BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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 2013

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GENERAL ORDER 165

CORRECTIVE MAINTENANCE PROGRAM

REPORT FOR

2013

#288829

PREFACE

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, 2013 through December 31, 2013. 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 and follow-up work to correct deficiencies are completed.

This report also includes information regarding errors in SDG&E's inspection-scheduling database which caused 887 detailed inspections to be delayed beyond the five-year period interval specified by General Order 165 during the period 2010 to 2013. SDG&E had requested a sixty-day extension of time for the filing of this report, but as of the time of this filing, the Commission had not granted the extension of time. This report provides the information regarding the delayed inspections SDG&E had available at the time of this filing, but SDG&E continues to review its records and interview employees to determine the causes of the scheduling delays. In the event material new information is developed in this process, SDG&E will provide it to the Commission Safety and Enforcement Division.

Summary of the 2013 Year-end Report

SDG&E's goal is to correct nonconformances found during GO 165 inspections within twelve months from the date of inspection. Nonconformances that may pose a hazard to the public and/or electric distribution line personnel are repaired within a shorter timeframe, based upon the severity and immediacy of the hazard. Nonconformances whose correction are beyond SDG&E's direct and/or sole control, such as those involving private property owners, environmental constraints, and/or related to the facilities of other third parties, may require more time to resolve. Such nonconformances, if nearing their twelve-month due date, are placed in the "Deferred" category and tracked by SDG&E's Compliance Management Group, Vegetation Management Department, Land Management Department, and Construction & Operation (C&O) Centers. Facilities that are considered for and granted "Deferred" status must meet strict internal requirements.

SDG&E General Order 165 Maintenance 2013 Inspections Report

Type of Inspection by Facility	Facilities Due	Facilities Outstanding
Overhead Detailed	44,205	426; completed by July 1, 2014
Underground Detailed	25,899	0
Wood Pole Intrusive	22,757	0
Type of Inspection by Grid	**Grids Due**	**Grids Outstanding**
Patrols[1]	26,769	0

[1] 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.

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. New 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 according to intervals provided in GO 165.

All equipment on a given structure is inspected at the same time and the inspection record is documented in the structure record. SDG&E's 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 creates inspection cycles setting the CMP goals for the year. The goals for the year are determined by the last inspection date for each piece of equipment. SDG&E's CMP cycles are designed to exceed or adhere to all 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 Inspection, five-year intervals)

  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. These inspections are conducted on a five-year cycle.

ABOVE GROUND FIVE (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 intervals)

  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. These inspections are conducted on 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 intervals)

  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. These inspections are conducted on a five-year inspection cycle.

SUBSURFACE, WITH EQUIPMENT

- SS3 (Subsurface, three-year intervals)

  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 inspection of these structures 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. These inspections are conducted on a three-year inspection cycle.

SWITCHES

- SWI (Oil or Gas Switch, three-year intervals)

  The inspection of switches is conducted on a three-year cycle and 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 SDG&E's SAP Plant Maintenance system. The laboratory analyzes oil samples for low dielectric strength and high water content. These results and the inspection records are stored in the SAP Plant Maintenance system. The status of "Do Not Operate Energized" (DOE) switches for prioritizing replacements are also tracked in SDG&E's 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 fifteen 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 fifteen years of age must be intrusively inspected within ten years; and (2) all poles which previously passed intrusive inspection are to be inspected intrusively again on a twenty-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 as measured by the pole's 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. These inspections consist of a simple visual inspection of every applicable overhead, underground and streetlight facility in rural areas. Under an agreement with the CPUC, SDG&E defines "urban" as incorporated areas (compared to GO 165, which defines "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 the SDG&E SAP records.

PATROL, RURAL

- Patrol 2[2] (rural patrol, two year)

  The purpose of the rural patrol is to identify obvious structural problems and hazards. These inspections consist of a simple visual inspection of every applicable overhead, underground and streetlight facility in rural areas. Under an agreement with the CPUC, SDG&E defines "rural" as unincorporated areas (compared to GO 165, which defines "rural" as those areas with less than 1000 persons per square mile). GO 165 defines a "patrol" as a "simple visual inspection, of

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[2] Commission Decision 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 Decision 09-08-029, SDG&E has developed the SDG&E Fire Threat Zone Map and implemented annual Patrol Inspections in the SDG&E Fire Threat Zone at the start of 2010.

applicable utility equipment and structures that is designed to identify obvious structural problems and hazards."

Consistent with Commission Decision 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 SDG&E's SAP system.

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 (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 (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 (above or below surface)	Patrol1	Patrol2*	SW 3	SW 3		
Regulators/Capacitors						
Overhead	Patrol1	Patrol2*	OHVI 5	OHVI 5		
Underground (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 have not been subject to intrusive inspection	Patrol1	Patrol2*	x	x	Wood Pole Intrusive 10	Wood Pole Intrusive 10
Wood Poles which passed intrusive inspection					Wood Pole Intrusive 20	Wood Pole Intrusive 20

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

Errors in Scheduling Detailed (Five-Year) Inspections (2010 to 2013)

A. Introduction

In 2014, SDG&E's Compliance Management Department performed a routine, manual audit of the Beach Cities Construction and Operation District 2013 inspection and corrective-maintenance programs. The audit involved the review of randomly selected inspection schedules and associated corrective-maintenance logs. The audit is done for operational purposes as well as to assure the accuracy of the information presented to the Commission in this annual report. On or about June 9, 2014, the internal audit revealed that the detailed inspections required for three distribution poles in the Beach Cities District of SDG&E's service area had not been completed within the normal five-year cycle for such inspections. Further investigation disclosed that incorrect data entries found in SDG&E's SAP Plant Maintenance system[3] had resulted in erroneous, out-of-cycle schedules for the detailed inspections required for these three poles. Due to the nature of these errors, SDG&E reviewed its entire inspections and corrective-maintenance database to determine if other scheduling errors had occurred. The nature of the errors SDG&E discovered and the corrective measures SDG&E has taken to remediate the effects of those errors are described below.

B. The Nature of the Scheduling Errors

The comprehensive review of SDG&E's inspection database prompted by the three errors found during the Beach Cities audit indicated that there were various errors in the reference dates[4] entered into SDG&E's inspection-scheduling database for equipment located throughout SDG&E's service territory. Once entered into SDG&E's inspection database, these reference dates automatically trigger the timely scheduling of

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[3] The SAP Plant Maintenance system is a comprehensive enterprise-wide control system, integrating accounting, budgeting, operational management, and other corporate functions within a common software, technology and data platform.

[4] In this context, "reference dates" means the date on which the last inspections for any specific facility was conducted.

the next inspections for that facility. Because there were errors in the reference dates entered into the SDG&E inspection database for 886 distribution poles and, in one instance, for pad-mounted equipment, the scheduling of the detailed inspections for those facilities was not scheduled within the five-year period required by General Order 165. As a part of the records review process, the erroneous inspection reference dates were corrected. The causes of these data-entry errors are described below.

1. Data Transfer and Conversion Errors

The large majority of the errors found in the SDG&E inspection database were the result of data-transfer and –conversion errors that occurred during the 2010 implementation of two simultaneous systems changes.[5] The first change involved the larger, companywide implementation of the SAP Plant Maintenance system. Inspection schedules were among the data transferred from existing SDG&E records and management systems to the new SAP system. During the time of the transition from the legacy management system to the new SAP system, SDG&E was also implementing a companywide efficiency initiative known as "Operational Excellence 2020" ("OpEx2020"). SDG&E's inspections and corrective-maintenance program was a part of this initiative. Under OpEx2020, each distribution pole was assigned to a specific "pole segment" consisting of between one to ten poles; individual poles were assigned to pole segments based on their location, proximity, similarity, and other attributes relevant to the operational efficiencies OpEx2020 was designed to achieve.

Upon their assignment to a pole segment, the inspection and maintenance of the individual distribution poles and the equipment attached to those poles were to be coordinated for the entire pole segment. In developing the pole segments, it was sometimes the case that the previous detailed inspections for the individual poles in a given pole segment might not have been performed in the same calendar year. To ensure

that all inspections would be performed within the periods required by General Order 165, all of the poles assigned to the same pole segment were supposed to have been assigned to the earliest inspection schedule for the poles in the pole segment. For example, where four poles in a pole segment had undergone a five-year detailed inspection in 2008, 2009, 2009, and 2010, respectively, the scheduling data entry for all of the poles in this pole segment should have indicated that each pole had been inspected in 2008 and was due for its next inspection in 2013, that is, five years after the earliest inspection for the poles in the pole segment as a whole, or, in the example, 2008.

Although the above protocols had been established as part of the data-conversion process, the scheduling reference dates for the new OpEx2020 pole segments entered into the SAP Plant Maintenance system did not always coincide with those protocols. Upon the discovery of the three errors during the audit of the Beach Cities inspection records, SDG&E performed a comprehensive, manual review of the inspection records for all eight SDG&E construction and operation districts. The review confirmed that the inspection schedules for pole segments throughout SDG&E's service area were largely accurate, but that "mixed" pole segments occasionally bore reference dates other than the earliest inspection dates for one or two poles in those segments. These data-transfer errors resulted in the omission of certain facilities from the inspection schedules for the year during which their detailed inspections were due under the terms of General Order 165. The inspections were scheduled immediately upon the discovery of the errors and all have been completed at the time of this filing. In addition, the erroneous scheduling data have now been corrected in the SDG&E inspection database.

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[5] SDG&E representatives met with members of the Commission Safety and Enforcement Division on June 17, 2014, and described the errors discussed in this part of this report. At the time of that meeting, this was the only source of the reference-date errors known to the company.

2. The Use of Placeholder Reference Dates

A minority of the errors found in the SDG&E inspection database were the result of a process issue.[6] In some cases, proxy scheduling information was entered into SDG&E's records in 2010 as a temporary measure to overcome a technology constraint in SDG&E's new SAP Plant Maintenance enterprise and control software.

In order to generate work orders to repair facilities as deemed appropriate by an inspection, the SAP Plant Maintenance protocols require the entry of specific information, including the date of the inspection triggering the repair order. As the new SAP Plant Maintenance system was being implemented, SDG&E personnel generated a small number of repair work orders using "placeholder" reference dates, that is, dates other than the actual dates of the inspections prompting the repair orders. Although these entries were to be corrected at a later time, the data corrections were apparently not made and, as a result, the placeholder data entries, rather than the correct reference dates, remained in the SDG&E inspection database. Once again, inspections which had not been scheduled due to these data errors were scheduled shortly after the discovery of the errors and all were completed by the time of the filing of this report. In addition, the reference-date errors have now been corrected in the SDG&E inspection database.

3. Other Causes

In addition to the foregoing, SDG&E's records indicate a handful of detailed inspections were not scheduled within the five-year interval required by General Order 165 due to causes other than the two described above. SDG&E continues to investigate the nature of these other potential causes. At the time

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[6] The cause of these errors came to light on June 26, 2014, as SDG&E was concluding the review of its records and was first disclosed to the Commission by letter from John A. Sowers, Vice President of Electric Distribution Operations to Paul Clanon, Executive Director of the Commission on June 30, 2014, immediately after SDG&E confirmed the veracity of the new information.

of this filing, these other potential causes appear to have led to missing inspections for less than a dozen distribution poles.

C. Follow-Up and Prevention of Reoccurrence

Upon the discovery of the errors in its inspection-scheduling database, SDG&E immediately assigned field crews to perform out-of-cycle inspections for the facilities whose detailed inspections had not been performed according to SDG&E's inspection protocols and General Order 165. As a result, SDG&E completed all of the out-of-cycle inspections within three weeks of the discovery of the error; details regarding those inspections are reported in the table below.

Year Due	Out-of-Cycle Overhead Detailed Inspections	Status of Out-of-Cycle Inspections
2013	426	426 completed by July 1, 2014
2012	347	347 completed by July 1, 2014
2011	104	104 completed by July 1, 2014
2010	9	6 completed by May 8, 2011 3 completed by July 1, 2014
Year Due	**Out-of-Cycle Pad-Mount Inspections**	**Status of Out-oc-Cycle Inspections**
2010	1	Completed on May 31, 2011

SDG&E has also corrected more than ninety percent (90%) of the nonconformances identified for these facilities during the recent out-of-cycle inspections. SDG&E expects that 100 percent of the necessary corrections will be completed in accordance with SDG&E's internal operating practices which require

corrections to be completed no later than twelve months from the time a nonconformance is identified. Details regarding the status of those corrections are reported in the table below.

District	Project Pending Poles	Project Pending Nonconformances*	Completed Nonconformances (Includes Cleared and Field Cleared)	Total Nonconformances	% Completed
BCH	1	1	67	68	99%
CMT	7	13	11	24	46%
EST	0	0	25	25	100%
MTE	6	6	6	12	50%
NRC	0	0	33	33	100%
NRE	0	0	102	102	100%
RAM	1	1	50	51	98%
ORC	1	1	1	2	50%
ALL	16	22	295	317	93%

* Multiple nonconformances can occur on a single distribution pole.

In addition to completing the out-of-cycle inspections and commencing to perform the repairs identified by the inspections, SDG&E undertook a comprehensive review of the information entered into its inspection database records. During the course of this review, SDG&E's scheduling systems were corrected to assure that all future inspections, from 2014 forward, will be conducted in full compliance with the periods specified in General Order 165. SDG&E is confident that all data errors and anomalies relevant to the SDG&E inspection and corrective-maintenance program have been identified and corrected as of the time of the filing of this report.

Because the inspection-scheduling errors resulted from the concurrent implementation of two extraordinary system and data conversions, the errors have been determined to constitute a one-time, unique event. The erroneous scheduling data (i.e., the reference dates) previously entered into SDG&E's SAP Plant Maintenance system have been corrected. Additionally, SDG&E has revised its previous "calendar-year" inspection schedules to comport with the new fifteen-month-long "year" pursuant to Commission Decision 12-01-032, using the scheduling procedures described in SDG&E Advice Letter 2519-E (effective September 13, 2013). Based upon its review of the facts and circumstances and the new inspection-scheduling program now in place pursuant to Advice Letter 2519-E, SDG&E believes the scheduling issues discussed above to have been fully remediated and will not reoccur.

OFFICER VERIFICATION

I, John A. Sowers, do hereby declare under penalty of perjury that the facts stated in the San Diego Gas & Electric Company GENERAL ORDER 165 CORRECTIVE MAINTENANCE PROGRAM REPORT FOR 2013 dated July 1, 2014, to which this verification is attached, are true and correct. I make this declaration on the basis of facts known by me to be true or information provided to me which I believe to be true. I further declare that I am on the date set forth below an officer of SDG&E and am authorized to execute this verification in my capacity as an officer of SDG&E.

Executed this 1st day of July 2014, in San Diego, California.

/s/ John Sowers

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

Respectfully submitted,

/s/ Alvin S. Pak

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