

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



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Commission Order Instituting Rulemaking, to develop standards for electric system reliability and safety pursuant to D96-09-073.

Rulemaking 96-11-004  
(filed November 6, 1996)

Commission Order Instituting Investigation into rates, charges, service and practices of PG&E

Investigation 95-02-015

**SAN DIEGO GAS & ELECTRIC COMPANY  
GENERAL ORDER 165 CORRECTIVE MAINTENANCE PROGRAM  
REPORT FOR 2014**

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San Diego, California



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**GENERAL ORDER 165**  
**CORRECTIVE MAINTENANCE PROGRAM**

**REPORT FOR**

**2014**

This report contains the results of San Diego Gas & Electric (SDG&E) Company’s General Order (GO) 165 compliance program for inspection and maintenance of electric distribution facilities, and covers the period from January 1, 2014 through December 31, 2014.

SDG&E’s GO 165 compliance program is called the Corrective Maintenance Program (CMP) and is managed by SDG&E’s Program Management Group. Through coordination with the Construction & Operations (C&O) Centers’ Electric Supervisors, Inspectors, Linemen, and other personnel, the inspections required by GO 165 are performed along with any corrective work.

**Summary of the 2014 Year-end Report**

**Inspections:**

**SDG&E General Order 165 Maintenance 2014 Inspections Report**

| <b>Type of Inspection by Facility</b> | <b>Facilities Due<sup>1</sup></b> | <b>Facilities Outstanding<sup>2</sup></b> |
|---------------------------------------|-----------------------------------|---|
| Overhead Detailed                     | 50,191                            | 249                                       |
| Underground Detailed                  | 28,224                            | 20  |
| Wood Pole Intrusive                   | 23,881                            | 0   |
| <b>Type of Inspection by Grid</b>     | <b>Grids Due</b>                  | <b>Grids Outstanding</b>                  |
| Patrols <sup>3</sup>                  | 26,828                            | 0   |

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<sup>1</sup> This column represents SDG&E’s determination about the number of facilities due for inspection in 2014.

<sup>2</sup> This column represents the number of facilities that were due to be inspected in 2014, but were not inspected by the end of 2014. This does not mean that the inspections remain outstanding at the time of this report.

<sup>3</sup> Between 1998 and 2013, SDG&E Patrol Grids measured in a 3,000 by 2,000 foot grid dimension. Due to the implementation of a new GIS system, use of a 1,500 by 1,000 foot grid dimension has been implemented in 2013 for SDG&E Patrol Grids.

All facilities listed as outstanding, in the above table, have been completed as of June 1, 2015. The 249 overhead inspections included in the “Outstanding” column were not inspected by the end of 2014 because, in the process of converting data from our legacy system in 2010, SDG&E’s research discovered some poles that were converted, but were not actually field inspected. This was an unintended, administrative error. SDG&E has since taken steps to develop automated reports designed specifically to identify this type of inaccuracy in the future. SDG&E identified this administrative error in its 2013 General Order 165 Maintenance Inspection Report. The error has not recurred; SDG&E found additional facilities “due” in 2014 as a result of the original error.

In regard to the Outstanding 20 underground inspections, the inspections were delayed in connection with SDG&E’s adjustment to the CPUC’s interpretation of the General Order 165 “year” inspection timeframe. SDG&E filed an Advice Letter (2510-E U-902-E) requesting approval to implement our inspection method to comply with General Order 165 year inspection requirement. In anticipation of approval of the Advice Letter, SDG&E began scheduling underground inspections. However, a number of those inspections were unintentionally scheduled for a calendar interval that had already been completed. SDG&E has taken steps to develop automated reports to avoid this type of administrative error in the future.

### **Division of Inspections**

The quantity of facilities is dynamic because of additions and removals of equipment due to maintenance, demolition, new customers, new technology, reliability, and conversion of overhead lines to underground lines or other changes to the electric distribution system. When new equipment is added, it is regarded as inspected at date of installation. The new piece of equipment is then

scheduled for inspection during the next inspection cycle for the respective equipment type. All equipment in the current inventory is scheduled for inspection at the required interval.

All equipment on a given structure is inspected at the same time and the inspection record is documented in the structure record. The CMP goals for the year historically have been determined by the system-wide counts of facilities in each inspection type, divided by the number of years in the cycle length. This practice created inspection cycles setting the CMP goals for the year. The goals for the year are determined by the last inspection date. SDG&E's CMP cycles are designed to exceed or adhere to GO 165 requirements. The following section describes SDG&E's CMP cycles by equipment type.

### **Description of Major SDG&E CMP Cycles**

#### OVERHEAD VISUAL

- OHVI (Overhead Visual, Five-year)

This cycle consists of a detailed walk-around inspection of all distribution poles, pole-mounted facilities with primary and secondary conductors, and distribution equipment on transmission poles. These inspections identify conditions that are out of compliance with GO 95. This is a five-year cycle.

#### ABOVE GROUND 5 (INTERNAL AND EXTERNAL INSPECTIONS)

This cycle consists of Above Ground Dead-front (AGE) and Above Ground Live-front (AGI) detailed external and internal inspections of dead-front and live-front pad-mounted facilities to identify conditions that are out of compliance with GO 128.

- AGE (Above Ground Dead-front, Five-year)

This cycle consists of a detailed external and internal inspection of dead-front pad-mounted facilities to identify conditions out of compliance with GO 128. This is a five-

year inspection cycle. Originally, the AGE cycle only required an external inspection; however, changes in 1999 modified this requirement to include an internal inspection. The cycle is still named AGE to separate the dead-front equipment data from live-front equipment data.

- AGI (Above Ground Live-front, Five-year)

This cycle consists of a detailed external and internal inspection of live-front pad-mounted facilities to identify conditions out of compliance with GO 128. This is a five-year inspection cycle.

#### SUBSURFACE, WITH EQUIPMENT

- SS3 (Subsurface, Three-year)

This cycle consists of a detailed inspection of subsurface structures (manholes, vaults, primary hand-holes and subsurface enclosures) containing distribution equipment. Thus, structures with only cable taps, splices or pass-throughs are excluded as they are not required by GO 165. The SS3 cycle consists of a detailed inspection of these facilities to identify conditions out of compliance with GO 128. This is a three-year inspection cycle.

#### SWITCH

- SWI (Oil or Gas Switch, Three-year)

This is a three-year cycle that consists of a specialized inspection of all subsurface and pad-mounted oil and gas switches. Oil samples and gas pressure readings are obtained and recorded in SAP. The laboratory performs analysis of oil samples for low dielectric strength and high water content. These results and the inspection records are stored in SAP. The status of “Do Not Operate Energized” (DOE) switches for prioritizing

replacements are also tracked in SAP and GIS mapping system. Other conditions out of compliance with GO 128 are also identified.

## WOOD POLE INTEGRITY

- Pole (10/20 year)

These inspections are performed on a Ten-year cycle. Each pole is inspected visually, and if conditions warrant, intrusively. Any pole 15 years of age or older is inspected intrusively. The form of the intrusive inspection is normally an excavation about the pole base and/or a sound and bore of the pole at ground line. Treatment is applied at this time in the form of ground line pastes and/or internal pastes. The ten-year cycle fulfills the requirements of GO 165, which are: (1) all poles over 15 years of age are intrusively inspected within ten years; and (2) all poles which previously passed intrusive inspection are to be inspected intrusively again on a 20-year cycle.

The wood pole integrity inspections are currently performed by a SDG&E contractor who also applies wood preservative treatments and installs mechanical reinforcements (C-truss). The type of treatment is dependent upon the age of the pole, the individual inspection history, and the overall condition of the structure. SDG&E's Vegetation Management group administers the wood pole intrusive inspection and treatment program.

If a pole that appears to need replacement is found on a CMP inspection, SDG&E's contractor for wood pole integrity inspections or the Districts may bore into the pole to determine if it needs reinforcement or replacement based on the remaining shell thickness. The choice to restore a pole rather than replace the pole is based on the strength of the pole (measured by remaining shell thickness). SDG&E's Transmission

Engineering and Electric Distribution Standards Specification for Inspection, Treatment and Reinforcement of In-Service Wood Poles (Specification NO. TE-0108 and Specification NO. 337) specifies the criteria for the rejection of a pole. It also addresses a pole's suitability for C-truss based on the remaining shell thickness for various lengths of pole. If a pole does not have sufficient shell thickness for C-truss, it is rejected and replaced.

#### PATROL, URBAN

- Patrol 1 (urban patrol, one year)

The purpose of the urban patrol is to identify obvious structural problems and hazards. This cycle consists of a simple visual inspection of every applicable overhead, underground and streetlight facility in rural areas. Under agreement of interpretation with the CPUC, "urban" is defined as incorporated areas (GO 165 defined "urban" as those areas with 1000 persons or more per square mile). GO 165 defines a "patrol" as a "simple visual inspection, of applicable utility equipment and structures that is designed to identify obvious structural problems and hazards." When Patrols have been completed, any identified structural problems and hazards are recorded in SAP.



## PATROL, RURAL

- Patrol 2
- <sup>4</sup> (rural patrol, two year)

The purpose of the rural patrol is to identify obvious structural problems and hazards.

This cycle consists of a simple visual inspection of every applicable overhead, underground and streetlight facility in rural areas. Under agreement of interpretation with the CPUC, "rural" is defined as unincorporated areas (GO 165 defined "rural" as those areas with less than 1000 persons per square mile). GO 165 defines a "patrol" as a "simple visual inspection, of applicable utility equipment and structures that is designed to identify obvious structural problems and hazards."

Consistent with D. 09-08-029, SDG&E now conducts annual patrol inspections in rural areas which are included in SDG&E's Fire Threat Zone. When Patrols have been completed, any identified structural problems and hazards are recorded in SAP

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<sup>4</sup> Commission Decision D. 09-08-029 in R. 08-11-005 amended GO 165 Section IV to increase the frequency for Patrol Inspections in rural areas determined to be within extreme and very high fire threat zones in Southern California to once per year. The basis for this determination is the California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) Fire Threat Map. However, the boundaries of the map were to be broadly construed and Utilities were encouraged to apply their expertise and judgment to determine if local conditions required adjustments to the boundaries of the map. Based on D. 09-08-029, SDG&E has developed the SDG&E Fire Threat Zone Map and has implemented annual Patrol Inspections in the SDG&E Fire Threat Zone at the start of 2010.

## SDG&E CMP INSPECTION CYCLES

### SDG&E System Inspection Cycles (Maximum intervals in years)

|  | PATROL  |          | DETAILED |        | INTRUSIVE                         |                                 |
|--|---------|----------|----------|--------|-----------------------------------|---------------------------------|
|  | Urban   | Rural    | Urban    | Rural  | Urban                             | Rural                           |
| Transformers   |         |          |          |        |                                   |                                 |
| Overhead   | Patrol1 | Patrol2* | OHVI 5   | OHVI 5 |                                   |                                 |
| Underground<br>(Subsurface)  | Patrol1 | Patrol2* | SS 3     | SS 3   |                                   |                                 |
| Pad Mounted (live front)   | Patrol1 | Patrol2* | AGI 5    | AGI 5  |                                   |                                 |
| Pad Mounted (dead front)   | Patrol1 | Patrol2* | AGE 5    | AGE 5  |                                   |                                 |
| Switching/Protective Devices   |         |          |          |        |                                   |                                 |
| Overhead   | Patrol1 | Patrol2* | OHVI 5   | OHVI 5 |                                   |                                 |
| Underground<br>(Subsurface)  | Patrol1 | Patrol2* | SS 3     | SS 3   |                                   |                                 |
| Pad Mounted (live front)   | Patrol1 | Patrol2* | AGI 5    | AGI 5  |                                   |                                 |
| Pad Mounted (dead front)   | Patrol1 | Patrol2* | AGI 5    | AGI 5  |                                   |                                 |
| Oil & Gas switches<br>(above or below surface)                                     | Patrol1 | Patrol2* | SW 3     | SW 3   |                                   |                                 |
| Regulators/Capacitors  |         |          |          |        |                                   |                                 |
| Overhead   | Patrol1 | Patrol2* | OHVI 5   | OHVI 5 |                                   |                                 |
| Underground<br>(Subsurface)  | Patrol1 | Patrol2* | SS 3     | SS 3   |                                   |                                 |
| Pad Mounted (live front)   | Patrol1 | Patrol2* | AGI 5    | AGI 5  |                                   |                                 |
| Pad Mounted (dead front)   | Patrol1 | Patrol2* | AGE 5    | AGE 5  |                                   |                                 |
| Overhead Conductors and Cables   | Patrol1 | Patrol2* | OHVI 5   | OHVI 5 |                                   |                                 |
| Street Lighting  | Patrol1 | Patrol2* | x        | x      |                                   |                                 |
| Wood Poles under 15 years  | Patrol1 | Patrol2* | x        | x      | x                                 | x                               |
| Wood Poles over 15 years which<br>have not been subject to intrusive<br>inspection | Patrol1 | Patrol2* | x        | x      | Wood<br>Pole<br>Intrusive<br>e 10 | Wood<br>Pole<br>Intrusive<br>10 |
| Wood Poles which passed<br>intrusive inspection                                    |         |          |          |        | Wood<br>Pole<br>Intrusive<br>e 20 | Wood<br>Pole<br>Intrusive<br>20 |

\*Patrol inspections conducted once per year within SDG&E's Fire Threat Zone as described in footnote 2, page 8.

## OFFICER VERIFICATION

I, John Sowers, declare the following:

I am an Officer of San Diego Gas & Electric and am authorized to make this verification on its behalf. I am informed and believe that the matters stated in the foregoing 2014 General Order 165 Report 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 this 24<sup>th</sup> day of June, 2015, in San Diego, California.



John Sowers

Vice President of Electric Distribution Operations  
San Diego Gas & Electric Company

Respectfully submitted,

/s/ Stacy Van Goor

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June 24, 2015  
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