

STATE OF CALIFORNIA

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**INSPECTION CYCLES**

**FOR**

**ELECTRIC DISTRIBUTION FACILITIES**



Prescribed by the  
**PUBLIC UTILITIES COMMISSION**

OF THE  
**STATE OF CALIFORNIA**  
GENERAL ORDER No. 165

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**General Order  
Number 165**

Prescribed by the  
**Public Utilities Commission**  
of the  
State Of California

California Public Utilities Commission  
505 Van Ness Avenue  
San Francisco, Ca 94102

**Decision No. 97-03-070**  
**Before the Public Utilities Commission of the**  
**State of California**

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**Opinion**

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We herein adopt final inspection cycles for wood poles and overhead, padmounted and underground equipment of electric utility distribution systems.

**I. Background**

This decision is part of an ongoing process of developing prescriptive and performance standards for electric distribution system performance. We initiated this inquiry in Decision (D.) 95-09-043, which recognized the need for measurable standards or benchmarks for assessing the reasonableness of electric utility distribution system performance. Subsequently, the California Legislature enacted Assembly Bill (AB) 1890, which adopted Public Utilities code (PU) Section 364, requiring the Commission to "adopt inspection, maintenance, repair, and replacement standards" no later than March 31, 1997. Following workshops conducted by Commission staff and submittal of utility proposals, we issued D.96-11-021. That decision proposed rules addressing the appropriate inspection cycles for electric utility distribution systems. On December 2, 1996, the parties filed comments on the proposed rules. The parties who filed comments are Pacific Gas and Electric Company (PG&E), Southern California Edison Company (Edison), Sierra Pacific Power Company (Sierra), San Diego Gas and Electric Company (SDG&E), Pacific Power (Pacific), Office of Ratepayer Advocates (ORA), The Utility Reform Network (TURN), and California Coalition of Utility Employees (CUE).

In summary, D.96-11-021 set forth the proposals for appropriate inspection intervals, for recording the results of inspections and reporting them to the Commission. We incorporate by reference the discussion in D.96-11-021 regarding the criteria by which we have considered the rules adopted here, the history of this proceeding, and related matters.

**II. Inspection Cycles**

D.96-11-021 proposed inspection cycles for various types of distribution facilities and equipment, including wood poles. We herein adopt the inspection cycles presented in Appendix A of this order, which are those we proposed in D.96-11-021 except where noted below.

**A Comments of the Parties**

ORA comments that some of the inspection cycles proposed in D.96-11-021 are actually less stringent than those proposed by one or more of the utilities for certain types of facilities. ORA believes the result of adopting more lenient inspection standards will be to reduce the frequency of corresponding

maintenance and repair. ORA believes the Commission should adopt the utilities' maintenance plans in recognition that different utility systems require different inspection cycles. TURN makes similar comments, arguing that the utilities should not be permitted to extend their inspection cycles.

Edison suggests several specific modifications to the proposals in D.96-11-021. It recommends that inspection cycles for wood poles that have previously passed intrusive inspections be extended to 20 years. It suggests that detailed inspections of underground, padmounted, and overhead equipment and facilities be extended to every six years.

Edison also comments that the utilities cannot visually inspect underground cable because most of it is buried in conduit or directly in the ground. It observes that underground cable is an extremely reliable part of its system and does not require regular inspections.

PG&E objects to a requirement that underground and padmounted facilities be visually inspected every year, arguing that such inspections or patrols will result in few, if any, findings of deterioration or degradation. It comments that problems resulting from overgrown vegetation would be identified during three-year inspections. It believes the cost of annual inspection would exceed the benefits.

Sierra proposes a five-year inspection cycle for underground facilities and asks the Commission to designate all of its territory as "rural."

SDG&E states that its service territory varies in many ways, both internally and as compared to the other utilities in California, and believes that, where appropriate, these variances should be recognized to avoid potential unnecessary expenditures.

Pacific proposes numerous changes to the inspection cycles proposed in D.96-11-021 but does not justify them. We therefore have no basis upon which to make the modification Pacific proposes.

## **B Discussion**

We adopt the inspection cycles set forth in Appendix A, which are in some cases different from those we proposed in D.96-11-021. These changes are made in response to the comments we received from the parties.

We adopt Edison's recommendation to extend the inspection cycle to 20 years for wood poles that have previously passed intrusive inspections. Edison convinces us that, based on its experience, this interval is reasonable where a pole has passed such an inspection. We also modify our proposal to exclude underground cable from regular inspections, as Edison proposes, because such inspections appear impractical and unnecessary.

Edison does not justify a six-year inspection cycle for other facilities except to say its practice is to inspect on a "continuous" basis. If that is true, Edison should not object to the inspection cycles we adopt today, which are the same as we proposed in D.96-11-021. PG&E does not convince us to eliminate annual visual inspections of underground and padmounted facilities. Based on our review, such

inspections appear consistent with industry practice and may be conducted during the course of other business.

Similarly, Sierra fails to justify its suggestion to reduce the proposed inspection cycles for underground facilities and we therefore reject this suggestion. We also decline to designate Sierra's territory as "rural," since we have no evidence upon which to base such a finding and the matter is outside the scope of this rulemaking. We do, however, modify the General Order to specify definitions of "urban" and "rural." As Edison suggests, we will define "urban" as an area populated by more than 1,000 persons per square mile, a definition used by the United States Bureau of the Census..

We reject SDG&E's apparent suggestion that the utilities should have discretion to determine appropriate inspection cycles, except to the extent the utilities have discretion to inspect facilities more frequently than the standards require. SDG&E raises the point that its territory may be significantly different from that of other utilities in California. We have already taken into account the various considerations laid out in Section 364 (b) in developing our statewide standards. But, in developing statewide standards, significant issues of local geography and weather may be obscured. We do not have a sufficient record in this case to develop different standards tailored to the huge variety of local terrains and climates in our large and complex state, and cannot in this order adopt the multitude of different standards implied by SDG&E's statements.

In D.96-11-021, we stated our intent to adopt general inspection standards and place the burden on utilities to request and define legitimate exceptions. We required that exceptions must be very specific, and supported by data, as well as documentation of enforcement consequences. We stated that we will reject vague references to geography or facilities, and required that exemptions be narrowly defined.

The limited exemptions contemplated in D.96-11-021 were to be proposed in comments on the proposed standards set forth in that decision. Since we did not receive detailed, specific comments proposing exemptions, we adopt none at this time. However, we will allow SDG&E or the other respondent utilities to file a further application, if they choose, to propose standards based more closely on local geographic and weather conditions in their territories, to the extent that such an application is consistent with the guidelines discussed in D.96-11-021.

We have previously addressed the suggestions of ORA and TURN that we hold the utilities to their existing inspection cycles where they are more frequent than the ones we adopt today. This inquiry is a rulemaking, not a reasonableness review. We adopt the inspection cycles in Appendix A after considering industry practice and after review of relevant documents and proposals. We have already stated that the standards we adopt today are maximum acceptable lengths for inspection cycles. In certain circumstances, it may be prudent to conduct more frequent inspections to assure high-quality service and safe operations. In those cases, the utilities are responsible to inspect facilities more frequently.

We address the concerns of ORA and TURN that we should adopt maintenance and repair standards by commenting that our decision to adopt performance standards, rather than prescriptive ones, for such activities, does not in any way relieve the utilities of their obligations to maintain their systems according to industry standards and in ways which would promote high-quality service and safe conditions. As we stated in D.96-11-021, we decline to develop prescriptive standards at this time because we believe performance standards will provide adequate incentives while allowing the utilities to determine the specific methods of maintaining their systems. We will consider prescriptive standards if and when evidence ultimately demonstrates their necessity.

### **III. Reporting and Recording Requirements**

#### **A Comments of the Parties**

Edison, PG&E, and Sierra propose the first annual report be submitted in July 1998 rather than July 1997 in order to provide adequate time for the utilities to demonstrate compliance with the new standards. SDG&E supports the annual reporting requirements proposed in D.96-11-021.

ORA recommends that the utilities be required to document all corrective action scheduled and undertaken as a result of their inspections. It also recommends that a proposed General Order on inspection cycles require the utilities to rate the condition of facilities according to results of each inspection. Along the same lines, CUE proposes that the General Order require the utility to maintain a record of problems observed by the inspector, the date of corrective action, and the identity of the person performing the work.

ORA comments that the Commission, perhaps inadvertently, proposed to require 30-day notice by Commission staff for reviewing utility records. ORA observes that PU Code Section 314 (a) provides that Commission staff may inspect utility records "at any time."

CUE proposes the General Order include specific definitions for "patrol," "detailed," and "intrusive," consistent with the discussion in D.96-11-021.

#### **B Discussion**

As the utilities suggest, we will require the first annual reports to be submitted in July, 1998. However, to assure that reports as well as source records are clear and comprehensive, we direct utilities to submit compliance plans as soon as possible, but before July 1, 1997. These compliance plans will include the proposed forms for annual reports and source records, as well as the utility's plans for the types of inspections and equipment to be inspected during the coming year. For detailed and intrusive inspections, schedules should be detailed enough (in terms of the month of the inspection and the circuit, area, or equipment to be inspected) to allow staff to confirm that scheduled inspections are proceeding as planned. Since patrol inspections may be carried out in the course of other utility business, schedules are not required in advance. However, utilities should explain how all required facilities will be covered during the year.

The utilities are directed to update this schedule annually. We authorize Energy Division to review these compliance plans and to prescribe changes relating to data, definitions, formats, and forms when and as necessary.

D.96-11-021 required that utilities maintain various kinds of information on inspections. We will also include in the General Order the requirement that the utilities maintain a record of problems observed by the inspector, the schedule and actual date of corrective action, and the identity of the person performing the work. This type of information will promote follow-up to inspections and serve as a foundation for determining the reasonableness of utility actions if and when specific problems occur on the system. Finally, for detailed and intrusive inspections, we adopt ORA's recommendation that utilities rate and record the condition of inspected facilities.

We incorporate in to the General Order the descriptions of the terms "patrol," "detailed," and "intrusive" presented in D.96-11-021, as proposed by CUE.

We agree that Commission staff should not be required to provide 30-day notice to inspect utility records and will modify our original proposal accordingly.

#### **IV. Review and Modification of Inspection Standards**

ORA recommends that the Commission specify the forum in which we will review and modify, where appropriate, inspection standards. The utilities propose that we include the new rules in existing General Order (G.O.) 95 and G.O. 128 and employ the decision-making process already in place for those General Orders when considering modifications to the rules we adopt today. That decision-making process involves negotiations between members of a committee and modifications by way of Commission resolution.

We decline to employ the existing procedures for changing G.O. 95 and G.O. 128, as the utilities suggest. The Committee process used for G.O. 95 and G.O. 128 is appropriate where rules must apply to all utilities. By contrast, any deviations from inspection standards ought to be tailored to the conditions facing each utility, based on that utility's climate, operating experience, equipment and maintenance data, and other factors, based on cost-effectiveness analysis. We believe a highly public and visible process is required here, considering the introduction of competition and the heightened interest of the public and California legislature in matters relating to distribution system performance. Any proposals to change adopted standards should be based on data and analysis available to all parties.

We intend that this rulemaking be the forum for all such action in the future, as ORA proposes. We will reconsider the standards we adopt here, and related findings regarding maintenance of electric utility distribution systems, on our own motion or the motion of a party if it appears that circumstances have changed or the standards we adopt are inadequate.

#### **V. Emergency Standards**

D.96-11-021 stated our intent to review proposals for standards for operation, reliability, and safety during emergencies and disasters, consistent with § 364 (b) enacted by AB 1890.



We can envision at least five different kinds of emergency standards. First, we could establish procedural and planning requirements for utilities, including, for example, the filing of a detailed emergency plan with specified elements, and participation in programs sponsored by the California Office of Emergency Services. Respondent utilities have already filed emergency plans with many of these elements. Second, we could specify the minimum acceptable levels of stand-by and repair personnel; for example, the number and composition of heavy construction crews. Third, we could establish expectations for emergency response; for example, that the utilities clear roads with their own crews, rather than waiting for other agencies to make these expenditures, where this will expedite the restoration of service, and not endanger service elsewhere. Fifth, and finally, we could avoid prescriptive standards, and simply establish a penalty (within or without the PBR mechanism) for each customer-day of outage, escalating in level with longer outages, and with some provision for adjustment during regional disasters beyond utility control.

We herein direct respondent utilities to file no later than August 1, 1997, proposed standards and comments on the practicality and desirability of other kinds of standards. Other parties are invited to submit reply comments no later than September 15, 1997.

## **VI. Applicability to Municipal and Publicly-owned Utilities**

We herein seek the comments of municipal and publicly-owned utilities regarding the extent to which the rules we adopt herein should apply to them. We direct them to file comments no later than August 1, 1997, and will address the matter in subsequent order.

### **Findings of Fact**

1. The inspection cycles set forth in Appendix A reflect industry practice and the comments of the active parties to this proceeding.
2. The General Order attached as Appendix A is promulgated to promote electric utility distribution system safety and high-quality electric service.

### **Conclusions of Law**

1. The Commission should adopt the General Order attached as Appendix A.
2. PU Code Section 314 (a) permits Commission staff to inspect utility records at any time.
3. Future modifications to the rules set forth in Appendix A should be accomplished in this rulemaking proceeding.
4. The findings, conclusions, and discussion in D.96-11-021 should be incorporated into this decision by reference to the extent applicable.

## Order

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IT IS ORDERED that:

1. The General Order attached to this decision as Appendix A is adopted.
2. The findings, conclusions, and discussion of Decision 96-11-021 are incorporated into this decision by reference to the extent applicable.
3. Respondent utilities shall file implementation plans for inspections no later than July 1, 1997. Further, no later than August 1, respondent utilities shall file proposed standards for operation, reliability, and safety during emergencies and disasters. Parties may file comments on those proposals no later than September 15, 1997.
4. The State's municipal and publicly-owned electric utilities, which are respondents to this rulemaking, shall file comments no later than August 1, 1997, regarding the extent to which they should be subject to the rules adopted herein. Parties may file responsive comments no later than September 15, 1997.

This order is effective today.

Dated March 31, 1997, at San Francisco, California.

P. Gregory Conlon  
President

Jessie J. Knight, Jr.  
Henry M. Duque  
Josiah L. Neeper  
Richard A. Bilas  
Commissioners

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## **Appendix**

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**Appendix A**  
**Public Utilities Commission of the State of California**  
**Inspection Cycles for Electric Distribution Facilities**

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Adopted March 31, 1997

Effective March 1, 1997

(D.97-03-070 in I.95-02-015 and R.96-11-004)

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**I. Purpose**

The purpose of this General Order is to establish minimum requirements for electric distribution facilities, regarding inspection (including maximum allowable inspection cycle lengths), condition rating, scheduling and performance of corrective action, record-keeping, and reporting, in order to ensure safe and high-quality electrical service, and to implement the provisions of Section 364 of Assembly Bill 1890, Chapter 854, Statutes of 1996.

**II. Applicability**

As of March 31, 1997, this General Order applies to Pacific Gas and Electric Company, PacificCorp, San Diego Gas and Electric Company, Sierra Pacific Power Company, and Southern California Edison Company.

The requirements of this order are in addition to the requirements imposed upon utilities under General Orders 95 and 128 to maintain a safe and reliable electric system. Nothing in this General Order relieves any utility from any requirements or obligations that it has under General Orders 95 and 128.

**III. Definitions**

For the purpose of this General Order,

A "Urban" shall be defined as those areas with a population of more than 1,000 persons per square mile as determined by the United States Bureau of the Census.

B "Rural" shall be defined as those areas with a population of less than 1,000 persons per square mile as determined by the United States Bureau of the Census.

C "Patrol" shall be defined as a simple visual inspection, of applicable utility equipment and structures, that is designed to identify obvious structural problems and hazards. Patrols may be carried out in the course of other company business.

D "Detailed" inspection shall be defined as one where individual pieces of equipment and structures are carefully examined, visually and through use of routine diagnostic test, as appropriate, and (if practical and if useful information can be so gathered) opened, and the condition of each rated and recorded.

E "Intrusive" inspection is defined as one involving movement of soil, taking samples for analysis, and/or using more sophisticated diagnostic tools beyond visual inspections or instrument reading.

F "Corrective Action" shall be defined as maintenance, repair, or replacement of utility equipment and structures so that they function properly and safely.

#### **IV. Standards for Inspection, Record-keeping, and Reporting**

Each utility subject to this General Order shall conduct inspections of its distribution facilities, as necessary, to assure reliable, high-quality, and safe operation, but in no case may the period between inspections (measured in years) exceed the time specified in the attached table.

Each utility subject to this General Order shall submit to the Commission by no later than July 1, 1997, compliance plans for the inspections and record-keeping required by this order. These compliance plans will include the proposed forms and formats for annual reports and source records, as well as the utility's plans for the types of inspections and equipment to be inspected during the coming year. For detailed and intrusive inspections, schedules should be detailed enough (in terms of the months of inspection and the circuit, area, or equipment to be inspected) to allow staff to confirm that schedule inspections are proceeding as planned. For patrol inspections, companies should explain how all required facilities will be covered during the year. Energy Division or any successor staff divisions may prescribe changes relating to data, definitions, reporting and record-keeping formats and forms when and as necessary.

Each utility subject to this General Order shall submit an annual report detailing its compliance with this General Order under penalty of perjury. The first report required under this section shall be filed with the Commission by no later than July 1, 1998. Each utility shall file subsequent annual reports for every following year by no later than July 1. The report shall identify the number of facilities, by type which have been inspected during the previous period. It shall identify those facilities which were scheduled for inspection but which were not inspected according to schedule and shall explain why the inspections were not conducted, and a date certain by which the required inspection will occur. The report shall also present the total and percentage breakdown of equipment rated at each condition rating level, including that equipment determined to be in need of corrective action. Where corrective action was scheduled during the reporting period, the report will present the total and percentage of equipment which was and was not corrected during the reporting period. For the latter, an explanation will be provided, including a date certain by which required corrective action will occur. The report will also present totals and the percentage of equipment in need of corrective action, but with a scheduled date beyond the reporting period, classified by the amount of time remaining before the scheduled action. All of the above information shall be presented for each type of facility identified in the attached table and shall be aggregated by district.

The company shall maintain records of inspection activities which shall be made available to parties or pursuant to Commission rules upon 30 days notice. Commission staff shall be permitted to inspect such records consistent with Public Utilities Code Section 314 (a).

For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action. For detailed and intrusive inspections, companies shall also rate the condition of inspected equipment. Upon completion of corrective action, company records will show the nature of the work, the date, and the identity of persons performing the work.

Dated March 31, 1997, at San Francisco, California.

/s/ Wesley M. Franklin

Wesley M. Franklin  
Executive Director

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Appendix A

**Electric Company System Inspection Cycles (Maximum Intervals in Years)**

	Patrol		Detailed		Intrusive	
	Urban	Rural	Urban	Rural	Urban	Rural
<b>Transformers</b>						
Overhead	1	2	5	5	—	—
Underground	1	2	3	3	—	—
Padmounted	1	2	5	5	—	—
<b>Switching/Protective Devices</b>						
Overhead	1	2	5	5	—	—
Underground	1	2	3	3	—	—
Padmounted	1	2	5	5	—	—
<b>Regulators/Capacitors</b>						
Overhead	1	2	5	5	—	—
Underground	1	2	3	3	—	—
Padmounted	1	2	5	5	—	—
<b>Overhead Conductors and Cables</b>	1	2	5	5	—	—
<b>Streetlighting</b>	1	2	x	x	—	—
<b>Wood Poles under 15 years</b>	1	2	x	x	x	x
<b>Wood Poles over 15 years which have not been subject to intrusive inspection</b>	1	2	x	x	10	10
<b>Wood Poles which passed intrusive inspection</b>	—	—	—	—	20	20