

## PUBLIC UTILITIES COMMISSION

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November 7, 2008

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CPUC File No.: CIP200806

**SUBJECT:** Audit of Verizon's Novato District

On behalf of the Utilities Safety and Reliability Branch (USRB) of the California Public Utilities Commission, Steve Artus and I conducted an audit of Verizon's Novato District from October 28-30, 2008. The audit included a review of Verizon's maintenance programs for compliance with General Orders (GOs) 95 and 128.

During the inspection, we identified violations of one or more General Orders. A copy of the audit summary itemizing the violations is enclosed. Within 30 days, please advise me by electronic or hard copy of all the corrective measures taken, or planned to be taken by the Utility regarding the violation(s) and the date on which they were or will be corrected.

If you have any questions, please contact me at (415) 703-2192.

Sincerely,

Jadwindar Singh, P.E.  
Utilities Engineer  
Utilities Safety and Reliability Branch  
Consumer Protection and Safety Division

Enclosure: Audit Summary

CC: Steve Artus, Senior Utilities Engineer, CPSD  
David Larus, Construction Specialist ROS, Verizon

# Audit Summary

## Violations

(1) **General Order 95, Rule 31.2 Inspection of Lines**

*"Lines shall be inspected frequently and thoroughly for the purpose of insuring that they are in good condition so as to conform with these rules."*

**General Order 128, Rule 17.2 Inspection**

*"Systems shall be inspected by the operator frequently and thoroughly for the purpose of insuring that they are in good condition and in conformance with all applicable requirements of these rules."*

**General Order 128, Rule 22.4**

*"A Maintenance Program means a written policy that shall include the following key elements:*

- (1) Inspection Intervals*
- (2) Rejection Criteria*
- (3) Corrective actions"*

During our audit, Verizon representatives outlined the variety of methods used by technicians and management to identify GO violations including, but not limited to the "15 Minute Rule", Customer Calls, Plant Condition Reports, Customer Operations Quality Inspections, and Outside Plant Construction Quality Inspections. While these methods provide the opportunity to identify GO violations, they cannot be considered as an inspection program that meets the requirements of GO 95 Rule 31.2, and GO 128 Rules 17.2 and 22.4. Specifically, these GO rules mandate that all lines be inspected by the utility thoroughly and on a frequency determined by them. Our audit found that Verizon does not perform inspections that encompass all of the Utility's overhead and underground lines, nor does Verizon have a maintenance program that outlines the elements defined in GO 128 Rule 22.4. Verizon's current programs evaluate only a very small portion of their lines, and in no way meet the intent of the aforementioned rules.

Verizon must create an inspection/maintenance program that meets the requirements of GO 95 Rule 31.2, and GO 128 Rules 17.2 and 22.4.

(2) **10/29/08 – Field Location #3**  
**Job ID: A0402270, Completed 10/22/08**  
**75 Clausing Ct, Novato**

While verifying the work completed at the above address we discovered the two following violations. These violations occurred outside of Verizon's scope of work for this job, and per Verizon's current procedures, we do not find that these violations should have been identified by the technician working the job. However, these violations need to be corrected.

a) **General Order 95, Rule 84.8-D(4) Service Drops**

#### D. Clearances between Conductors

**(4) Above or below Supply Service Drops:**

*"The radial clearance between communication service drop conductors and supply service drop conductors may be less than 48 inches as specified in Table 2, Column C, Cases 4 and 9; Column D, Cases 3 and 8, but shall be not less than 24 inches. Where within 15 feet of the point of attachment of either service drop on a building, this clearance may be further reduced but shall be not less than 12 inches." (emphasis added)*

At the weatherhead, the service drop to 90 Clausing Ct. is in contact with the power service drop.

**b) General Order 95, Rule 38 Minimum Clearances of Wires from Other Wires, Table 2**

**Case 19 - Guys and span wires passing conductors supported on the same poles  
Column C - Communication Conductors (Including Open Wire, Cables and Service Drops)**

*3 inches*

The service drop to 95 Clausing Ct. is in contact with the communication down guy.

- (3) 10/29/08 – Field Location #5  
Job ID: B8718970, Completed 10/21/08  
1560 Indian Valley Rd, Novato**

While verifying the work completed at the above address we discovered the following violation. The violation is located on a riser pole that is located between the customer premises and another pole where the serving terminal is located. The aerial service drop runs from the serving terminal pole, to the riser pole, and then underground to the customer premises. Although we could not determine where the Technician's exact work occurred because the notes in the Trouble Ticket were vague, Verizon staff stated that the work most likely occurred at the serving terminal.

**General Order 95, Rule 87.7-D(1) Covering or Guarding**

**D. Risers**

**(1) Covered from Ground Level to 8 Feet above the Ground:**

*"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."*

We found that Verizon's service drop was uncovered from ground level to 8 feet at the riser pole.

Furthermore, we find that this violation should have been identified and remediated by the Technician per Verizon's "National Operators Field Guide" – Quality Assurance Checklist. Page 6 states,

*"On all field service order and repair activity, the Technician will inspect and upgrade the protector/NIJ/NID, drop, serving terminal, cross-connect, and trouble location to Verizon Standards."*

*"If the condition is not service-affecting but can be corrected within one hour by the on-site Technician:*

- *Correct the problem immediately only when at the customer premises, serving terminal, cross-connect, or at the location of the identified fault.*
- *Use PMO's to identify electrically faulted conditions which cannot be permanently repaired with in two hours or less."*

The riser violation is clearly within the scope of work and time identified by the Quality Assurance Checklist and should have been remediated by the technician. Please ensure that all Technician's are familiar with the details of Verizon's "National Operators Field Guide" – Quality Assurance Checklist.

- (4) **10/29/08 – Field Location #6**  
**Job ID: H3031210, Completed 10/16/08**  
**1650 Indian Valley Rd, Novato**

While verifying the work completed at the above address we discovered the following violation. It is not clear if this violation occurred outside of Verizon's scope of work for this job, as the Technician's exact work location could not be determined because the notes in the Trouble Ticket were vague. However, this violation needs to be corrected.

**General Order 95, Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1**

**Case 3 - Crossing or along thoroughfares in urban districts or crossing thoroughfares in rural districts.**

**Column B - Communication Conductors (Including Open Wire, Cables and Service Drops), Supply Service Drops of 0 - 750 Volts**

*18 feet*

We found that Verizon's service drop was only 14' 2" above ground at the center of the street crossing.

- (5) **10/29/08 – Field Location #7**  
**Job ID: A0361180, Completed 10/01/08**

## 1876 Indian Valley Rd, Novato

While verifying the work completed at the above address we discovered the following violation. Although we could not determine where the Technician's exact work occurred because the notes in the Trouble Ticket were vague, Verizon staff stated that the work most likely occurred at the serving terminal.

### General Order 95, Rule 31.1 Design, Construction and Maintenance

*"Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.*

*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 [the] communication or supply lines and equipment.*" (emphasis added)

At the serving terminal atop the pole across the street from 1876 Indian Valley Road, the services had been neither neatly nor orderly arranged. Since the Technician's work most likely occurred there, we expected that the Technician would have cleaned up the serving terminal as part of the job.

Furthermore, we find that this violation should have been identified and remediated by the Technician per Verizon's "National Operators Field Guide" – Quality Assurance Checklist, as it is clearly within the scope of work and time identified. Please ensure that all Technician's are familiar with the details of Verizon's "National Operators Field Guide" – Quality Assurance Checklist.

(6) **10/29/08 – Field Location #12**  
**Job: 3P0A0BD, Completed 5/30/08**  
**Intersection of H Lane and Bahia, Novato**

While verifying the work completed on Job 3P0A0BD we discovered the following violations. The violations exist on the pole in front of 170 H Lane (GT93709). This pole was not specifically part of the job, but is the next pole south of a midspan splice put in as part of the job. Since the violation occurs so closely to the scope of work, we find that the violation should have been identified and remediated during this job.

a) **General Order 95, Rule 87.7-D(1) Covering or Guarding**

**D. Risers**

**(1) Covered from Ground Level to 8 Feet above the Ground:**

*"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.”*

**b) General Order 95, Rule 84.6-D Vertical and Lateral Conductors**

**D. Vertical Runs**

*“Where bridled runs are not required to be covered by these rules, they shall be supported by bridle hooks or rings spaced at intervals of not more than 24 inches.”*

The aerial to underground service drop to 170 H Lane is not attached to the pole every 24 inches and is missing a riser cover from ground level to 8 feet.

Furthermore, an Outside Plant Construction “Splicing Quality Inspection” was performed on this job on 5/30/08. Although the violation exists outside the scope of the splicing job, we believe that this obvious violation located at the pole adjacent to the splice should have been identified. Please ensure that both Verizon construction and management field personnel are looking for GO violations within their scope of work.

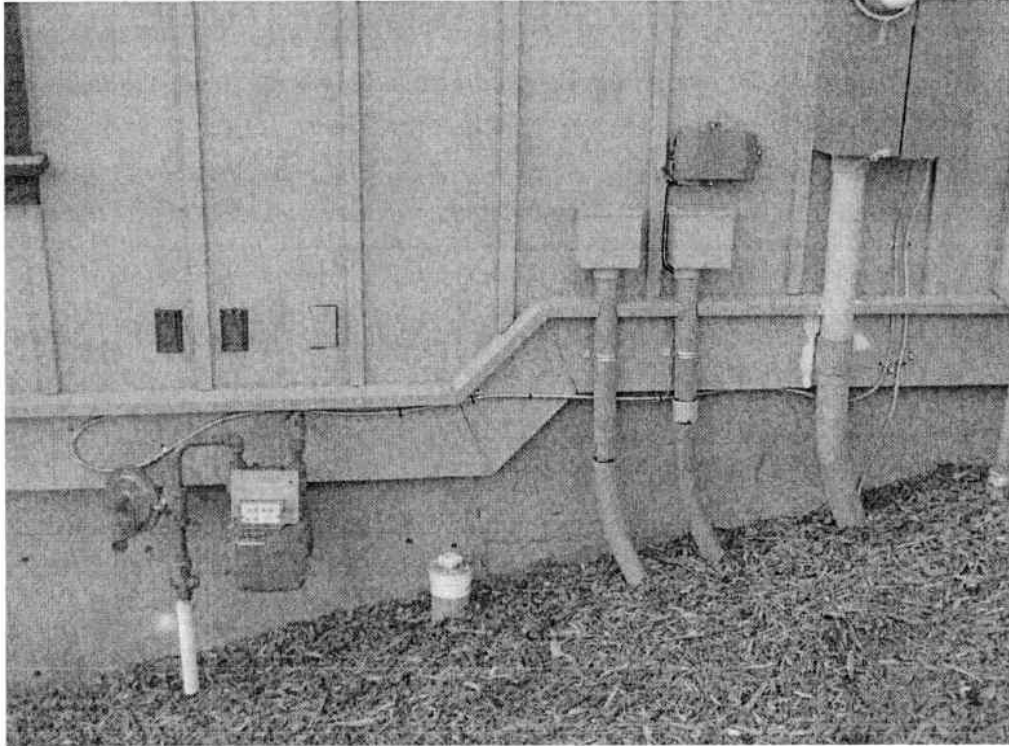
- (7) **10/29/08 – Field Location #13**  
**Job ID: T0463020, Completed 9/24/08**  
**2035 Laguna Vista Dr, Novato**

While verifying the work completed at the above address we discovered the following violation. The violation is located at the service entrance to the premises. A Customer Service “Quality Inspection” was also performed at this location.

**General Order 95, Rule 31.1 Design, Construction and Maintenance**

*“Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.*

*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 [the] communication or supply lines and equipment.”* (emphasis added)



At the service entrance, we found that the Verizon ground wire had been clamped to the customer side of the gas meter. After speaking with Verizon staff, as well as the PG&E serviceman who happened to be in the neighborhood at the time of the inspection, we found this violation was not intentional, as the Verizon staff had intended to bond to the cold water service (the PG&E gas meter had not yet been installed at the time of job). However, we find this unintentional, yet careless act to be a safety hazard. It is certain that this safety hazard would have persisted indefinitely had we not visited this job. Please ensure that all ground wires are properly terminated per Verizon procedures and local ordinances. Note: The Verizon ground wire was removed from the gas service at the time of this inspection.

- (8) **10/30/08 – Field Location #1**  
**Job ID: A0356890, Completed 9/30/08**  
**513 Atherton Ave., Novato**

While verifying the work completed at the above address we discovered the following violations. One violation is located on a riser pole (GT301448) that has the serving terminal for the above address attached. The other violation is located on an adjacent riser pole (GT139183) that carries the aerial service drop from pole GT301448, through the attached riser, and then to the customer premises. Although we could not determine where the Technician's exact work occurred because the notes in the Trouble Ticket were vague, Verizon staff stated that the work most likely occurred at the serving terminal.

**General Order 95, Rule 87.7-D(1) Covering or Guarding**

**D. Risers**

**(1) Covered from Ground Level to 8 Feet above the Ground:**

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

We found that the aerial to underground service drops at each pole, GT301148 and GT139183, were uncovered from ground level to 8 feet.

Furthermore, we find that this violation should have been identified and remediated by the Technician per Verizon's "National Operators Field Guide" – Quality Assurance Checklist. Page 6 states,

*"On all field service order and repair activity, the Technician will inspect and upgrade the protector/NIJ/NID, drop, serving terminal, cross-connect, and trouble location to Verizon Standards."*

*"If the condition is not service-affecting but can be corrected within one hour by the on-site Technician:*

- Correct the problem immediately only when at the customer premises, serving terminal, cross-connect, or at the location of the identified fault.*
- Use PMO's to identify electrically faulted conditions which cannot be permanently repaired with in two hours or less."*

The riser violations are clearly within the scope of work and time identified by the Quality Assurance Checklist and should have been remediated by the technician. Please ensure that all Technician's are familiar with the details of Verizon's "National Operators Field Guide" – Quality Assurance Checklist.

**(9) 10/30/08 – Field Location #2  
Job: 8P0A0BE, Completed 3/21/08  
Intersection of Olive and Atherton Ave., Novato**

While verifying the work completed on the above job we discovered the following violations. The job encompassed running new aerial cable across two poles and a new cable to an underground enclosure. We found two violations on pole GT139198 and one violation in the underground enclosure in front of 1 Cerruti Way.

**a) General Order 95, Rule 31.6 Abandoned Lines**

*"Lines or portions of lines permanently abandoned shall be removed by their owners so that such lines shall not become a public nuisance or a hazard to life or property.*



*For the purposes of this rule, lines that are permanently abandoned shall be defined as those lines that are determined by their owner to have no foreseeable future use."*

We found an abandoned "J" hook at the communication level on Pole GT139198. There are two new Verizon service drops attached to the pole and no Comcast service drops. We can only conclude that Verizon failed to remove the "J" hook after removing the old cables.

**b) General Order 95, Rule 38 Minimum Clearances of Wires from Other Wires, Table 2**

**Case 19 - Guys and span wires passing conductors supported on the same poles  
Column C - Communication Conductors (Including Open Wire, Cables and Service Drops)**

*3 inches*

On the same pole, GT139198, we found Verizon service drops in contact with the power company's down guy. Since Verizon had just installed new cable, and the power utility had not made any modifications, we find this to be a workmanship issue.

**c) General Order 128, Rule 31.6 Sealing Service Laterals**

*"Service conduits, by which water may enter buildings, shall be suitably plugged or sealed at the source of supply such as utilities' transformer or secondary handhole, and at the supply end of the conduit that enters the bottom of customer's terminating enclosure."*

At the underground enclosure in front of 1 Cerruti Way, we found that the service conduits were not plugged or sealed.

Furthermore, three separate Outside Plant Construction Quality Inspections had been performed on this job on 3/27/08, 3/29/08, and 3/29/08. It is not clear what the scope of these inspections were, but nevertheless, the Quality Inspections failed to find these GO violations.

**(10) 10/30/08 – Field Location #4  
Job: 3P0A0BQ, Completed 10/21/08  
Intersection of Harbor and Atherton Ave., Novato**

While verifying the work completed on the above job we discovered the following violations. The job was related to a fire damaged pole.

**a) General Order 95, Rule 84.6-D Vertical and Lateral Conductors**

**D. Vertical Runs**

*"Where bridled runs are not required to be covered by these rules, they shall be supported by bridle hooks or rings spaced at intervals of not more than 24 inches."*

We found that the vertical run is not attached to the pole every 24 inches.

**a) General Order 95, Rule 81.6 Stepping**

*"The lowest step on any stepped pole shall be not less than 7 feet 6 inches from the ground line where supply conductors are supported on the same pole with communication conductors."*

We found a pole step below 7' 6" from the ground.

These violations were created by Verizon personnel as part of the emergency job and should have been remediated prior to completion. The "Job Packet" states that all construction was completed on 10/21/08 although there are existing GO violations.

**(11) 10/30/08 – Field Location #5  
Car Pole Accident, Kenwood**

While verifying the work completed on the above job we discovered the following violation.

**General Order 95, Rule 35 Tree Trimming**

*"Communication and electric supply circuits, energized at 750 volts or less, including their service drops, should be kept clear of limbs and foliage, in new construction and when circuits are reconstructed or repaired, whenever practicable. When a utility has actual knowledge, obtained either through normal operating practices or notification to the utility, that any circuit energized at 750 volts or less shows strain or evidences abrasion from tree contact, the condition shall be corrected by slacking or rearranging the line, trimming the tree or placing mechanical protection on the conductor(s). For the purpose of this rule, abrasion is defined as damage to the insulation resulting from the friction between the tree and conductor. Scuffing or polishing of the insulating covering is not considered abrasion. Strain on a conductor is present when there is additional tension causing a deflection of the conductor beyond the slack of the span. Contact between limbs and these conductors, in and of itself, does not constitute a violation of the rule.*

We found that cables heading to the south from the car pole accident location have evidence of strain on the conductor as evidenced by the additional tension causing a deflection of the conductor beyond the slack of the span.

## **Concerns and Recommendations**

### **(1) Identifying GO Violations During the Course of Normal Business Work**

Verizon management explained that although Verizon does not have an inspection program, the Utility already identifies and remediates GO violations through its normal course of business work. Management cited the "15 Minute Rule", Customer Calls, Plant Condition Reports, Customer Operations Quality Inspections, and Outside Plant Construction Quality Inspections. However, our field verifications found this not to be the case. As evidenced by the GO violations found on this audit, it is clear that there are many violations that are not being caught by Verizon Technician's. Furthermore, we found that the Quality Inspections done by the Customer Operations and Outside Plan Construction personnel do not pick up all GO violations either. This evidence supports the need for Verizon to both reinforce its own procedures to identify GO violations during the course of normal business work, as well as to create a complaint GO inspection program.

### **(2) Trouble Ticket Description of Trouble Found**

While verifying Trouble Tickets in the field we, as well as Verizon Staff accompanying us, had a difficult, if not impossible time determining what the exact trouble was and where the Technician performed their work due to the vague description left by the Technicians in the "Trouble Found" field. We strongly recommend that Verizon Technician's fully and accurately describe:

- a) Trouble found
- b) Methods used to remediate trouble
- c) Location(s) of work performed, including pole numbers, enclosure numbers, etc.

These descriptions will better allow Verizon Management to identify locations visited by Technicians to ensure GO violation identification by them. Currently, there is no exact method to determine where a Technician has been and what GO violations should have been identified by them in order to verify compliance with Verizon procedures.

