a specific locale.**
  - The NESC is not a design standard; it is a guide for utilities to develop their own standards based on local conditions.
  - Utility standards may generally exceed the NESC to meet specific system and local conditions.
  - Different poles have different loading and capacity requirements. Engineering studies must also account for *other* attachments – not only wireless attachments.
  - Radio Frequency (RF) safety and grounding are additional specific considerations.

NESC Compliance Alone Does Not Ensure Safety & Reliability

- **Utilities must conduct case-by-case study of clearances, worker safety issues, RF emissions, pole loading, and worker space on poles.**
- **NESC Rule 235I is only one of many rules to be applied to determine whether pole top and supply space attachments are safe (e.g., rules on work clearances and RF clearances).**
  - Most communications workers are not "qualified-electric workers" per NESC Rule 235I(1) and OHSHA regulations.
- **Utility attachments are not comparable to 3rd party wireless attachments. Utility attachments are installed**:
    - Per NESC requirements for electric attachments.
    - By qualified-electric workers.
    - At different pole locations.


ANTENNA GROUND WIRE AND COAXIAL CABLE SHALL BE INSTALLED IN 1½" SCH 40 PVC CONDUIT ATTACHED TO POLE WITH PIPE STRAP EVERY 2 FEET
TOP OF PVC CONDUIT
6"
4'-0"
STATIC WIRE
4'-6"
4'-0"
PRIMARY WIRE
10'-0"
SECONDARY CABLE
5'-6"
5'-0"
CNP TO MAKE FINAL CONNECTION SERVICE RISER TO EXTEND WITHIN 18" OF SECONDARY CABLE
BOTTOM OF PVC CONDUIT
COMMUNICATION LINE
1'-0"
COMMUNICATION LINE
PROPOSED REPEATER
PROPOSED BBU
PROPOSED BBU / REPEATER INSTALLATION MAXIMUM HEIGHT PER INSTALLATION 182 LBS. MAXIMUM SIZE OF BBU - 20"X16"X8" MAXIMUM SIZE OF REPEATER - 18"X21"X11"
COMMUNICATION GROUNDING SYSTEM TO BE RUN ON OPPOSITE SIDE OF POLE FROM CNP GROUND WIRE
19'-0" ON A 55' POLE
23'-6" ON A 60' POLE
15'-0"
BOND COMMUNICATION GROUNDING CONDUCTOR AND CNP'S POLE GROUND TOGETHER AT BASE OF POLE
ANTENNA INSTALLATION LIMITED TO ONE ANTENNA PER POLE MAX. SIZE 24"H X 14.5" DIA. MAX WEIGHT 45 LBS.
MAXIMUM MOUNTING HEIGHT 52'-0" ON A 60' POLE
FIBERGLASS BRACKET, PART#100349 IS REQUIRED FOR PRIMARY SUPPORT
1'-6"
SUPPLY CONDUCTOR IN SCH 40 CONDUIT UNTIL IT REACH THE MOUNTING LEVEL OF REPEATER / BBU
INSTALLATION WILL BE ALLOWED BASED ON THE FOLLOWING RESTRICTIONS:
1. ANTENNA EQUIPMENT SHALL BE INSTALLED ON TANGENT POLES ONLY. EQUIPMENT WILL NOT BE ALLOWED ON POLE FRAMED FOR JUNCTION, LATERAL AND DEADENDS.
2. DO NOT INSTALL ANTENNA ON THE FOLLOWING CNP EQUIPMENT POLES: (CAPACITOR BANKS, RECLOSERS, REGULATOR, SWITCHES, UG DIPS AND MULTI UNITS TRANSFORMER BANK)
3. EXISTING POLE SHALL BE REPLACED WITH A 5' TALLER POLE. MINIMUM CLASS 2 POLE ONLY.
4. MAXIMUM SPAN LENGTH ON EITHER SIDE OF POLE SHALL BE LIMITED TO 175 FT.
5. LARGEST TRANSFORMER ON POLE 25 KVA OR SMALLER.
6. NO MORE THAN 2 EXISTING COMMUNICATION ATTACHMENTS.
CNP POLE GROUND
DISTRIBUTION STANDARD
DISTRIBUTIVE ANTENNA SYSTEM ON 35KV DELTA TANGENT
CenterPoint Energy
HOUSTON, TEXAS
004262



1. ANTENNA MUST BE INSTALLED BY AN APPROVED CONTRACTOR QUALIFIED TO WORK IN THE SUPPLY SPACE.
2. POLE LOCATIONS APPROVED BY PROGRESS ENERGY. DO NOT INSTALL ANTENNA ON EQUIPMENT POLES SUCH AS CAPACITOR BANKS, RECLOSERS, SWITCHES, U.G. DIP, ETC.
3. ONLY ONE ANTENNA PER POLE ALLOWED.
4. CAUTION: DISCONNECT POWER TO ANTENNA BEFORE WORKING ON POLE IN AREA ABOVE RF WARNING SIGN. CALL PGN JOINT USE UNIT TO COORDINATE DISCONNECTION WITH TELECOM COMPANY, EXCEPT IN CASE OF EMERGENCY.
5. A MINIMUM CLASS 3 POLE IS REQUIRED. IF POLE EXCEEDS 60' ABOVE GROUND, CONTACT DISTRIBUTION STANDARDS FOR STRENGTH AND LOADING ANALYSIS.
6. ANTENNA OWNER MUST INSTALL AN RF WARNING SIGN ON THE POLE AT THE LEVEL WHERE THE SAFE APPROACH DISTANCE ENDS FOR FCC OCCUPATIONAL/CONTROLLED CLASS LIMITS. WARNING SIGN – "WARNING – ANTENNA RADIATION. MINIMUM APPROACH DISTANCE IS X FT."
7. ALL ANTENNA DESIGNS MUST BE APPROVED BY P.E. DISTRIBUTION.
8. THE ONLY ANTENNA EQUIPMENT PERMITTED ON THE POLE IS THE ANTENNA, THE CABLE FEEDING THE ANTENNA AND THE CABLE FEEDING THE AMPLIFIER IN THE PEDESTAL.
9. SEE SECTION 01 FOR ADDITIONAL GROUNDING DETAILS.

LINE INSULATION:
BECAUSE POLE GROUND GOES TO TOP OF POLE, EXISTING LINE INSULATORS MUST BE HIGHER VOLTAGE THAN NORMAL.

12KV SYSTEM:
USE 35KV INSULATOR

23KV SYSTEM:
USE 45KV INSULATOR

3			
2			
1			
0			
REVISED	BY	CK'D	APPR.

JOINT USE CONSTRUCTION
(DAS) DISTRIBUTED ANTENNA SYSTEMS

Pole Owners Do Not "ignore" FCC Rules & Policies

- **No evidence of widespread excessive pole attachment charges.**
- **Wireless attachments impose unique costs:**
  - Space, maintenance and power costs are different from wireline attachments and vary among wireless attachments.
  - The variable nature of wireless attachments requires utilities to have flexibility to recover all their costs through negotiated rates.
- **No evidence of widespread delayed access by electric utilities.**
  - Utilities must have flexibility to conduct studies to ensure safety and reliability based on local conditions and specific attachments.
  - Electrical <u>and</u> RF safety issues are raised by wireless attachments

Conclusions (1)

- FCC should affirm utilities must be able to recover all of their specific costs by negotiating just and reasonable rates with wireless carriers. A uniform wireless attachment rate is not appropriate.
- The FCC should affirm utilities' section 224(f)(2) right to determine access on the basis of safety, reliability, capacity and generally applicable engineering reasons.
- The FCC should affirm state/local jurisdiction over safety and reliability.

Conclusions (2)

- **FCC should allow utilities to determine on a case-by-case basis:**
  - Whether installation of ADSS in the power space on poles is safe.
  - Whether installation of equipment boxes in unusable space on poles is safe.
  - Whether is it is safe to allow attachers to use any qualified electrical worker to perform make-ready.
  - Whether to allow access to street light and distribution poles for attachments above a certain voltage.
  - **FCC should affirm utilities' flexibility to conduct pre-construction surveys and make-ready.**
  - Mandated deadlines may undermine safety and reliability.
- **The FCC should continue to rely on general rules and case-by-case review of disputes.**

Questions?

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