

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's Own
Motion into the Operations and Practices of
Southern California Edison Company,
Verizon Wireless LLC, Sprint
Communications Company, LP, NextG
Networks of California, and AT&T
Communications of California, Inc.,
Regarding the Utility Facilities and the
Canyon Fire in Malibu of October 2007.

FILED
PUBLIC UTILITIES COMMISSION
SAN FRANCISCO
JANUARY 29, 2009
I.09-01-018

ORDER INSTITUTING INVESTIGATION,
AND NOTICE OF HEARING

I. INTRODUCTION

By this order, the Commission institutes a formal investigation to determine whether the named Respondents violated any provision or provisions of the Public Utilities Code, Commission general orders or decisions, or other applicable rules or requirements in regards to their facilities which may have caused the fire in Malibu on October 21, 2007 (the October 21, 2007 fire in Malibu is alternately referred to as the "Malibu" or "Canyon" fire). Respondents are the Southern California Edison Company, Verizon Wireless (Verizon), Sprint Communications Company, LP (Sprint), NextG Networks of California (NextG), and AT&T Communications of California, Inc. (AT&T). Each and all Respondents are subject to the Commission's jurisdiction and to state law, and to the Commission's general orders, rules, and decisions. Among other things, these authorities set forth requirements pertaining to the construction, inspection, and maintenance of utility poles, including the wires and other utility equipment attached to the poles.

This order provides notice that the Commission will set a hearing to determine whether any or all Respondents have violated the Commission's general orders or other applicable authority pertaining to the breakage of the Malibu utility poles and the

ensuing fire. This order also directs each respondent to show cause as to why the Commission should not find violations in this matter, and why the Commission should not impose penalties, and/or any other forms of relief, if any violations are found. The order also directs respondents to respond to certain questions and provide specified information to the Commission and its Consumer Protection and Safety Division (CPSD).

II. BACKGROUND AND SUMMARY OF CPSD REPORT

On October 21, 2007, three wooden utility poles in Malibu, which CPSD asserts were jointly owned and maintained by Respondents, broke and fell to the ground at approximately 4:30 AM. The poles were shared among the Respondents, and supported live electrical wires, and communication utility equipment. When the utility poles broke, electrical contact with the nearby vegetation occurred and caused a fire that the Los Angeles (LA) County Fire Department described in its report, “spread rapidly due to steep terrain and high winds”.

The fire burned about 3,836 acres in the Malibu area, destroyed 14 structures and 36 vehicles, and damaged 19 other structures. The LA County Fire Department’s Report on this fire concludes that the fire started from an electrical contact with the vegetation near the three poles that fell on October 21, 2007. The LA County Fire Department Report also states that the wind at the time of incident was blowing at approximately 50 mph which contributed to the spread of the fire. CPSD reports that no person was injured by the fire or the firefighting that followed it.

On November 8, 2007, CPSD staff commenced an investigation to determine whether the Respondents, or any of them, violated any of the Commission’s general orders or other Commission and state regulations or standards, and whether any such violation caused or contributed to the fire that occurred. CPSD has provided its investigation report (dated October 21, 2008) to the Commission. Pursuant to Resolution No. L-370 the CPSD investigation report was released on December 18, 2008 (CPSD Report). The CPSD report is attached to this order.

CPSD concludes in its report that the loading on the three Malibu utility poles was in violation of Commission General Order (GO) 95, Rules for Electric Overhead Construction. CPSD's investigation also concludes that Respondents failed to inspect and maintain the poles within the standards specified in the GO 95. CPSD contends that Respondents violated GO 95 "including but not limited to Rules 12.2, 31.1, 31.2, 43.2, 44.1, and 44.2 for failing to safely and properly maintain, inspect, replace, and reinforce their poles and other facilities, and for failing to prevent their safety factors to fall below the minimum requirements specified in GO 95." We understand "Safety Factors" are the minimum allowable ratios of ultimate strengths of materials to the maximum working stresses. The safety factors in General Order 95 are requirements meant to ensure that utility poles will withstand loading of equipment and external forces, such as resultant stresses due to wind. CPSD alleges that one or more of the utility poles were not maintained in compliance with the wind loading requirements of General Order 95. CPSD believes that this caused the poles to break in winds in which they were required to withstand.

Further, CPSD concludes that the violations of GO 95 were the primary cause of the utility poles breaking and the ensuing fire, and that absent the violations the utility poles would have amply withstood the approximately 50 mph Santa Ana winds that occurred in the vicinity of the incident on October 21, 2007.

CPSD also contends that some of the Respondents have presented a confused and incomplete response to its inquiries as to their joint and individual responsibilities to ensure compliance with the Commission's general orders. Apparently Sprint and NextG did not maintain records of any pole loading assessments performed when additional equipment was installed on the utility poles. Therefore, it is unclear whether Sprint and NextG made appropriate assessments to ascertain GO 95 compliance. Because no records were made available on pole loading assessments conducted by Sprint or NextG, CPSD is unable at this time to assess which communication company may have first overloaded the facilities, or how or whether the other Respondents reacted to the alleged overloading or otherwise sought to ensure their compliance with GO 95.

The Commission has reached no conclusion or made no finding that Respondents, or any of them, have violated any general orders or other requirements or standards. However, CPSD's report has presented us with sufficient evidence and good cause to commence a formal investigation to ascertain whether such violations have occurred, and if so, the proper remedy for such violations. We are also concerned by the apparent lack of construction and maintenance coordination among the Respondents that CPSD alleges occurred for utility owned and maintained poles and appurtenant equipment, and which by law each and all Respondents are responsible to construct and maintain in compliance with Commission GO 95. We expect to have a better understanding after this investigation ends as to how each Respondent views its individual and joint responsibility to comply with GO 95 with respect to shared utility facilities such as joint utility poles.

III. PRELIMINARY SCOPING MEMO

A. Discussion, Need For Hearings, Scope And Order To Show Cause

As we have stated in recent investigation orders reviewing utility-related fires in the San Diego area, it is essential to protect Californians from future utility-related fire hazards. For that reason, the Commission expects to hold hearings and accept evidence about the matters and violations alleged in the CPSD Report. If those violations are proven in this proceeding, the Commission expects to consider and take remedial action.

To address these matters, the Commission intends to direct Respondents to reply to specific questions and to hold public hearings on this matter. The Commission also invites interested parties to actively participate in this proceeding as it involves important safety and other policy matters that will benefit from the expertise, participation, and evidence of other parties.

This proceeding shall seek to:

- (1) Determine whether any of the named Respondents violated any provisions of the Public Utilities Code, general orders, other rules, or requirements, regarding their facilities linked to the Malibu fire;
- (2) Determine the remedy or remedies for any proven violation;

The reports of CPSD and the LA Fire Department provide us with a prima facie showing that violations have occurred and that the Malibu fire stems from the violations. Respondents should produce evidence to the contrary in support of their positions and conclusions. In view of the specific information in CPSD's report we will expect that if the Respondents disagree with CPSD that they present evidence ample to support their specific positions and conclusions.

Each Respondent is directed to appear and provide evidence to establish that it has not committed the violations alleged in CPSD's report, and that the October 21, 2007 fire did not occur as a result of any violation. Further, the Commission directs each Respondent to file a written report with the Commission, served on all parties, by March 2, 2009, which fully responds to the following request for information for the period from January 1, 1990 through October 20, 2007:

- A. Provide the dates of each inspection conducted on any of the three poles and the equipment attached directly to the poles and provide all written reports of those inspections. If no contemporary written reports exist, provide a written description of the inspections conducted and findings, and the basis on which (e.g. name of witness) the inspections are presently evaluated.
- B. Provide the dates and descriptions of maintenance conducted and additional equipment installed, and modifications to any one of the three poles or to the equipment supported by the poles.
- C. Provide all calculations, studies, and analyses done during the period from January 1, 1990 to October 20, 2007, to ensure that the three poles and their loads were properly configured and, maintained in compliance with the Commission GO 95 and with otherwise good practice.
- D. Provide a summary of Respondent's actions taken to demonstrate that the three poles and their loads met the minimum safety factors required by GO 95, and otherwise met the specific requirements of Rules 12.2, 31.1, 31.2, 43.2, 44.1, and 44.2 of GO 95.

- E. Provide a summary of Respondent's contentions and evidence in support for such contention, in agreement or disagreement with CPSD that Respondent violated GO 95 as to the specific provisions and requirements listed in "D" above.
- F. Provide a summary of Respondent's contentions and evidence in support for such contention, as to whether the Malibu fire was caused by the poles' breakage. If a violation of the GO 95 is admitted, state whether the fire would have been avoided absent the violation, and provide support for this position.
- G. Describe why all of Respondent's actions and practices, related to the matters alleged in CPSD's report, were lawful, reasonable and prudent.
- H. Provide all documents that support or relate to the responses and information provided in the report.
- I. Provide the names (and titles if employee or agent) of all witnesses to the responses and information in the report. Provide the name of each such witness with respect to specified portions of the report.
- J. Provide a stipulation of agreement to any and all portions of the CPSD report that Respondent does not dispute.

B. Schedule

As stated above, the Commission notifies Respondents that the Commission will set hearings to review the issues raised by this matter. The Commission intends to set a prehearing conference to consider and adopt a hearing schedule and schedule other matters for this proceeding.

C. Categorization

This proceeding is categorized as adjudicatory. *Ex parte* communications are prohibited. The determination as to category is appealable under Rule 7.6 of the Commission's Rules of Practice and Procedure.

Therefore, **IT IS ORDERED** that:

1. An investigation is instituted on the Commission's own motion to determine whether Respondents violated any provision of the Public Utilities Code, general orders, other rules, or requirements by overloading three Malibu utility poles and thus by not complying with the loading and other requirements set forth in General Order 95, and by otherwise failing to utilize safe practices required by General Order 95 or other applicable law.

2. Southern California Edison Company, Verizon Wireless LLC, Sprint Communications Company L.P., NextG Networks of California and AT&T Communications of California, Inc., are Respondents to this investigation.

3. Each Respondent is directed to show at hearings why the Commission should not find it in violation of provisions of the Public Utilities Code, general orders, other rules, or requirements identified in this Order, and/or engaging in unreasonable and/or imprudent practices related to these matters, and why the Commission should not impose a penalty. If any violation is found each Respondent found responsible for the violation is directed to show why penalties and/or any other form of relief should not be applied. Respondents, and each of them, are also directed to file a report on March 2, 2009 providing the information required and specified in this order.

4. Respondents are put on notice that fines may be imposed in this matter pursuant to Public Utilities Code §§ 2107, 2108.

5. Respondents are put on notice that the Commission may order the implementation of operational and policy measures designed to prevent future hazards pursuant to Public Utilities Code § 761.

6. Pursuant to Rule 7.1(c) of the Commission's Rules of Practice and Procedure, this proceeding is categorized as adjudicatory, deemed to require hearings, and this Order includes a preliminary scoping memo. This Order, only as to category, is appealable under Rule 7.6.

7. A prehearing conference shall be convened before an Administrative Law Judge (ALJ) for the purpose of establishing a schedule in this matter, including the date, time, and location of an evidentiary hearing, and for good cause shown the ALJ and/or

Assigned Commissioner may extend the deadline of March 2, 2009 for any particular responses required.

8. The attached Report prepared by the Commission's Consumer Protection and Safety Division, supported by Declaration, is hereby entered into the record for this proceeding.

9. The Executive Director shall cause a copy of this Order to be served by certified mail on each Respondent at:

Thomas Braun, Senior Attorney
Southern California Edison Company
2244 Walnut Grove, Suite 354
Rosemead, CA 91770

Anthony Rodriquez,
Regulatory & Contract Specialist
NextG Networks of California
2216 O'Toole Avenue
San Jose, CA 95131

William Kuchler, Senior Analyst
Verizon Wireless, LLC
180 Washington Valley Road
Beidminster, NJ 07921

Greta Banks, Mananger
AT&T Communications of California, Inc.
525 Market Street, 19th Floor
San Francisco, CA 94105

Stephen Kukta,
Director State Regulatory
Sprint Communications Company, LP
201 Mission Street, #1400
San Francisco, CA 94105

This order is effective today.

Dated January 29, 2009 at San Francisco, California.

MICHAEL R. PEEVEY
President
DIAN M. GRUENEICH
JOHN A. BOHN
RACHELLE B. CHONG
TIMOTHY A. SIMON
Commissioners

APPENDIX

to Order Instituting Investigation

(Includes G.O. provisions which CPSD contends Respondents may have violated or which may be relevant to violations – this Appendix is not inclusive of all violations or relevance to violations)

12.2 Maintenance of Lines

All lines and portions of lines shall be maintained in such condition as to provide safety factors not less than those specified in Rule 44.2. Lines and portions of lines constructed or reconstructed on or after the effective date of this Order shall be kept in conformity with the requirements of this Order.

The restoration of clearance originally established prior to the effective date of this Order, where the original clearance has been reduced by additional sagging or other causes, is not considered to be reconstruction and the reestablished clearance shall conform to the requirements of the rules in effect at the time the original clearance was established. The changing of clearance for any other purpose is reconstruction and clearances so changed shall comply with the rules of this Order applicable to reconstruction.

21.8 Joint Use of Poles or Poles Jointly Used means occupancy of poles or structures by circuits of different ownership or by two or more of the following classes of circuits of the same ownership:

- Communications circuits for public use
- Railway or trolley circuits
- Supply circuits other than trolley circuits

31 Application

The following rules apply to all classes of overhead lines under all conditions.

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.

All work performed on public streets and highways shall be done in such a manner that the operations of other utilities and the convenience of the public will be interfered with as little as possible and no conditions unusually dangerous to workmen, pedestrians or others shall be established at any time.

Note: Revised January 13, 2005 by Decision No. 0501030.

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. Lines temporarily out of service shall be inspected and maintained in such condition as not to create a hazard.

43.2 Light Loading

Light loading shall apply in all parts of the State of California where the elevation above sea level is 3000 feet or less (see Appendix A for map). This loading shall be taken as the resultant of wind pressure and deadweight under the following conditions:

A. Wind

A horizontal wind pressure of 8 pounds per square foot of projected area on cylindrical surfaces, and 13 pounds per square foot on flat surfaces shall be assumed. Where latticed structures are used, the actual exposed area of one lateral face shall be increased by 50% to allow for pressure on the opposite face, provided this computation does not indicate a greater pressure than would occur on a solid structure of the same outside dimensions, under which conditions the latter shall be taken.

B. Ice

No ice loading is to be considered.

C. Temperature

Temperature shall be considered to be 25° F at the time of maximum loading. The normal temperature for computing erection conditions is 60°F. Maximum temperature shall be assumed as 130° F in computing sag under this condition.

44.1 Installation and Reconstruction

Lines and elements of lines upon installation or reconstruction, shall provide as a minimum the safety factors specified in Table 4 for vertical loads and loads transverse to lines and for loads longitudinal to lines except where longitudinal loads are balanced or where there are changes in grade of construction (see Rules 47.3, 47.4 and 47.5). The design shall consider the structural loading requirements of all supply and communication facilities planned to occupy the structure. For purposes of this rule, the term "planned" applies to the facilities intended to occupy the structure that are actually known to the constructing utility at the time of design.

(Table 4 and footnotes to Table 4 are omitted here)

44.2 Replacement

Lines or parts thereof shall be replaced or reinforced before safety factors have been reduced (due to deterioration) in Grades "A" and "B" construction to less than two-thirds of the construction safety factors specified in Rule 44.1 and in Grades "C" and "F" construction to less than one-half of the construction safety factors specified in Rule 44.1. Poles in Grade "F" construction shall also conform to the requirements of Rule 81.3-A.

In no case shall the application of this be held to permit the use of structures or any member of any structure with a safety factor less than one.

48 Ultimate Strength of Materials

Structural members and their connection shall be designed and constructed so that the structures and parts thereof will not fail or be seriously distorted at any load less than their maximum working loads (developed under the current construction arrangements with loadings as specified in Rule 43) multiplied by the safety factor specified in Rule 44.

Values used for the ultimate strength of material shall comply with the safety factors specified in Rule 44.

48.1 Wood

Values used for moduli of rupture for wood in bending, in conjunction with the safety factors given in Rule 44, shall not exceed those shown in Table 5.

Table 5: Wood Strengths

Species	Modulus of Rupture in Bending (a)	
	Sawed Rectangular Poles, Crossarms, Etc. (b)	Round Poles
Cedar, western red	4,700 lbs per square inch	6,000 lbs per square inch
Douglas fir, dense	6,300 lbs per square inch	6,800 (c) lbs per square inch
Douglas fir, not dense	5,800 lbs per square inch	6,800 (c) lbs per square inch
Fir, white or red, local	4,700 lbs per square inch	5,600 lbs per square inch
Pine, southern yellow, dense	6,300 lbs per square inch	6,800 (c) lbs per square inch
Pine, southern yellow, not dense	5,800 lbs per square inch	6,800 (c) lbs per square inch
Redwood, virgin	5,300 lbs per square inch	6,200 lbs per square inch
Redwood, second growth	3,900 lbs per square inch	4,600 lbs per square inch

(Footnotes for Table 5 are omitted here)

49.1 Poles, Towers and Other Structures**A. Strength**

- (1) Wood poles shall be of sound timber and shall meet the following:
 - (a) Temperature and loading factors as specified in Rule 43.
 - (b) Safety factors not less than those specified in Rule 44, and the modulus of rupture used in calculation of safety factors per Rule 48.1.

91.2 Strength

Poles used to support circuits of different classification shall have a strength determined by using the total loading due to all circuits supported by the pole computed according to Section IV. The grade for construction for such poles shall be the highest required for any circuit present or condition existing.

ATTACHMENT

CALIFORNIA PUBLIC UTILITIES COMMISSION
Consumer Protection and Safety Division
Utilities Safety and Reliability Branch

Incident Investigation Report

Report Date: 10/21/2008

Investigator: Kan Wai Tong, CPSD investigator and Utilities Engineer

Incident Number: E 20071021-01

Utility: Southern California Edison (SCE), Verizon Wireless, Sprint Nextel, and NextG Networks

Date and Time of the Incident: 10/21/2007, 0450 hours

Location of the Incident: Malibu Canyon Road 2.8 miles north of Pacific Coast Highway
Malibu, CA

Summary of Incident:

On October 21, 2007, at approximately 0450 hours, three wooden poles owned and maintained by public utilities, and bearing live electrical wires and other utility facilities, broke and came to the ground resulting in a vegetation fire. The Los Angeles County fire department report prepared after the fire states that "the fire spread rapidly due to steep terrain and high winds, destroying fourteen (14) structures, damaging approximately nineteen (19) other structures, thirty-six (36) vehicles and burned approximately 3,836 acres."

The poles supported overhead facilities that belong to the Southern California Edison Company (SCE), Verizon Wireless, Sprint Nextel, and NextG Networks. CPSD's investigation found that the vegetation fire started after the overhead facilities installed on the poles fell to the ground. SCE, Verizon Wireless, Sprint Nextel and NextG Networks violated General Order (GO) 95, including but not limited to Rules 12.2, 31.1, 31.2, 43.2, 44.1, and 44.2 for failing to safely and properly maintain, inspect, replace, and reinforce their poles and other facilities, and for failing to prevent their safety factors to fall below the minimum requirements specified in the Commission's general orders.

Fatality / Injury: CPSD is aware of no injuries or fatalities.

Estimated Property Damage:

\$14,528,300

Utility Facilities Involved: Crater-Reclaim/Tapa, 66 kV Circuit**Witnesses:**

<i>Name</i>	<i>Title</i>	<i>Phone</i>
1 Frederick McCollum	SCE - Senior Investigator	(626) 302-6867
2 Patrick Spence	SCE - Manager	(626) 302-6980
3 Cliff Houser	LA County Fire Investigator	(626) 433-1011
4 Robert Ramos	SCE - Manager	(626) 302-3136
5 Sandy Clark	LA County Fire Department – Custodian of Records	(626) 433-1011
6 Ross Johnson	AT&T Regulatory	(415) 778-1430
7 Jim Brown	Cable Engineering Service	(818) 898-2352
8 Kristin Jacobson	Sprint Nextel – Attorney	(415) 278-5314
9 Malcolm Brown	Verizon Wireless – Sr. Engineer	(949) 286-8772

Evidence:

<i>Source</i>	<i>Description</i>
1 Fredrick McCollum	Letter dated December 20, 2007 (in response to my November 8, 2007 data request)
2 Kan Wai Tong	Photos taken at the scene and SCE's warehouse
3 Patrick Spence	SCE's initial report
4 Fredrick McCollum	SCE's final report
5 Fredrick McCollum	Letter dated January 16, 2008 (in response to my January 25, 2008 data request)
6 Fredrick McCollum	Letter dated February 4, 2008 (in response to my January 25, 2008 data request)
7 Fredrick McCollum	Letter dated April 1, 2008 (in response to my March 18, 2008 data request)
8 Fredrick McCollum	Letter dated July 17, 2008 (in response to my July 17, 2008 data request)

9 Fredrick McCollum	Letter dated August 11, 2008 (in response to my August 1 data request)
10 Sandy Clark	Accidental Brush Report 07-260
11 Ross Johnson	Email dated September 10, 2008 (in response to my August 21, 2008 data request)
12 Jim Brown	Email dated October 8, 2008 (in response to my August 19, 2008 data request)
13 Kristin Jacobson	Email dated October 2, 2008 (in response to my August 19, 2008 data request)
14 Sharon James	Email dated October 17, 2008 (in response to my August 19, 2008 data request)

Investigator Observations and Findings:

On October 21, 2007, at approximately 0450 hours, SCE reported to the Utilities Safety and Reliability Branch (USRB) that three wooden poles (SCE states in writing that poles are jointly owned by SCE, Verizon Wireless, Sprint Nextel and NextG Networks) broke and came to the ground in high wind, and that the electrified components that fell resulted in a 3,836-acre vegetation fire and damage or destruction to 33 structures, primarily homes. The fire department report stated "The fire spread rapidly due to steep terrain and high winds, destroying fourteen (14) structures, damaging approximately nineteen (19) other structures, thirty-six (36) vehicles and burned approximately 3,836 acres."

On November 8, 2007, (the access road to the origin of the fire was closed for some time after the fire occurred) at approximately 0900 hours, I met Robert Ramos of SCE and I visually examined and took photos of the damaged facilities at SCE's Westminster base. I found that three wooden poles, 1169252E (50-ft height), 1169253E (50-ft height) and 2279212E (35-ft height), had been collected by SCE crew from the scene. By then SCE had cut the poles cut into sections apparently to facilitate removal from the area.

The poles showed fire damage at the soil-air interfaces. A 2,600-pound concrete block was found by the SCE repair crew in the middle of the road after the incident. According to SCE, the block was an anchor support for guys wires installed on pole 2279212E to provide lateral tension of the circuits involved. At approximately 1230 hours, Mr. Ramos and I conducted a site investigation. I found that two SCE circuits, 16-kV and 66-kV, had been supported by the three failed poles along Malibu Canyon Road. I noted that the failed poles had been replaced with new poles after the fire. The three new poles were set adjacent to each other (in a row) along Malibu Canyon Road.

In a letter dated December 20, 2007, Fredrick McCollum, SCE Senior Investigator, stated that SCE had designed the failed poles to withstand 8 pounds per square foot wind pressure, as required by GO 95, Rule 43.2. The same letter states that the last detailed inspection by SCE was conducted on September 25, 2006 and that SCE last patrolled the circuits on February 12, 2007.¹

No unusual conditions were noted either in the detailed inspection or patrol records. SCE's circuit logs showed that the circuits involved relayed (interrupted the service) at the time of the incident.

Mr. McCollum's letter dated April 1, 2008, indicated that SCE last intrusively tested poles 1169252E and 1169253E on May 23, 2007 and pole 2279212E on March 19, 2007.² No unusual conditions were noted in SCE's records.

Mr. McCollum's letter dated July 17, 2008, states that the failed poles were jointly owned by SCE, AT&T, Verizon Wireless, Sprint Nextel and NextG Networks, Inc. Mr. McCollum also asserts that "*each party shall comply with all applicable federal, state, and local laws, rules and regulations, any revisions or supplements thereto...*". Because the poles were jointly owned by SCE, AT&T, Verizon Wireless, Sprint Nextel, and NextG Networks, Inc., and because the applicable general orders apply explicitly to "all electrical supply and communication lines which come within the jurisdiction of this Commission", each and all of the utilities identified above were responsible for compliance with the Commission's general orders. SCE (McCollum) contends in its letter that SCE was not required to approve the additional load added by other parties. The meaning of SCE's contention is unclear given the joint responsibility that was borne by each and all these utilities to comply with the Commission's general orders.

From August 14 to October 20, 2008, I made several attempts to obtain copies of the wind loading calculations from the communication companies of the communications facilities that had been installed on the failed poles. On September 10, 2008, Ross Johnson stated that AT&T did not have any facilities installed on the poles. On October 8, 2008, Jim Brown sent me the wind loading calculations for Verizon Wireless.

¹ Definition of Patrol in General Order 165 is: "Patrol" shall be defined as a simple visual inspection, of applicable utility equipment and structures that are designed to identify obvious structural problems and hazards. Patrols may be carried out in the course of other company business.

² Definition of Intrusive inspection in General Order 165 is: "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 readings.

On October 10, 2008, I received the written Accident Brush Report 07-260 from Sandy Clark of the Los Angeles (LA) County Fire Department (attached). The report indicates that due to the severe Santa Ana winds at the time of the incident, the poles broke and caused the overhead energized conductors to contact each other resulting in arcing and a vegetation fire below the conductors.

The LA County Fire Department found no physical impact damage to the base of the pole or any tire tracks in the dirt surrounding the imbedded portion of the pole, or other reasons to suspect vandalism or arson. LA County fire investigator's (Cliff Houser) report concludes : "Based on findings, evidence observed and statements made during this investigation, it is my opinion, this fire was accidental in nature, caused when two (2) Edison power poles, including a support pole, snapped and fell over, allowing excess slack in the electrical lines. This slack diminished the normal clearance of the wires allowing energized electrical lines to touch one another, causing arcing sparks to fall into the combustible brush below the wires. A severe Santa Ana wind condition at the time was a major factor in the spread of this fire."

LA County Fire Department did not record the wind speed at the time of the incident. However, Cliff Houser indicated to me that the firefighters who responded to the incident told him that based on their experience, the wind speed was approximately 50 miles per hour at the location and time of the incident.

On October 17, 2008, Sharon James (NextG) indicated to me in her email response that NextG Networks facilities on the poles were installed at the end of 2004, and neither NextG Network nor its contractor could locate the wind loading calculation for the facilities. It is thus not currently possible to ascertain which company installed the facilities that first overloaded the facility and first caused non-compliance with the General Order.

On October 20, 2008, Kristin Jacobson stated to me by telephone that Sprint facilities were installed on the poles in 1997, and that Sprint could not find any wind loading calculation for its facilities. Ms. Jacobson could not confirm whether such calculation had been performed prior to installation of its facilities. Without further information from Sprint, or NextG, it may not be possible to determine whether the poles were already overloaded by Sprint in 1997 or by NextG in 2004.

Ms. Jacobson also stated to me that Sprint does not believe that GO 95 or any other rule or decision requires utilities to retain such calculations. However, Ms. Jacobson stated that she believes that the wind effect was considered in order to pass the structural analysis required by the Joint Pole Association.³ The purpose of the Joint Pole

³ Source: <http://scjpc.net/>

Committee is to keep accurate records of ownership for each pole and keep on file a master record of each jointly-owned pole. The principal function is to calculate the established value of each transaction, involving the sale or purchase of joint pole equity interests or maintenance of those interests. The Joint Pole Committee office prepares monthly Bills of Sale to the members to enable them to make monetary settlement of their joint enterprises.

Table 4 of Rule 44.1, requires wooden poles in grade A construction to have a construction “safety factor” of 4 at the time of construction. Rule 44 explains that “the safety factors specified in these rules are the minimum allowable ratios of ultimate strengths of materials to the maximum working stresses...” In other words the safety factors describe the expected maximum stress under specific working conditions (weight, wind speed), as compared to the strength of the materials under stress.

GO 95, Rule 44.2, states that lines or parts thereof shall be replaced or reinforced before safety factors have been reduced (due to deterioration) in Grades "A" and "B" construction to less than two-thirds of the construction safety factors specified in Rule 44.1.

GO 95, Rule 43.2, requires poles to be designed to withstand the wind pressure of 8 pounds per square foot of projected area. This factor of safety also known as Safety Factor (SF), is used to provide a design margin over the theoretical design capacity to allow for uncertainty in the design process. The uncertainty could be any one of a number of the components of the design process including calculations, material strengths, duty, and manufacture quality. The value of the safety factor is related to the lack of confidence in the design process. The simplest interpretation of the Factor of Safety for a pole is

$SF = \text{Strength of pole} / \text{Load on pole}$

If a pole needs to withstand a wind load of 8 pounds per square foot of a projected area and a SF of 8/3 (2/3 times 4) is selected then it is designed with strength to withstand minimum wind speed of 92.4-mph.

The poles that broke and came down to the ground should have been designed, loaded, and maintained to withstand a minimum wind speed of 92.4-mph (See Appendix A for a step by step calculation).

According to information provided by National Oceanic and Atmospheric Administration (NOAA) Cooperative Institute, the closest weather station (CEEC1 - Cheeseboro), located at 9-miles north of the fire, recorded that the wind was gusting at approximately 49-mph at the time of the incident.

Preliminary Statement of Pertinent General Order, Public Utilities Code Requirements, and/or Federal Requirements:

<i>General Order</i>	<i>GO Rule</i>
1. GO 95	Rule 12.2
2. GO 95	Rule 31.1
3. GO 95	Rule 31.2
4. GO95	Rule 43.2
5. GO95	Rule 44.1
6. GO95	Rule 44.2

Conclusion:

Based on all the evidence made available to me, it is my opinion that the poles did not meet the requirements of GO 95, Rules 43.2 and 44.2, for ensuring that the failed poles maintained a safety factor of no less than two-thirds of the construction safety factor of 4. If the poles had been maintained, inspected, and constructed in compliance with the applicable Commission general orders, the poles clearly would have withstood the winds that they were subjected to on October 21, 2007. Therefore, SCE, Verizon Wireless, Sprint, and NextG Networks are in violation of GO 95, Rules 12.2, 31.1, 31.2, 43.2, 44.1, and 44.2 for failing to properly maintain and inspect their poles and for failing to prevent their safety factor to fall below the minimum Commission requirements.

Further, violations of the general order were the direct cause of the October 21, 2007 fire.

Appendix A

Based on wind pressure of 8 pounds per square foot of projected area and safety factor of 8/3 (2/3 x 4), the following is a calculation of the minimum wind speed that the poles should withstand:

Eq. 1: $SF_{\min} = P1 / P2$

Parameters:

V_{\min} = Minimum Design Wind Speed Requirement for the poles (mph)

SF_{\min} = Minimum Safety Factor for the poles = $4 * 2/3$ (GO 95, Rules 44.1 & 44.2)

$P1$ = Ultimate Strength of the poles (psf) = $0.0025 V_{\min}^2$ (eq. 14-66, Standard Handbook for Electrical Engineers, 11th Ed)

$P2$ = Maximum Assumed Wind Pressure (psf) = 8 psf (GO 95, Rule 43.2)

Re-arranging the Eq.1:

$$V_{\min} = (SF_{\min} * P2 / 0.0025)^{0.5}$$

Substituting the parameters into the equation:

Answer: $V_{\min} = 92.4\text{-mph}$

The formulas above are used and defined in the engineers' reference book. The parameters were extracted from GO 95, Rules 43.2, 44.1 and 44.2, and are based on standard engineering references, concepts, and calculations.

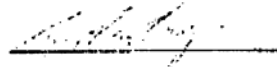
NOTE

County of Los Angeles Fire Dept. report is not attached at this time. It has not yet been publicly released with the permission of the L.A. Fire Dept. It will be distributed separately to the Commissioners and their staff.

DECLARATION OF KAN WAI TONG

I, Kan Wai Tong, Utilities Engineer of the Utilities Safety and Reliability Branch of the Consumer Protection and Safety Division, declare that the information contained in the 10/21/08 "Incident Investigation report" is true and correct to the best of my knowledge and belief.

Executed under the penalty of perjury on January 20, 2009 at Los Angeles, California.



Kan Wai Tong