BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking Regarding the Applicability of the Commission's Right-Of-Way Rules to Commercial Mobile Radio Service Carriers.	R.14-05-001 (Filed May 1, 2014)

JOINT INFORMATIONAL REPORT OF SAN DIEGO GAS AND ELECTRIC COMPANY (U 902-E), SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E), AND PACIFIC GAS AND ELECTRIC COMPANY (U 39-E), ADDRESSING MATTERS IDENTIFIED IN THE BODY OF THE ADMINISTRATIVE LAW JUDGE'S RULING DATED SEPTEMBER 5, 2014

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October 21, 2014

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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I. INTRODUCTION

On September 5, 2014, Administrative Law Judge Timothy Kenney issued a Ruling Regarding Informational Reports and Workshops ("Ruling") requiring San Diego Gas and Electric Company, Southern California Edison Company and Pacific Gas and Electric Company (collectively, the "Joint Parties") to file and serve informational reports by October 21, 2014. The Ruling also set forth fifteen questions to be addressed in the informational reports. Accordingly, the Joint Parties have prepared the following fifteen responses as their informational report. Pursuant to the instructions in the Ruling, these responses have been verified by officers of the Joint Parties in accordance with Rule 1.11 of the California Public Utilities Commission's Rules of Practice and Procedure. We look forward to working with the other parties at the Commission-led workshops to be held in early November, during which we can discuss our responses and elaborate where necessary.

II. JOINT PARTIES INFORMATIONAL REPORT

Q1. A well-illustrated description of Commercial Mobile Radio Service (CMRS) pole attachments, including the various types, sizes, loads, locations on poles, safety clearances, and system configurations.

Response to Question 1:
CMRS pole attachments are generally comprised of the following facilities:

A. Antennas (See Attachment – A)

1. Types: Antennas attached to joint use utility poles are typically rods or panels. Rods are typically non-dielectric and transmit/receive radio signals in all directions (omni-directional). Panels are typically comprised of a metallic (dielectric) wire or non-dielectric rod encased by a plastic, composite, or metallic exterior, and transmit/receive radio signals in a more precise direction compared to an omni-directional antenna.
2. Sizes: Rod dimensions vary by company and intent. Lengths typically range from 18 in. to 4 ft. and diameters range from .5 to 3-4 inches. Weights vary according to length, diameter, and covering. Uncovered rods range from 3 -18 oz. Panel dimensions also vary by company and intent. Generally, panels are rectangular in shape, with dimensions ranging from 8 in. x 4 in. x 4 in. to 48 in. x 6 in. x 8 in. Weights vary according to size and composition; however, individual panels may range from 3 - 20 lbs.
3. Loads: Transverse (wind) loading on rods and panels vary due to dimensions and attachment point on the pole. Due to their multiple flat surfaces, panels create an increased wind load effect compared to rods. Vertical loading for rods and panels also vary due to dimensions and attachment points.
4. Locations on poles: CMRS antennas are typically installed a few feet above or below the space traditionally occupied by communication cable (wireline) attachments, on joint use utility poles supporting Class T, C, L, or H circuits (up to 50 kV). CMRS antennas are also located at pole-top slightly above the uppermost communication cable on joint use poles supporting only Class C circuits. CMRS antennas are less frequently installed at pole-top several feet above the uppermost electric supply lines on joint use poles supporting Class T, L, or H circuits (up to 50 kV). Antennas embedded in communication cables or affixed to messengers are typically located in the space traditionally occupied by other Class C circuit cables on joint use poles supporting Class C, T, L, or H circuits (up to 60 kV). CMRS antennas are also installed at pole-top several feet above the uppermost electric supply or communication guy on structures commonly referred to as guy stubs.
5. System configurations: CMRS antennas located in traditional communication space (either above or below existing Class C circuits) are typically installed on crossarms or brackets. CMRS antennas located at pole-top are either affixed directly to the surface of the pole, or installed on crossarms or brackets. In both instances, antennas are connected to pole or ground mounted equipment via multiple uncovered or covered communication

cables traversing the support pole. Where traversing Class T, L, or H circuits, connecting cables and ground wires must be installed with suitable protective covering, constituting one or more vertical riser. Typically, CMRS antenna installations require an electric service connection from an overhead or underground Class L circuit to pole or ground mounted communication equipment. Where such connections originate from an overhead (pole) source, at least one additional vertical riser is required. See also, Attachment – E.

6. Safety Clearances: See response to Question #3.

B. Equipment (See Attachment – B)

1. Types: CMRS equipment typically includes, but is not limited to, light wave converters, amplifiers, remote radio units, grounding devices, and batteries. Pole and ground mounted equipment is often encased in metal (dielectric) boxes of varying dimensions, shapes, and weights. Equipment boxes or coverings may also be comprised of plastic or composite (non-dielectric) materials.
2. Sizes: Pole and ground mounted equipment dimensions vary by company, but generally, pole mounted CMRS enclosures are rectangular in shape with dimensions that may range from 12 in. x 4 in. x 4 in. up to 60 in. x 24 in. x 36 in.
3. Loads: Transverse (wind) loading on CMRS pole mounted equipment varies due to dimensions and attachment heights. Due to their multiple flat surfaces, equipment panels create an increased wind load effect compared to associated vertical cable risers. Vertical loading for equipment and cable risers also vary due to dimensions and attachment points. Weights may vary depending on dimensions and type of equipment contained. Individual pieces of equipment may range from 5 -150 lbs.
4. Locations on poles: The installation of CMRS equipment on joint use poles may be limited (in part) by city or county ordinances, the presence of existing equipment, interference with vehicular or pedestrian traffic, and/or impeding a line workers ability to safely ascend and descend a pole by utilizing fall restraint equipment. Where approved, pole mounted equipment is typically installed between 2 ft. above the ground line to a height of 16 ft. above the ground line. Notably, ground mounted or subsurface CMRS equipment is often utilized and often located several feet away from the base of the pole.
5. System configurations: The types of CMRS equipment described above are incorporated in CMRS installations on an as-needed basis. (See 'system configuration' response for antennas.)
6. Safety Clearances: See response to Question #3.

C. Associated elements (See Attachment – C)

1. Types: CMRS antenna elements are cables, messengers, risers (covered and uncovered) ground wires, bond wires, and incidental wiring. Associated Class C coaxial or fiber optic cables (self-supporting or lashed to a messenger) may extend from pole-to-pole as part of a larger network connection and are also typically installed as vertical risers that extend from pole mounted equipment or from the ground line (connecting antennas to ground mounted or subsurface equipment). Ground wires are typically insulated and are connected to both antennas and equipment. Bond wires are typically insulated and interconnected with grounded equipment and grounded enclosures. Incidental wiring is typically insulated and are the exposed cables and/or wires extending from the top or bottom vertical risers.
2. Sizes: CMRS antenna cables, messengers, risers (covered and uncovered) ground wires, bond wires, and incidental wiring sizes and dimensions vary by company, but generally, vertical cable riser sizes range from 3 in. to 5 in. diameters
3. Loads: CMRS cables (described above) extending pole to pole are subject to the same transverse (wind) loading requirements as identical Class C cables owned and operated by other communication infrastructure providers (CIPs). Transverse and vertical loading for vertical risers varies due to dimensions, content, and number (of risers), however, the requirements for CMRS elements are the same as identical CIP elements, except where utilized above electric supply lines, in which case the requirements for Grade A construction apply.
4. Locations on poles: CMRS cables and messengers extending pole to pole are installed in the same portion of the pole typically occupied by cables owned and operated by other CIPs. CMRS vertical risers and grounds terminating at the level of the pole typically occupied by Class C circuits occupy the same portion(s) of the pole typically occupied by other CIP facilities. CMRS vertical risers and grounds extending to pole-top (i.e., traversing Class T, L, and H circuits [up to 50 kV]), occupy pole space typically utilized by electric supply utilities for pole to pole wires, equipment (e.g., transformers, regulators, capacitors, switches), and vertical cable risers.
5. System configurations: The number, sizes and types of elements described above are incorporated in CMRS installations on an as-needed basis. (See 'system configuration' response for antennas.)
6. Safety Clearances: See response to Question #3.

D. Support elements (See Attachment D)

1. Types: CMRS "support elements" include but are not limited to crossarms, braces, brackets, pole-top extensions, and related hardware (e.g., nuts, bolts, washers, etc.). Crossarms and brackets are typically used to support antennas; however, as described above, certain antennas are affixed to messengers or embedded in communication cables. Braces and related hardware are utilized to strengthen and stabilize crossarms and brackets. Rule 94.3 specifies that support elements utilized at pole-top above supply lines must meet the requirements for Grade A construction as specified in Rule 44, Table 4.
2. Sizes: CMRS antenna support elements such as crossarms and brackets vary by company and are designed to suit each company's particular need. Crossarms are typically wood (but may be polymer or other engineered materials) and range in length from 5 ft. to 12 ft. with exterior dimensions ranging from 3 in. x 4.5 in. to 5 in. x 7 in. Crossarm and bracket braces are typically metallic and sizes vary according to the application. Pole-top extensions are typically comprised of a lower cylindrical metallic frame and a square wood or polymer upper portion. The upper portion of the pole top extension ranges in length from 4 ft. to 7 ft. and can weigh over 100 lbs.
3. Loads: Transverse loading for crossarms, brackets, braces, and pole-top extensions varies due to dimensions and configuration, however, the requirements for CMRS support elements are the same as identical CIP support elements, except where utilized above electric supply lines, in which case the requirements for Grade A construction apply.
4. Locations on poles: CMRS support elements are typically installed in that portion of the pole typically occupied by other communication infrastructure providers (below electric supply lines). CMRS support elements may also be installed at pole-top (above electric supply lines); however, these elements may be subject to approval by the electric supply utility.
5. System configurations: The number, sizes and types of support elements described above are incorporated in CMRS installations on an as-needed basis. (See "system configuration" response for antennas.)
6. Safety Clearances: See response to Question #3.

Q2. A detailed description of how CMRS pole attachments differ from competitive local carrier (CLC) and cable TV pole attachments with respect to the number of attachments on a given pole, locations of attachments on poles, amount of space occupied on poles, safety clearances, weight, wind load, and other physical characteristics.

Response to Question 2:

Introduction

As an initial matter, it is important to understand that certain pole attachments (i.e., equipment, associated elements, and support elements as described in Parts B, C, and D to Q1 above) used by competitive local carriers (CLCs), cable TV companies, and CMRS companies are similar and often located in the same portions of joint use utility poles. For example, CMRS companies often install new communication cables in conjunction with their new antenna installations. These cables may be attached directly to the surface of a pole, suspended on a shared or sole-use crossarm, or "over-lashed" on an existing communication infrastructure provider's cable. Also, CMRS companies, like the CLCs and cable TV companies, often prefer to place their equipment on the support pole, rather than nearby in subsurface or pad-mounted enclosures. As noted in the responses below, the principle difference between CLC, cable TV, and CMRS pole attachments are the antennas, and with regard to installations at pole-top, the location of said antennas.

CMRS, CLC and cable TV pole attachment differences

1. Type: Except for the antenna(s) (and its support elements), CMRS pole attachments (e.g., equipment, pole-to-pole cables, cable risers, grounds, and hardware) are much the same as CLC and cable TV pole attachments. (See Q1 B-1 and C-1 above.)
2. Number: The number of CMRS pole attachments (described in Q1 A-2 above), like the number of CLC and cable TV pole attachments on a given pole, is dependent on numerous design, construction, maintenance, and business considerations. These considerations include: available pole space, existing and intended additional loads on the pole, pole location, pole height, accessibility, electric service requirements, existing electric supply infrastructure, vehicle and pedestrian traffic, permitting, and environmental constraints. Like CLC and cable TV pole attachments, new CMRS pole attachments on joint use poles often necessitate: a) the replacement of an existing pole with a taller and/or larger class pole; b) rearrangement of existing communication cables, grounds, risers, etc.; c) new pole-to-pole cable(s); d) new equipment boxes and a disconnect device (for CMRS); e) two or more new vertical risers; f) one or more new vertical grounds; g) one or more crossarm or support brackets; h) one or more omni directional antenna rods; and/or i) two or more directional antenna panels.

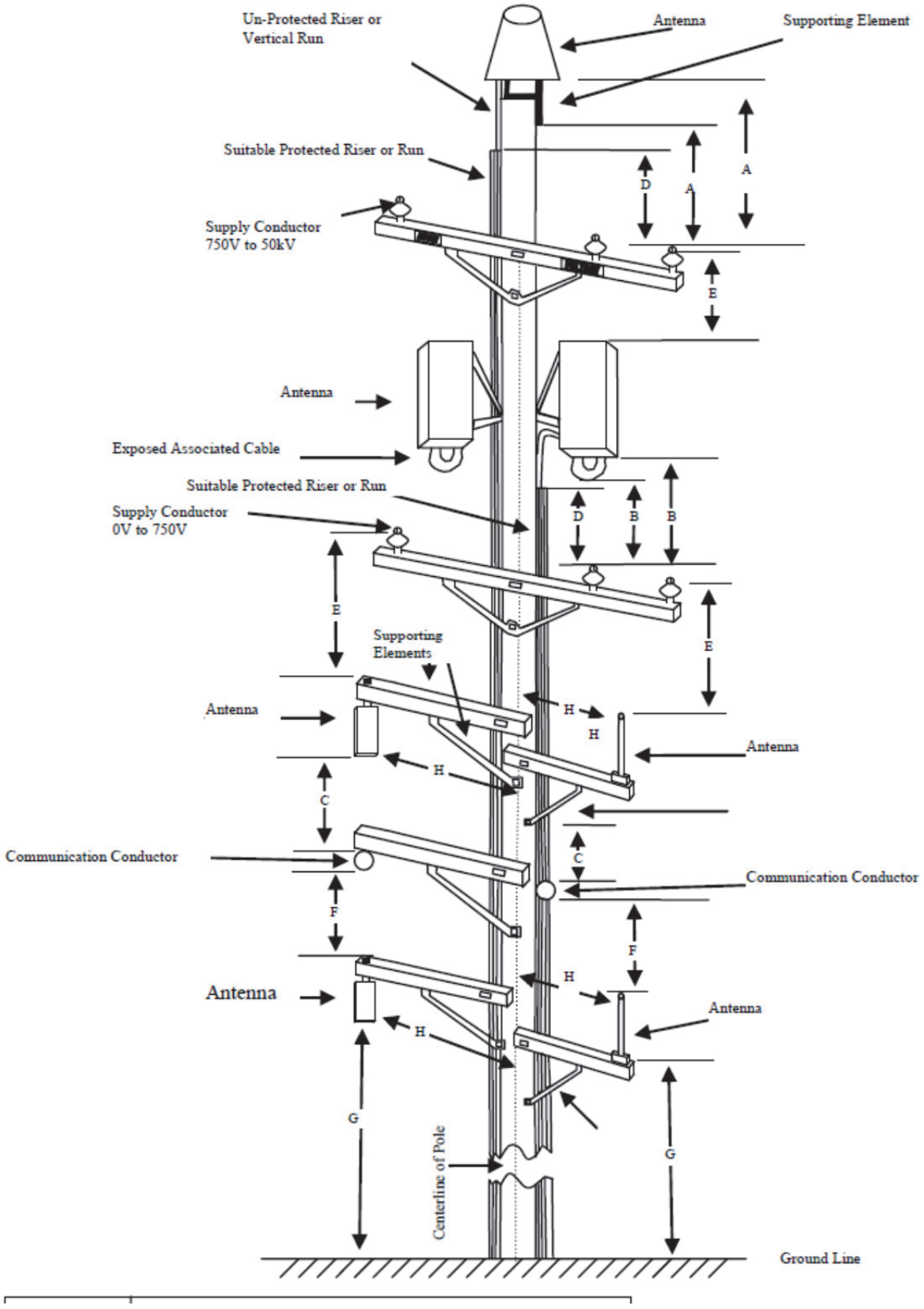
3. Location: The conventional CLC, cable TV and CMRS pole attachments (as described in Q1 A-2 above), on a given joint use utility pole, typically occupy the portion of the pole commonly referred to as "communication space." Antennas (including their supporting crossarms/brackets) are also typically installed in the communication space, either above or below existing pole-to-pole cables. In some instances antennas are installed at pole-top, either above span guys (on guy poles), or above Class T, L, or H lines (up to 50 kV) on joint use utility poles. (CLC and cable TV pole attachments are rarely, if ever, installed at pole-top above Class T, L, or H lines (up to 50 kV) on joint use utility poles.) Additionally, CMRS antennas may also be installed between levels of Class T, L, and H lines.
4. Space: With the exception of antenna(s) installed on crossarms or brackets, the space occupied by CLC, cable TV, and CMRS pole attachments (as described in Q1 A-2 above) on a given joint use utility pole is virtually the same. As demonstrated in Appendix A and throughout this document, the space occupied by CMRS antennas, support elements and associated elements located above the communication space (traditionally occupied by CIP facilities) can prevent electric supply utilities from installing new or additional lines and equipment. Further, although the three dimensional space occupied by CMRS antennas at pole-top (on joint use utility poles) may vary depending on the type and number of antennas, there are certain antenna installations that inhibit access to the electric supply lines below.
5. Clearances: With the exception of antenna(s) installed on crossarms or brackets, the safety clearances described in GO 95, for CLC, cable TV, and CMRS pole attachments, on a given joint use utility pole are essentially the same. The clearances prescribed by GO 95 for CMRS pole attachments are described further in the response to Question 3 (below).
6. Weight. wind load, and other characteristics: With the exception of antenna(s) installed on crossarms or brackets, the weight, wind load, and other characteristics of CLC, cable TV, and CMRS pole attachments, on a given pole, are essentially the same. The weight, wind load, and other characteristics of antennas and their support arms or brackets may vary from location to location, and often must be modeled (for pole loading purposes) on a case-by-case basis.

Q3. A table listing the safety clearances required by General Order 95 for typical CMRS, CLC, and cable TV pole attachments.

Response to Question 3:

The attached table lists the specific clearances for typical CMRS, CLC, and cable TV pole attachments as identified in Rule 94, Figure 94-1.

Index	Reference	Condition	Clearance
A	Rule 94.4-C / Table 2, Case 21 Col. E-H	Antennas, associated equipment (e.g. terminations, enclosures) and support elements installed above supply lines of different ownership attached to the same structure	35.1 to 50 kV – 120 in. 20.1 to 35 kV – 72 in. 7.51 to 20 kV – 72 in. 751 V to 7.5 kV – 72 in.
B	Rule 94.4-C / Table 2, Case 21 Col. D	Antennas, associated equipment (e.g. terminations, enclosures) and support elements installed above supply lines of different ownership attached to the same structure	0 to 750 V – 48 in. (Includes service drop and Trolley Feeders) Clearance to service drop point of attachment may be reduced to 10 in.
C	Rule 94.4-C / Table 2, Case 21 Col. C	Antennas, associated equipment (e.g. terminations, enclosures) and support elements installed above communication lines of different ownership attached to the same structure	24 in. (Includes open wire, cables and service drops) Clearance to cables installed by antenna owner/operator may be reduced to 10 in.
D	94.8-B	Suitable protective covering for risers and vertical runs passing supply lines and equipment shall extend no less than:	3 ft. above 0-750V lines 6 ft. above 750V – 35 kV lines 9 ft. above 35 to 50 kV line
E	94.4-A	Antennas and support elements below supply lines	0 to 50 kV – 72 in.
F	94.4-B	Antennas and support elements below communication lines	24 in (Includes communication conductors and equipment).
G	Rule 94.4-G / Table 1, Cases 1-6, Col. B	Antenna vertical clearance above ground line	Railroads – 25 ft. Railroads w/trolleys – 26 ft. Urban thoroughfare – 18 ft. Rural thoroughfare and agricultural areas – 15 ft. Pedestrian only areas – 10 ft. Walkable surfaces on buildings and structures w/o conductors -8 ft. Non-walkable surfaces on buildings and structures w/o conductors – 8 ft.
H	Rule 94.4-E	Antenna horizontal clearance from centerline of pole when affixed between supply and communication lines or below communication lines	24 in. (Horizontal clearance from centerline of pole for pole-top antennas not specified)
-	Rule 94 Exception (2)	Antennas embedded in or attached to communication cables and messengers are exempt from this rule and shall only meet the construction requirements for Class Circuits.	Cables – 12 in. vertically


Un-Protected Riser or
Vertical Run
Antenna
Supporting Element
Suitable Protected Riser or Run
Supply Conductor
750V to 50kV
Antenna
Exposed Associated Cable
Suitable Protected Riser or Run
Supply Conductor
0V to 750V
Supporting
Elements
Antenna
Antenna
Communication Conductor
Communication Conductor
Antenna
Antenna
Centerline of Pole
Ground Line
A
B
C
D
E
F
G
H

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Q4. A well-illustrated description of how CMRS pole attachments affect the ability of other entities (e.g., electric utilities, wireline telecommunications companies, cable TV companies, etc.) to occupy usable pole space or otherwise use a utility pole.

Response to Question 4:

A. How CMRS pole attachments affect the ability of other entities to occupy usable pole space or otherwise use a utility pole

1. Electric utilities: Utility poles are jointly used on a routine basis by electric utilities with other electric utilities and/or with wireline, and wireless telecommunication companies. CMRS pole attachments (as described in the response to Question 1 above) are routinely installed in the space typically occupied by other communication infrastructure providers (CIPs).
   i. Where practicable and safe, electric utilities and CIPs have historically consented (by written agreement) to the rearrangement or removal of lines and equipment in order to make space available for incoming wireline and wireless carriers. Such agreements are dependent on the several conditions (e.g., number and dimensions of existing and proposed new pole attachments, age of the pole, existing loads, etc.) and often the subject pole must be replaced in order to create sufficient space and strength.
   ii. However, in the circumstance where a CMRS provider seeks to install antenna(s) at pole-top above Class T, L, and H lines (up to 50 kV) and where the antenna array requires the installation of two or more vertical communication cable risers, and one or more ground wire risers, the "power space" (typically occupied by electric supply equipment, lines, and risers) is rendered virtually useless to the electric utility.
   iii. The circumstance described above is also applicable to joint use poles where a CMRS provider seeks to install facilities above the typical communication space and affix antennas between levels of Class T, L, and H lines.
   iv. Further, where CMRS equipment is pole mounted in the space between the lowest communication attachment and ground line, electric utilities are impeded from placing their own risers and equipment.

2. CLCs, cable TV companies, and other CIPs: As described in the response above, wireline CIPs attached to joint use utility poles have routinely agreed to allow their facilities to be rearranged (or removed) to make space available for an incoming wireline or wireless company, and wherever practicable, existing poles are replaced to increase strength and add surplus space. However, where CMRS equipment is pole mounted in the space between the lowest communication attachment and the ground line, the other CIPs are impeded from placing their own risers and equipment.

3. Other CMRS providers: Although possible, due to presence of associated risers and equipment, it is rare for two or more CMRS carriers to install antenna arrays on the same joint use utility pole that also supports other CIP facilities and Class T, L, or H lines. However, should this occur, when the first wireless provider's equipment is pole mounted in the space between the lowest communication attachment and the ground line, the other CIPs are impeded from placing their own risers and equipment.

Q5. A description, explanation, and quantification of how CMRS, CLC, and cable TV pole attachments affect the service life of utility poles.

Response to Question 5:

At this time, data specifically quantifying how CMRS, CLC and cable TV pole attachments affect the service life of a utility pole is unavailable. Accordingly, this question will require further research and analysis. However, the following description/explanation of how such attachments could impact service life of a utility pole is provided below:

A. CLC, cable TV and CMRS attachments can reduce service life in various ways including:
   1. The addition of pole attachments and their corresponding loads lowers the available safety factor margin.
   2. CMRS, CLC, and cable TV crews often do not apply preservative treatment to field drilled holes, leading to decay pockets that will shorten pole life and present a safety risk to line personnel (this tends to be more of a problem in areas with relatively high precipitation).
   3. CIP cable attachments tend to be suspended at elevations between 18 ft. and 24 ft. above the ground line, and in urban areas are often impacted by windblown debris (e.g., tree limbs, etc. during storms). .

B. The following description of a theoretical joint use utility is offered in support of item 'C' below:
   1. Designed for joint use with a CIP cable
   2. 50 year expected service life at the time of design
   3. Starting installation safety factor of 4.0
   4. Replacement safety factor of 2.67
   5. Douglas Fir wood pole is 45'-Class 4, set 6'in ground
   6. A large antenna with dimensions of 11.9" X 72", installed at pole-top, via a pole-top extension. .
   7. Antenna wind load - 47.6 lbs
   8. 7' wood pole extension wind load – 43.6 lbs
   9. Average pole replacement cost of $13,500
   10. The additional overturning moment due to the antenna = 43.6(39' + 7'/2) + 47.6(39' + 7' + 6'/2) = 4185 ft-lb
   11. A Douglas Fir 45ft. Class 4 pole with a safety factor of 4.0, in a light loading area (as defined by GO 95), has a maximum load capability of 17400 ft-lb.
   12. A Douglas Fir 45 ft. Class 4 pole with a safety factor of 2.67 in a light loading area, has a maximum load capability of 28150 ft-lb.

   13. A Douglas Fir 45 ft. Class 4 pole with a 4.0 safety factor with maximum load capability of 17400 ft-lb divided by 50 years results in an annual deterioration rate of 348 ft-lb

(17400 / 50 years = 348 ft-lb/year), and a Douglas Fir 45 ft. Class 4 pole with a 2.67 safety factor with maximum load capability of 28150 ft-lb divided by 50 years results in an annual deterioration rate of 563 ft-lb (28150 / 50 years = 563 ft-lb/year). Assuming straight-line deterioration, a Douglas Fir pole starting at a 4.0 safety factor with a life of 50 years and a minimum allowable safety factor of 2.67 results in an annualized deterioration rate between the original set and the minimum allowable of 215 ft-lb per year (563 – 348 = 215 ft-lb./year).

C. Assuming a deterioration rate of 215 ft-lb/year, this would mean the expected service life of a new pole is reduced by 19.5 years (4185/215) to 30.5 years. For example, the average yearly cost of a $13,500 pole (exclusive of maintenance and inflation) with a 50-year life is $270 (or $13,500/50). The average yearly cost of a $13,500 pole with a 30.5 year life is $443 (or $13,500/30.5). Therefore, if the antenna is installed on a new pole, the loss in pole life would result in an approximately 64% higher cost ($443/$270).

Q6. A list and description of the fees and charges that utility pole owners may levy on third-party attachments, in addition to the make-ready charges and the 7.4% pole-attachment fee authorized by Decision (D.) 98-10-058. The additional fees and charges might include, for example, (i) an annual fee for the pole owner's cost to audit pole attachments; 5 (ii) an additional or higher annual fee for pole attachments that occupy more pole space or otherwise encumber property to a greater degree than cable TV attachments; 6 and (iii) fees and charges in pole-attachment contracts filed at the Commission pursuant to the Right-of-Way (ROW) Rules.

Response to Question 6:

Additional Fees and Charges:

1. Review of applications for attachment that would not be considered redundant engineering reviews.
2. The Pole owner may charge for cost of producing maps, drawings or plans necessary for evaluating access requests.
3. The cost of ownership inputs used in the 7.4% calculation allows for inclusion of recovery for costs associated with the GO165 inspection program. This, however, is not an adequate avenue for collection of CIP pole attachment data, including identification of facility size, type, owner, and authorization status.
4. The cost of ownership inputs used in the 7.4% calculation allows for including existing testing, treating and stubbing of existing poles as part of our maintenance program.
5. D.98-10-058 is not clear on the costs associated with encumbering more than one foot or one anchor attachment. As the decision was written for wireline facilities these rates at a minimum should be based on the amount of space rendered unusable by CMRS, including any unusable space created by the attachment or occupied in the support structure if approved by the pole owner.

Q7. In their Reply Comments filed on July 17, 2014, the Joint Parties indicate they do not recover from third-party pole attachers ("attachers") one or more of the following costs:

A. Costs to process, manage, track, inspect, and audit third-party attachments.
B. Legal and regulatory costs for hazard notices, corrective actions, and damage claims.
C. Costs to remove attachments that are unauthorized or belong to out-of-business entities.
D. Costs for more frequent pole replacements due to the additional weight and wind load of pole-top attachments.
E. Relative to CLC and cable TV pole attachments, the additional pole space, pole-load capacity, and pole service life that is used (or rendered unusable for other purposes) by CMRS pole attachments and CMRS-related safety clearances.

The informational reports should address whether, and to what extent, the previously identified costs may be recovered through (A) the make-ready charges and pole-attachment fees authorized by D.98-04-0629 and D.98-10-058;10 (B) the pole-attachment fees allowed by D.98-10-058 in situations where the attachments occupy more pole space or encumber property to a greater degree than cable TV facilities;11 (C) other Commission precedent, if any; and/or (D) pole-attachment.

Response to Question 7:

A. Costs to process, manage, track, inspect, and audit third-party attachments

Costs to process, respond and inspect a specific application are recoverable. A problem with the current structure is that additional costs are recoverable only through cost of ownership calculations. However in order for the pole owner to modernize its tracking and work management of such applications the pole owner would incur substantial upfront IT development and training costs. Such expenses would not only include licensing of software, but also technical development to interface with existing work management, asset management and electronic mapping systems, along with training. Pole owners would need to engage vendors to obtain current estimates.

B. Legal and regulatory costs for hazard notices, corrective actions, and damage claims

Costs associated with damage claims related to third party attachments such as a low hanging wire being hit are currently absorbed by the pole owner. SDG&E, however, does have a mechanism in place where it can track and collect for damage claims that were caused by a CIP.

C. Costs to remove attachments that are unauthorized or belong to out-of-business entities

These costs would be included in PG&E's FERC 593 costs as part of an idle facility program; however this is again only going to be recovered over time through a small increase to the rate versus the pole owner needing to pull funds from other programs during the calendar year to incur the upfront cost for the removal. To mitigate such

expenses recent contracts will require a letter of credit or bond. If necessary, SCE would use the same methodology as PG&E. SDG&E does not currently keep track of costs to remove unauthorized attachments, but agrees that such costs should be tracked and that PG&E's tracking methodology is reasonable.

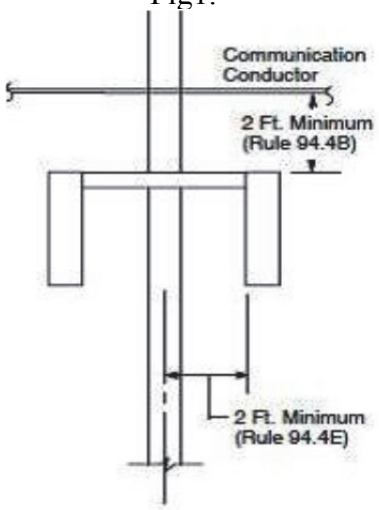
D. Costs for more frequent pole replacements

For costs for more frequent pole replacements due to the additional weight and wind load of pole-top attachments, please refer to response to Question 5 above.

E. Additional pole space, pole-load capacity, and pole service life that is used (or rendered unusable for other purposes) by CMRS pole attachments and CMRS-related safety clearances

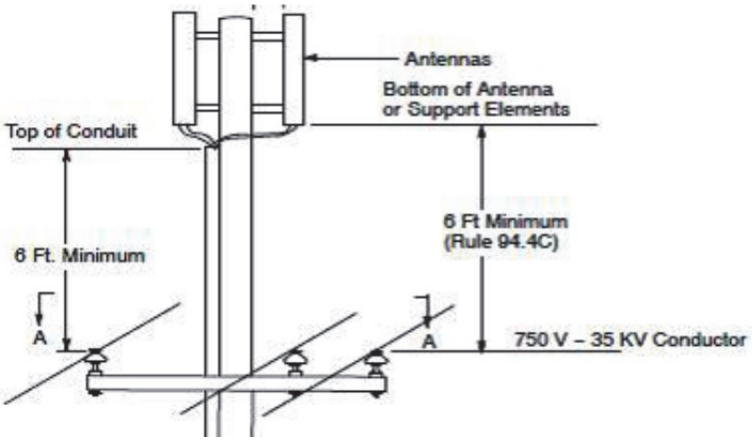
1. Relative to wireline CIPs, CMRS or wireless CIPs require 2 feet of clearance from communication conductors as opposed to 1 foot of clearance. This generates 2 feet of unusable space both above and below an antenna in the communications space on a pole. This is space that could have been occupied by a wireline CIP (see illustration below).

Fig1.



2. CMRS parties (i.e., all wireless CIPs) are required to maintain 6 feet of clearance from energized supply. This applies to both pole top installations as well as below energized supply. As such, CMRS parties would require the pole owner to increase capacity to meet the clearance requirements necessary for their attachments. However, this would result in an increase in unusable space. In contrast, if a wireline provider requests additional capacity by setting a taller pole, they are potentially generating more usable space. Accordingly, the attaching CMRS party should pay for the unusable space created by their attachments.

Fig 2.


Antennas
Bottom of Antenna
or Support Elements
Top of Conduit
6 Ft Minimum
(Rule 94.4C)
6 Ft. Minimum
A
A
750 V – 35 KV Conductor

Q8. A detailed explanation of how the default pole-attachment fee of 7.4% per foot of usable space reflects, explicitly or implicitly, the loads, safety clearances, and other encumbrances associated with wireline attachments by CLCs and cable TV companies.

Response to Question 8:

A. The 7.4% allocation for cost of ownership does not reflect loads, other than the ability to capture increased pole maintenance costs in the cost of ownership model.

B. Presuming 13.5 feet of usable space on a 37.5-foot pole, the formula allocates 7.4% (1 ÷ 13.5) of a pole's estimated capital and operating expenses to that third-party attachment. The Commission created the 37.5-foot pole height presumption taking the midpoint of 35 and 40 feet, two common pole heights at that time. The formula thereby assigns 7.4%, or 2.8 feet, of the total 37.5 feet to the attachment.

C. As pole heights increase due to multiple CIPs and especially with CMRS /wireless CIP attachments, additional unusable space is created to meet GO 95 clearance requirements. The current rate model of 7.4% is based on outdated assumptions in today's environment.

Q9. Compared to the situation of no third-party pole attachments, an explanation of whether the pole owner is better off/worse off financially under two scenarios. In the first scenario, the pole owner receives an annual pole-attachment fee of 7.4% for one third-party attachment that reduces a pole's service life by 5% (assuming there are no make-ready costs and the attachment is installed over the pole's entire service life). In the second scenario, the attachment reduces the pole's service life by 10%.

Response to Question 9:

We interpret this question as asking whether the 7.4% fee covers the incremental pole replacement costs incurred by the Joint Parties. Notwithstanding the Joint Parties' position that charging only incremental costs would represent a rate-payer subsidy of CMRS attachments, we provide the requested calculations below.

Using the assumptions provided, and assuming an average pole life of 50 years, rental rate of $16.20 (7.4% x $218.96 annual operating cost) and a replacement pole cost of $13,500, we provide the calculations for the base case (no attachments) and the two attachment scenarios: 5% (2.5yr) and 10% (5yr) pole life reduction. Please note that no incremental O&M cost is assumed. Also, it should be noted that the replacement cost of $13,500 for the pole is not necessarily consistent with the experience of each Joint Party, depending on the circumstances of where the pole is replaced.

Base case:
If the pole life is 50 years, then the replacement rate is 1/50 (i.e., if we have 1,000 poles, then we are replacing 1/50 * 1,000 = 20 poles per year).
Hence, we have a $270 yearly replacement cost (1/50 * $13,500)

5% life reduction:
If the pole life is 47.5 years, then we are replacing 1/47.5 * 1,000 = 21.05 poles per year.
Hence, we have a $284.21 yearly replacement cost (1/47.5 * $13,500)
This is 1.05 additional poles per year for every 1,000 attachments, or 1.05 * $13,500/1000 = $14.21 incremental replacement cost

In this case, the $16.20 fee covers the incremental replacement cost of $14.21, but does not cover the average replacement cost of $284.21..

10% life reduction
If the pole life is 45 years, then we are replacing 1/45 * 1,000 = 22.22 poles per year.
Hence, we have a $300 yearly replacement cost (1/45 * $13,500)
This is 2.22 additional poles per year for every 1,000 attachments, or 2.22 * $13,500/1000 = $30 incremental replacement cost

In this case, the $16.20 fee does not even cover the incremental replacement cost of $30, let alone the average replacement cost of $284.21 (i.e. ratepayers are made worse off).

Q10. Straw proposals for default CMRS pole-attachment fees. Parties are encouraged to present straw proposals that are based on the existing paradigm of make-ready charges plus the default 7.4% pole-attachment fee set forth in D.98-10-058, adjusted, as appropriate, to (A) reflect the loads, space requirements, safety clearances, and other physical characteristics of CMRS attachments; and (B) recover the costs listed in Item 7, above.

Response to Question 10:

A. Due to the vertical space requirements of CMRS / wireless CIPs and the unusable space generated by their attachments, all vertical space occupied or made unusable should be subject to the 7.4 attachment fees on a per foot basis. For attachments at pole top, the unusable space generated shall be subject to rental fees by the CMRS / wireless CIP. As the antenna will require an additional 6' vertical clearance from energized supply to meet GO 95 rule 94, all 6 feet shall be subject to rental fees.

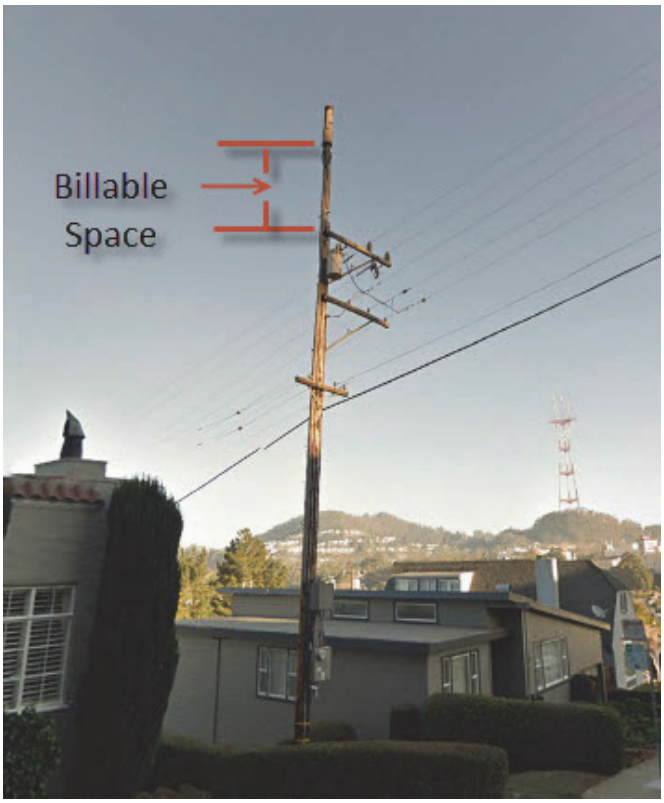


Fig 3.

For attachments in the communication space, the CMRS / wireless CIP attachment should be subject to rental fees for all vertical space occupied or made unusable. As the antenna will also require 2feet of vertical separation from CATV or CLC wireline, this additional unusable space should be the financial responsibility of the CMRS.

Fig 4(left) Fig 5(right)

B. To recover the costs associated with Question 7 above:

1. A possible solution to large costly audits could be to require all third party CIPs to provide a GIS geodatabase showing where they have aerial facilities in the state of California. This would need to be in a format usable by the pole owner. This would be similar to the California Broadband maps that the CPUC has created from data provided by the CIPs. However rather than just a polygon showing the areas they provide service, the third party would need to provide specific GPS coordinates for every pole they are attached to and provide the height of attachment, facility size, and vertical space occupied, including unusable space. This data could be provided and then the Delta change submitted annually. This could be collected as part of the requirements of rule 80.1. This proposal would ensure that the costs associated with inspections/data production are expended specifically by each third party who owns the attachment and not by other third parties through a flat cost or rate increase.

   This would also provide a baseline of attachments to allow for more accurate identification of unauthorized attachments moving forward.

2. An alternative to a self-reporting requirement, would be a full system wide audit, which would be necessary to identify baseline figures and unauthorized attachments. Vendors would need to be approached to provide specific figures, but previous estimates for data collection were in the range of $111 per pole, based on as estimate provide by SCE. SCE

also estimated that costs associated with upgrading pole attachment tracking systems would be approximately $8 million in capital plus associated O&M. SDG&E and PG&E would have to provide their own estimates.

3. Due to the complexity of CMRS / wireless CIP attachments, pole replacements and transfers are not simple. A same hole set would require the CMRS / wireless CIP to remove its facilities entirely prior to the pole owner conducting work. Unlike a wireline attachment, the CMRS cannot just transfer to the new pole. Upon pole replacement, the wireless CIP would need to initiate a service relocation project for the CMRS / wireless CIP to transfer their facilities and for the service connection to be established by the power provider. To simplify this and not burden other attachers with an increased cost of ownership upon the pole owner, the CMRS party should be required to install all supporting equipment, including a meter panel on a pad at the ground level. This would allow for much simpler pole replacements and reduce the likelihood of poles left in the field awaiting transfers.

Q11. A copy of the party's pole-attachment contract(s) and associated advice letter(s) filed at the Commission and currently in effect pursuant to the ROW Rules, D.98-10-058, Appendix A, Section VI.C. Parties are strongly encouraged, but not required, to provide copies of the currently effective pole-attachment contracts and advice letters filed by entities that are not participating in this proceeding (*e.g.*, the incumbent local exchange carriers).

Response to Question 11:

See the following links for each Joint Party:

PG&E

See Attachment F

SCE

See Attachment G

SDG&E

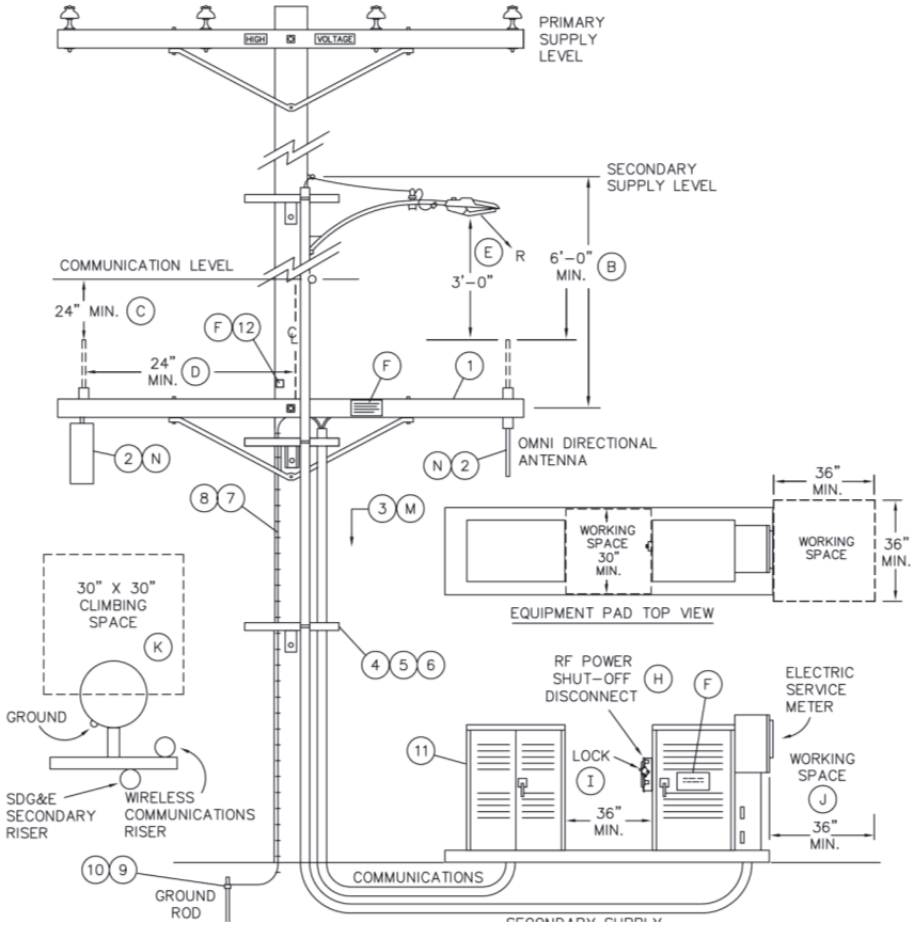
See Attachments H

Q12: A detailed and well-illustrated description of the safety hazards, if any, associated with CMRS attachments. The description should be limited to issues within the scope of this proceeding, as set forth in the Scoping Memo at pages 3 - 5.12

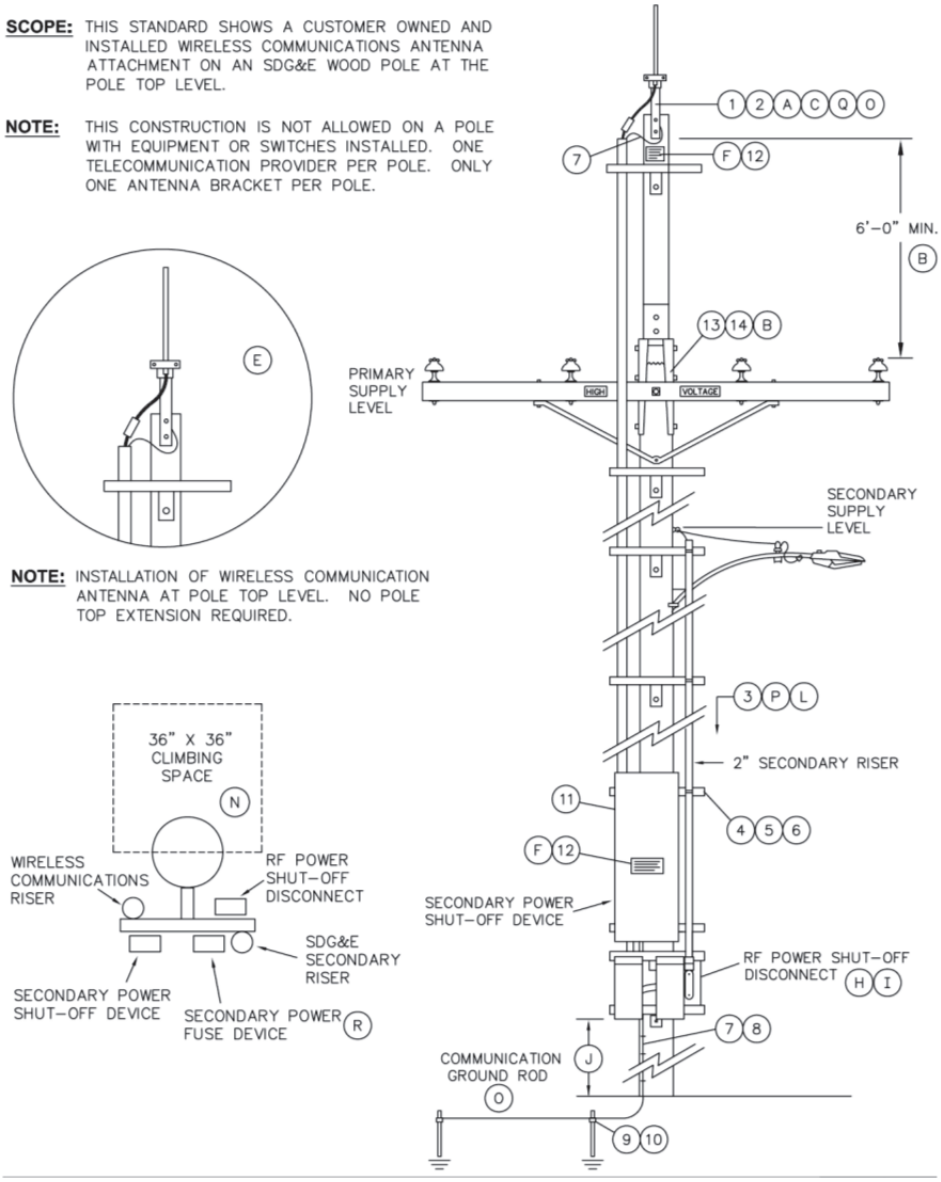
Response to Question 12:

A. Antenna Below Supply Conductors

The scamatis below illustrate CMSR antenna (below and above supply lines) that are designed and constructed to General Order 95 Rule 94 requirements and other code prerequisites.



Pole Top Antenna



B. Safety Hazards

Safety Hazard Description:

1. Safety Factors- Added load from CMRS attachments can potentially cause the overloading of poles if load calculations are not performed causing pole failures.
    i. Rule 44
2. Additional Construction - Added load from CMRS attachments can potentially cause the overloading of poles if load calculations are not performed accurately causing pole failures.
    i. Rule 44.2

3. Allowable Climbing Space and Work Space Obstructions-CMRS attachments, equipment and risers cannot infringe on the designated GO 95 climbing space and workspace for electric workers.

   Only specific hardware and equipment are allowed in this area of a pole. If the rules are not applied in the design and construction of CMRS attachments, it will cause safety hazards to electrical workers that need safe access to, from and when occupying their work areas. Non-Compliance with the prescribed General Order 95 rules below will cause safety hazards.

   i. Rule 54.7A
   ii. Rule 54.7B2
   iii. Rule 94.6
   iv. 94.8

4. Clearances (CMRS antenna below and above supply lines)-Inadequate clearance between CMRS equipment and supply lines will cause a very serious safety hazard as it will not allow for adequate space for electric workers to perform work in a safe manner. In addition, CMRS equipment is considered grounded, and therefore, inadequate clearance introduces a foreign grounded element (CMRS antenna/equipment) into an area where electrical workers handle energized lines and equipment. Contact between energized supply lines and equipment and grounded CMRS antenna/equipment will cause serious injury to electrical workers.

   i. Rule 38 Table 2 Case 21, Column A-H
   ii. 94.4 A-G

C. Illustrated Safety Hazard

Below is an illustration of safety hazards that can be caused by CMRS equipment.

1. Rule 44 loading requirements
2. Rule 57.7A Climbing space obstruction requirements
3. Rule 38 Table Case 21 and 94.4 A-G clearance requirements


Antenna and Risers
Ancillary Equipment (Disconnect Switch, Fuse Boxes, Risers Meter, and Battery Back-up
SPEED LIMIT 30
04/07/2014


Safety Hazards-Both arrows show a CMSR antenna equipment (riser, cables) causing an infraction of GO 95 Rule 54.7A "Allowable Climbing Space Obstruction".

Q13. The informational report(s) submitted by the Joint Parties should provide a detailed and well-illustrated description of their proposed tethering requirement for pole-top antennas.

Among the topics that should be addressed are the following:

A. A description of the safety hazard(s) posed by pole-top antennas and an explanation of how the proposed tethering requirement would mitigate the safety hazard(s).

B. A list and description of all failures of pole-top antennas known to the Joint Parties.

C. A technical description of how the tethering requirement would be implemented, including specific hardware, materials, and configurations.

D. An explanation of whether the tether and associated hardware pose a safety hazard by acting as a conductor, adding weight, increasing wind load, or other reasons.

E. An explanation of why there is no tethering requirement for electric utility pole-top extensions.

F. A statement of whether, to the best of the Joint Parties' knowledge, tethers for pole-top attachments are used in California or elsewhere, and whether tethers can be purchased or easily fabricated.

Response to Question 13:

Upon further analysis and review, the Joint Utilities have determined not to seek a tethering requirement in this proceeding.

Q14: Optionally, a description of other states' regulations, practices, fees, and charges for CMRS pole attachments.

Response to Question 14:

A. Connecticut Light & Power

CT Light & Power wireless attachment fees are confidential and are negotiated individually. This fee is also non-tariffed. In September 2010, CT regulators agreed that antennas cannot go over Primary Conductors. As a result, few entities place antennas on CT Light & Power structures.

CT Light & Power's Pole Top Antenna Construction Standards are set forth in Attachments I-J.

B. Seattle City Light

Seattle City Light provided their 2014 Antenna Rates, Antenna Site Guidelines, and Construction Standards are provided in Attachments K-N.

Seattle City Light's 2014 wireless rent schedule for Wood Distribution/Street Light Poles are as follows:

1. Antennas above 26kV

   $6,403.53/year - where the wireless antenna is placed on a SCL facility and ground equipment is in street right of way or in private property.
   $13,854.88/year - where the wireless antenna and ground equipment is placed on a SCL facility and SCL is the underlying landowner.
2. Small Antennas below 26kV

   $1,600.88/pole
   $115.46/antenna/year - WiFi/AMR/Similar Antennas
   4 Files removed

C. Nevada Energy

Nevada Energy's Construction Standard for Antenna Attachments to Wood Distribution Poles is set forth in Attachment O.

Q15. Other information that parties believe is useful for addressing, evaluating, and/or deciding issues within the scope of this proceeding.

The Joint Parties look forward to reviewing the informational reports of other parties and request that the proposed changes to GO 95 rules submitted in our Opening Comments on July 7, 2014, and other possible GO 95 rule revisions, be discussed at the upcoming workshops. Additionally, the Joint Parties respectfully request that time be allotted to discuss the foundational elements of the 7.4% pole attachment fee.

Respectfully submitted,

By: /s/ JOHN A. PACHECO
John A. Pacheco
Attorney for: SAN DIEGO GAS & ELECTRIC COMPANY
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Telephone: (619) 699-5130
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E-mail: jpacheco@semprautilities.com

DATED at San Diego, California, this 21st day of October 2014

SDG&E OFFICER VERIFICATION

John Andrew Sowers declares the following:

I am an officer of San Diego Gas & Electric Company and am authorized to make this verification on behalf of San Diego Gas & Electric Company. I am informed and believe that the matters stated in the foregoing **JOINT INFORMATIONAL REPORT OF SAN DIEGO GAS AND ELECTRIC COMPANY (U 902-E), SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E), AND PACIFIC GAS AND ELECTRIC COMPANY (U 39-E), ADDRESSING MATTERS IDENTIFIED IN THE BODY OF THE ADMINISTRATIVE LAW JUDGE'S RULING DATED SEPTEMBER 5, 2014** are true to my own knowledge, except as to matters which are therein stated on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on October 21, 2014 at San Diego, California.

/s/ JOHN ANDREW SOWERS
John Andrew Sowers
San Diego Gas & Electric Company
Vice President – Electric Distribution Operations

SCE OFFICER VERIFICATION

Gregory M. Ferree declares the following:

I am an officer of Southern California Edison Company and am authorized to make this verification on behalf of Southern California Edison Company. I am informed and believe that the matters stated in the foregoing **JOINT INFORMATIONAL REPORT OF SAN DIEGO GAS AND ELECTRIC COMPANY (U 902-E), SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E), AND PACIFIC GAS AND ELECTRIC COMPANY (U 39-E), ADDRESSING MATTERS IDENTIFIED IN THE BODY OF THE ADMINISTRATIVE LAW JUDGE'S RULING DATED SEPTEMBER 5, 2014** are true to my own knowledge, except as to matters which are therein stated on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on October 17, 2014 at Pomona, California.

/s/ GREGORY M. FERREE
Gregory M. Ferree
Southern California Edison Company
Vice President – Distribution

PG&E OFFICER VERIFICATION

Patrick Hogan declares the following:

I am an officer of Pacific Gas and Electric Company and am authorized to make this verification on behalf of Pacific Gas and Electric Company. I am informed and believe that the matters stated in the foregoing **JOINT INFORMATIONAL REPORT OF SAN DIEGO GAS AND ELECTRIC COMPANY (U 902-E), SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E), AND PACIFIC GAS AND ELECTRIC COMPANY (U 39-E), ADDRESSING MATTERS IDENTIFIED IN THE BODY OF THE ADMINISTRATIVE LAW JUDGE'S RULING DATED SEPTEMBER 5, 2014** are true to my own knowledge, except as to matters which are therein stated on information and belief, and as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on October 21, 2014 at San Francisco, California.

/s/ PATRICK HOGAN
Patrick Hogan
Pacific Gas and Electric Company
Vice President – Electric Operations Asset Management