

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



February 8, 2016

CA2015-011

Rob Millar – General Counsel
Crown Castle
695 River Oaks Parkway
San Jose, CA 95134

Subject: Audit of Crown Castle's Northern California Region

Dear Mr. Millar:

On behalf of the Electric Safety and Reliability Branch of the California Public Utilities Commission (CPUC), Jamie Lau of my staff conducted a Communication Infrastructure Provider (CIP) audit of Crown Castle's Northern California region from October 12, 2015 to October 14, 2015. The audit included a review of Crown Castle's maintenance records and field inspections of the Northern California region's facilities.

During audit, we identified violations of one or more General Orders (GOs). A copy of the audit findings itemizing the violations is enclosed. Please advise me no later than March 8, 2016, by electronic or hard copy, of all corrective measures taken by Crown Castle to remedy and prevent such violations.

If you have any questions concerning this audit, please contact Jamie Lau at (415) 703-2233 or jamie.lau@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Fadi Daye".

Fadi Daye, P.E.
Program and Project Supervisor
Electric Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission

Enclosures: CPUC Audit Findings

Cc: Elizaveta Malashenko, Director, Safety and Enforcement Division, CPUC
Charlotte TerKeurst, Program Manager, Electric Safety and Reliability Branch, CPUC
Jamie Lau, P.E., Utilities Engineer, CPUC

AUDIT FINDINGS

I. Records Review

During the audit, my staff reviewed the following records:

- Crown Castle (CC)'s 2014 and 2015 inspection records and related work orders for facilities located in Northern California (Northern CA).
- CC's 2014 and 2015 work orders resulting from third-party notifications in Northern CA.
- CC's pole loading calculations for new projects in San Mateo and San Jose, located in Northern CA, completed in 2014 and 2015.

II. Records Review – Violations List

GO 95, Rule 31.1, Design, Construction and Maintenance, states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment.

- We sampled 173 “construction” work orders for facilities located in CC's Northern CA division with scheduled completion due dates in 2015. We found the following orders open past their due dates:

Record ID (Work Order #)	Fielded Date	Priority Level (Duration)	Address	Repair Condition	Status as of 10/12/2015
1040018	2/18/2014	1 (Immediate)	Jacob Ave., SF	Broken Down Guy	Open
1035384	1/20/2014	2 (12 months)	Morrison Ave., SJ	Street Light Clearance	Open
1035386	1/20/2014	2 (12 months)	Morrison Ave., SJ	CIP to CIP clearance	Open
1035419	1/20/2014	2 (12 months)	Josefa St., SJ	CIP to CIP clearance	Open
1035433	1/20/2014	2 (12 months)	S. Montgomery St., SJ	CIP to CIP clearance	Open

GO 95, Rule 44.2, Additional Construction, states in part:

Any entity planning the addition of facilities that materially increases loads on a structure shall perform a loading calculation to ensure that the addition of the facilities will not reduce the safety factors below the values specified by [Rule 44.3](#). Such loading calculations shall be based on existing condition and proposed configuration, information provided under [Rule 44.4](#), conservative values of relevant parameters, industry recognized values of relevant parameters, or any combination thereof.....

- In 2012, CC attached its cable to a joint pole (Pole “DAVENPORT_04-21-2014_CD_NPT-4” at 2611 Mission St., Santa Cruz), without performing pole loading calculation. In 2014, CC performed a pole loading calculation and discovered that the joint pole did not meet the minimum safety factor required by GO 95
- While performing safety factor calculations for new conductor attachment, CC performed safety factor calculations with incorrect information. This yielded incorrect safety factors. Out of the 21 pole loading calculations we sampled during our audit, we identified the following poles with incorrect safety factor calculations:

Pole #	Approx. Location	Original Pole Data	Corrected Pole Data
DAVENPORT_04-21-2014_CD_NPT-4	2611 Mission St., Santa Cruz	Class H2, 55 feet	Class 3, 55 feet
31750-990	998 Park Ave., San Jose	Class 4, 45 feet	Class 5, 35 feet
5344-07	133 S. Montgomery St., San Jose	Class 2, 55 feet	Class 2, 50 feet

III. Field Inspection

The following are the facilities we inspected during the field inspection:

Structure Number	Type of Structure	Approximate Address
Not Available (N/A)	Joint Pole	2 S Montgomery St., San Jose (1 st pole south of W. Santa Clara St.)
N/A	Joint Pole	2 S Montgomery St., San Jose (2 nd pole south of W. Santa Clara St.)
N/A	Joint Pole	4 S Montgomery St., San Jose (3 rd pole south of W. Santa Clara St.)
N/A	Joint Pole	4 S Montgomery St., San Jose (4 th pole south of W. Santa Clara St.)
N/A	Joint Pole	6 S Montgomery St., San Jose (5 th pole south of W. Santa Clara St.)
K251	Joint Pole	6 S Montgomery St., San Jose (6 th pole south of W. Santa Clara St.)
N/A	Joint Pole	Corner of S Montgomery St. and Crandall St., San Jose
N/A	Joint Pole	93 S. Montgomery St., San Jose
N/A	CIP Pole	95 S. Montgomery St., San Jose
N/A	Joint Pole	111 S. Montgomery St., San Jose
N/A	Joint Pole	129 S. Montgomery St., San Jose
N/A	Joint Pole	Corner of S Montgomery St. and Otterson St., San Jose
N/A	Joint Pole	145 S. Montgomery St., San Jose
21399	Joint Pole	145 S. Montgomery St., San Jose
N/A	Joint Pole (Antenna)	148 S. Montgomery St., San Jose
N/A	CIP Pole	160 S. Montgomery St., San Jose
N/A	Handhole	160 S. Montgomery St., San Jose
N/A	CIP Pole	878 Park Ave., San Jose
110474868	Joint Pole	892 Park Ave., San Jose
12K233J	Joint Pole	Corner of Park Ave. and Cleaves Ave., San Jose
940	Joint Pole	940 Park Ave., San Jose
956	Joint Pole	956 Park Ave., San Jose
12K242J	Joint Pole	Corner of Park Ave. and S. Morrison Ave., San Jose
N/A	Joint Pole	198 S. Morrison Ave., San Jose
12K295J	Joint Pole	188 S. Morrison Ave., San Jose
12K390J	Joint Pole	166 S. Morrison Ave., San Jose
12K235J	Joint Pole	148 S. Morrison Ave., San Jose
K829	Joint Pole	138 S. Morrison Ave., San Jose
12K296J	Joint Pole	S. Morrison Ave. and 177 feet south of San Fernando St., San Jose
N/A	Handhole	Baldwin Ave and San Mateo Dr., San Mateo

Structure Number	Type of Structure	Approximate Address
N/A	Handhole	21 San Mateo Dr., San Mateo
110076338	Joint Pole	Corner of 9 th Ave. and B St., San Mateo
110076337	Joint Pole	211 9 th Ave., San Mateo
110076334	Joint Pole	207 9 th Ave., San Mateo
110076352	Joint Pole	Corner of 9 th Ave. and Laurel Ave., San Mateo
110076351	Joint Pole	177 9 th Ave., San Mateo
110070423	Joint Pole	131 9 th Ave., San Mateo
110070425	Joint Pole	Corner of 9 th Ave. and Palm Ave., San Mateo
110070916	Joint Pole	Palm Ave. 164 ft south of 9 th Ave., San Mateo
110076341	Joint Pole	71 9 th Ave., San Mateo
110076350	Joint Pole	50 9 th Ave., San Mateo
110076344	Joint Pole	15 9 th Ave., San Mateo
110076376	Joint Pole	15 9 th Ave., San Mateo
N/A	Handhole	15 9 th Ave., San Mateo
110070458	Joint Pole	937 Maple St., San Mateo
110070457	Joint Pole	Corner of Maple St. and Seville Way, San Mateo
110070459	Joint Pole	1011 Maple St., San Mateo
110070488	Joint Pole	Corner of Maple St. and Avila Rd., San Mateo
N/A	Joint Pole	1111 Maple St., San Mateo
110502723	Joint Pole	1135 Maple St., San Mateo
110070434	Joint Pole	1208 Maple St., San Mateo
110070433	Joint Pole	1220 Maple St., San Mateo
110070432	Joint Pole	1228 Maple St., San Mateo
110070449	Joint Pole	1238 Maple St., San Mateo

IV. Field Inspection – Violations List

We observed the following violations during the field inspection. None of these violations were documented and/or addressed by CC during its last inspection.

GO 95, Rule 18B, Notification of Safety Hazards, states in part:

If a company, while performing inspections of its facilities, discovers a safety hazard(s) on or near a communications facility or electric facility involving another company, the inspecting company shall notify the other company and/or facility owner of such safety hazard(s) no later than 10 business days after the discovery. To the extent the inspecting company cannot determine the facility owner/operator, it shall contact the pole owner(s), who shall be responsible for promptly notifying the company owning/operating the facility with the safety hazard(s), normally not to exceed five business days after being notified of the safety hazard. The notification shall be documented and such documentation must be preserved by all parties for at least ten years.

A third-party communication cable was obstructing climbing space. CC did not create a third-party safety hazard notification for this condition (Pole #110070434 at 1208 Maple St., San Mateo).

GO 95, Rule 38, Table 2, Column C, Case 3, requires the minimum wire to wire clearance between two communication cables not supported on the same poles to be 24 inches.

A CC cable had less than 24” clearance from another communication cable not supported on the same poles (pole at 95 S. Montgomery St., San Jose).

GO 95, Rule 38, Table 2, Column C, Case 19, requires the minimum wire to wire clearance between a communication cable and a guy wire supported on the same poles to be 3 inches.

A CC cable was in contact with a guy wire supporting primary conductors attached on the same pole (Pole #110076352 on corner of 9th Ave. and Laurel Ave., San Mateo).

GO 95, Rule 84.4D-4 (a), From Non-climbable Street Lighting or Traffic Signal Poles or Standards, states:

When passing street lighting, traffic signal poles or standards (including mastarms, brackets and lighting fixtures) a clearance of 12 inches, as specified in [Table 1, Case 10, Column B](#), may be reduced when suitable insulation for the highest voltage of open wire involved and mechanical protection from abrasion is provided where necessary. Such mechanical protection shall extend not less than 15 inches in each direction from centerline of pole, standard, attaching mastarm or fixture, whether passing above, below or alongside. There shall be no interference with light distribution from lighting fixtures and workers shall not be hampered or endangered in the performance of their duties.

The following poles supported CC cables that passed and contacted street lighting poles to which they were unattached:

- Pole #K251 at 6 S Montgomery St., San Jose (6th pole south of W. Santa Clara St.)
- Pole #110076351 at 177 9th Ave., San Mateo
- Pole #110070425 on corner of 9th Ave. and Palm Ave., San Mateo

GO 95, Rule 84.7A, Climbing Space, states:

Climbing space shall be maintained on one side or quadrant of all poles or structures supporting communications conductors excepting at the level of the one pair of conductors attached to the pole below the lowest crossarm (Rules [84.4-C1c](#), [84.4-D1](#) and [87.4-C3](#)) and the top 3 feet of poles carrying communication conductors only which are attached directly to pole in accordance with the provisions of [Rule 84.4-C1c](#).....

A pole with CC cable attached was engulfed by vegetation leaving no climbing space (at 1111 Maple St., San Mateo).

GO 95, Rule 87.7D-1, Risers, states in part:

Risers shall be protected from the ground level to a level not less than 8 feet above the ground by:

a) Securely or effectively grounded iron or steel pipe (or other covering at least of equal strength). When metallic sheathed cable rising from underground non-metallic conduit is protected by metallic pipe or moulding, such pipe or moulding shall be effectively grounded as specified in Rule 21.4-A , or

b) Non-metallic conduit or rigid U-shaped moulding. Such conduit or moulding shall be of material as specified in Rule 22.8.

The CC risers on the following poles had either broken riser covers or inadequate covering that exposed the risers.

- Pole at 148 S. Montgomery St., San Jose
- Pole at 160 S. Montgomery St., San Jose
- Pole #110076376 at 15 9th Ave., San Mateo

GO 95, Rule 91.3A-1, Use of Steps, states in part:

Poles with Vertical Runs or Risers: All jointly used poles which support supply conductors shall be provided with pole steps if vertical runs or risers are attached to the surface of such poles.....

The following jointly used poles with vertical runs did not have pole steps:

- Pole #110076338 on corner of 9th Ave. and B St., San Mateo
- Pole #110076351 at 177 9th Ave., San Mateo
- Pole #110070433 at 1220 Maple St., San Mateo

GO 95, Rule 94.5B, Marking for Antenna, states:

Joint use poles shall be marked with a sign for each antenna installation as follows:

- (1) *Identification of the antenna operator*
- (2) *A 24-hour contact number of antenna operator for Emergency or Information*
- (3) *Unique identifier of the antenna installation.*

A CC antenna location did not have a sign for ownership and a 24-hour contact number (Pole #110070457 on corner of Maple St. and Seville Way, San Mateo).

GO 128, Rule 17.8, Identification of Manholes, Handholes, Subsurface and Self-contained Surface-mounted Equipment Enclosures, states:

Manholes, handholes, subsurface and self-contained surface-mounted equipment enclosures shall be marked as to ownership to facilitate identification by persons authorized to work therein and by other persons performing work in their vicinity.

A CC underground enclosure was not identified of its ownership (handhole at 21 San Mateo Dr., San Mateo).

We observed the following violations during the field inspection that were documented and/or addressed by CC during its last inspection, dated between January and May 2014:

GO 95, Rule 18B, Notification of Safety Hazards, states in part:

If a company, while performing inspections of its facilities, discovers a safety hazard(s) on or near a communications facility or electric facility involving another company, the inspecting company shall notify the other company and/or facility owner of such safety hazard(s) no later than 10 business days after the discovery. To the extent the inspecting company cannot determine the facility owner/operator, it shall contact the pole owner(s), who shall be responsible for promptly notifying the company owning/operating the facility with the safety hazard(s), normally not to exceed five business days after being notified of the safety hazard. The notification shall be documented and such documentation must be preserved by all parties for at least ten years.

- The following poles had pole top damage:
 - Pole #940 at 940 Park Ave., San Jose
 - Pole #12K235J at 148 S. Morrison Ave., San Jose
- A pole had a third-party abandoned communication cable wrapped around the pole obstructing climbing space (Pole #12K242J at corner of Park Ave. and S. Morrison Ave., San Jose).

GO 95, Rule 38, Table 2, Column C, Case 8, requires the minimum wire to wire clearance between two communication cables supported on the same poles to be 12 inches.

The following poles had CC cable with less than 24” clearance to another communication cable supported on the same poles:

- Pole #12K390J at 166 S. Morrison Ave., San Jose
- Pole #110076341 at 71 9th Ave., San Mateo
- Pole #110076350 at 50 9th Ave., San Mateo