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**Ratesetting**

TO PARTIES OF RECORD IN APPLICATION 08-12-021

This is the proposed decision of Administrative Law Judge (ALJ) Kenney. It will not appear on the Commission's agenda sooner than 30 days from the date it is mailed. The Commission may act then, or it may postpone action until later.

When the Commission acts on the proposed decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the proposed decision as provided in Article 14 of the Commission's Rules of Practice and Procedure (Rules), accessible on the Commission's website at [www.cpuc.ca.gov](http://www.cpuc.ca.gov). Pursuant to Rule 14.3, opening comments shall not exceed 15 pages.

Comments must be filed pursuant to Rule 1.13 either electronically or in hard copy. Comments should be served on parties to this proceeding in accordance with Rules 1.9 and 1.10. Electronic and hard copies of comments should be sent to ALJ Kenney at [tim@cpuc.ca.gov](mailto:tim@cpuc.ca.gov) and the assigned Commissioner. The current service list for this proceeding is available on the Commission's website at [www.cpuc.ca.gov](http://www.cpuc.ca.gov).

/s/ KAREN V. CLOPTONKaren V. Clopton, Chief  
Administrative Law Judge

KVC:avs

Attachment

Decision PROPOSED DECISION OF ALJ KENNEY (Mailed 3/20/2012)

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

Application of San Diego Gas & Electric  
Company for Review of its Proactive  
De-Energization Measures and Approval  
of Proposed Tariff Revisions (U902E).

Application 08-12-021  
(Filed December 22, 2008)

**DECISION GRANTING PETITION TO MODIFY DECISION 09-09-030  
AND ADOPTING FIRE SAFETY REQUIREMENTS  
FOR SAN DIEGO GAS & ELECTRIC COMPANY**

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**DECISION GRANTING PETITION TO MODIFY DECISION 09-09-030  
AND ADOPTING FIRE SAFETY REQUIREMENTS FOR  
SAN DIEGO GAS & ELECTRIC COMPANY**

**1. Summary of Decision**

Today's decision grants Disability Rights Advocates' petition to modify Decision (D.) 09-09-030 to require San Diego Gas & Electric Company (SDG&E) to provide notice and mitigation, to the extent feasible and appropriate, whenever SDG&E shuts off power for public-safety reasons.

Today's decision also provides the following guidance regarding the Commission's determination in D.09-09-030 that SDG&E has authority under California Public Utilities Code § 451 and § 399.2(a) to shut off power in order to protect public safety when strong Santa Ana winds exceed the design basis for SDG&E's system and threaten to topple power lines onto tinder dry vegetation. First, today's decision provides more details regarding the specific Santa Ana wind conditions that may trigger a power shut-off event. Second, today's decision lists the factors the Commission may consider in determining if a decision by SDG&E to shut off power was reasonable and qualifies for an exemption from liability under SDG&E's Electric Tariff Rule 14.

**2. Background**

Santa Ana winds are strong, dry winds that occur periodically in Southern California. In October 2007, Santa Ana winds swept across Southern California and caused dozens of wildfires. The conflagration burned 780 square miles, killed 17 people, and destroyed thousands of homes and buildings. Hundreds of thousands of people were evacuated at the height of the fires. Transportation was disrupted over a large area for several days, including many road closures. Portions of the electric power network, public communication systems, and

community water sources were destroyed. Several of the worst wildfires were reportedly ignited by power lines. These included the Grass Valley Fire (1,247 acres); the Malibu Canyon Fire (4,521 acres); the Rice Fire (9,472 acres); the Sedgewick Fire (710 acres); and the Guejito and Witch Fires (197,990 acres). The total area burned by these five power-line fires was more than 334 square miles.<sup>1</sup>

In response to the widespread devastation, San Diego Gas & Electric Company (SDG&E) filed Application (A.) 08-12-021 for authority to shut off electric power as a fire-prevention measure when Santa Ana winds reach a sustained speed of 35 miles per hour (mph) or wind gusts reach 55 mph accompanied by sustained winds of 30 mph. The Commission denied SDG&E's application in Decision (D.) 09-09-030, finding that SDG&E had not demonstrated that the fire-prevention benefits from its plan to shut off power outweighed the significant costs, burdens, and risks imposed on customers and communities in areas where power is shut off.

Importantly, D.09-09-030 distinguished between its denial of SDG&E's application and SDG&E's statutory authority under Pub. Util. Code § 451 and § 399.2(a)<sup>2</sup> to shut off power in emergency situations:

Our denial of SDG&E's application does not affect SDG&E's authority under § 451 and § 399.2(a) to shut off power in emergency situations when necessary to protect public safety... SDG&E's statutory obligation [under § 451 and § 399.2(a)] to operate its system safely requires SDG&E to shut

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<sup>1</sup> Decision 12-01-032 at 5 - 6. The Rice, Guejito, and Witch Fires were in SDG&E's service territory. The Guejito and Witch Fires merged to become one fire

<sup>2</sup> All statutory references are denoted by the symbol "§" and refer to the California Public Utilities Code unless otherwise noted.

off its system if doing so is necessary to protect public safety. For example, there is no dispute that SDG&E may need to shut off power in order to protect public safety if Santa Ana winds exceed the design limits for SDG&E's system and threaten to topple power lines onto tinder dry brush. (D.09-09-030 at 61 - 62.)

The Commission concluded in D.09-09-030 that if SDG&E were to exercise its statutory authority to shut off power, the Commission could review SDG&E's decision after the fact for reasonableness.<sup>3</sup>

Although D.09-09-030 denied SDG&E's power shut-off plan, the decision encouraged SDG&E to develop and submit an improved shut-off plan. To this end, D.09-09-030 directed SDG&E to make a good-faith effort to develop a comprehensive fire-prevention program in collaboration with all stakeholders. The fire-prevention program had be based on a cost-benefit analysis that demonstrates (1) the program will result in a net reduction in wildfire ignitions, and (2) the benefits of the program outweigh any costs, burdens, or risks the program imposes on customers and communities. At the conclusion of the collaborative process, SDG&E was authorized to file an application for approval of the jointly developed fire-prevention program. If the collaborative process did not result in a consensus proposal, SDG&E was authorized to file an application containing its own proposed fire-prevention program.<sup>4</sup>

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<sup>3</sup> D.09-09-030 at 62.

<sup>4</sup> D.09-09-030, Ordering Paragraphs 1 - 3.

As required by D.09-09-030, SDG&E initiated a collaborative process to develop a comprehensive fire-prevention program. One of participants was Disability Rights Advocates (DisabRA).<sup>5</sup>

On September 7, 2010, DisabRA filed a petition to modify D.09-09-030 pursuant to Rule 16.4 of the Commission's Rules of Practice and Procedure. The petition states that SDG&E informed the parties during the collaborative process that SDG&E intends to shut off power when strong winds exceeds the design basis for its utility poles and other factors (e.g., a declared Red Flag Warning) concurrently dictate such action. DisabRA's petition seeks to modify D.09-09-030 to require SDG&E to take appropriate and feasible steps to warn and protect its customers whenever it shuts off power pursuant to its statutory authority.

Responses to DisabRA's petition were filed by SDG&E, the County of San Diego, the Mussey Grade Road Alliance (MGRA), Southern California Edison Company (SCE), and jointly by the Commission's Consumer Protection and Safety Division (CPSD) and Division of Ratepayer Advocates (DRA). DisabRA filed a reply on October 18, 2010.

A key issue raised in the responses to DisabRA's petition concerns the wind speed at which SDG&E may exercise its statutory authority to shut off power. Briefly, SCE and SDG&E assert that the Commission's General Order (GO) 95 requires electric utilities to design overhead power-line facilities to

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<sup>5</sup> On September 8, 2011, the Center for Accessible Technology (CforAT) filed a motion for party status in this proceeding. The motion states that CforAT should replace DisabRA in this proceeding, and that DisabRA will cease to participate as an active party in this proceeding. The motion was granted in a ruling dated October 7, 2011. Today's decision uses "DisabRA" to refer to both DisabRA and CforAT.

withstand a wind speed of 56 mph, and that electric utilities may exercise their statutory authority to shut off power when wind gusts exceed 56 mph.<sup>6</sup> In contrast, CPSD and DRA contend that GO 95 requires overhead power-line facilities to withstand wind gusts of at least 91 mph, and that it would be unreasonable for SDG&E to shut off power at winds speeds below 91 mph.

On June 3, 2011, the assigned Administrative Law Judge (ALJ) issued a ruling that directed SDG&E to file comments containing specified information about (1) the design of its overhead power-line facilities with respect to wind loads, and (2) the performance of its facilities in windy conditions. The other parties were also invited to file comments on these matters.

Opening comments were filed on July 25, 2011, by CPSD, MGRA, SCE, SDG&E, and a coalition of Communications Providers.<sup>7</sup> Reply comments were filed on August 12, 2011, by CPSD, MGRA, SCE, and SDG&E.<sup>8</sup> The parties were also provided an opportunity by the ALJ ruling dated June 3, 2011, to request an evidentiary hearing on wind-speed issues. There were no requests for an evidentiary hearing, and none was held.

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<sup>6</sup> GO 95 specifies several different wind-load requirements. Today's decision will use the wind-load requirements for overhead power-line facilities classified as Grade A and located in the Light-Loading District, unless otherwise indicated.

<sup>7</sup> The Communications Providers are several AT&T entities and affiliates; CoxCom, Inc. and Cox California Telcom, LLC; CTIA-The Wireless Association; Time Warner Cable; and the California Cable & Telecommunications Association.

<sup>8</sup> MGRA filed amended comments and reply comments on September 2, 2011. CPSD filed amended reply comments on September 7, 2011.



### **3. DisabRA's Petition to Modify D.09-09-030**

#### **3.1. Summary of the Petition**

DisabRA represents that SDG&E has refused to commit to any plan for notifying customers when SDG&E anticipates that it will shut off power for safety reasons pursuant to its statutory authority, or for helping customers to cope with statutory shut offs by providing shelter, evacuation assistance, generators, or financial assistance.

DisabRA is concerned that shutting off power without notice or mitigation will place SDG&E's residential customers at serious risk, especially those with disabilities. To ensure that the public is protected in the event of a statutory shut off, DisabRA asks the Commission to modify D.09-09-030 to (1) require SDG&E to take appropriate and feasible steps to warn and protect its customers whenever SDG&E shuts off power pursuant to its statutory authority; and (2) state that the Commission's after-the-fact review of a statutory shutoff may assess the adequacy of the notice and mitigation provided by SDG&E.

#### **3.2. Summary of Responses to the Petition**

##### **3.2.1. CPSD and DRA**

CPSD and DRA support DisabRA's petition to modify D.09-09-030. CPSD and DRA argue that shutting off power without sufficient mitigation would be contrary to D.09-09-030, which rejected SDG&E's proposed shut-off plan because it would, on balance, do more harm than good.

##### **3.2.2. County of San Diego**

The County of San Diego supports DisabRA's petition. The County believes that granting the petition will provide an incentive for SDG&E to implement reasonable mitigation requests from stakeholders, and also prevent SDG&E from shifting all costs for an outage to SDG&E's customers, even though some of these costs are more cost effectively borne by SDG&E.

### **3.2.3. MGRA**

MGRA supports DisabRA's petition. At the same time, MGRA agrees with the general principle that it may be prudent to shut off power to prevent power-line fire ignitions during extreme weather conditions.

### **3.2.4. SCE**

SCE opposes DisabRA's petition because it could adversely affect SCE's ability to respond to emergencies. Although SCE has no plans to shut off power based on pre-defined weather conditions, SCE does de-energize circuits when necessary for public safety. For example, SCE will shut off power when debris hits a power line during a wind storm, vegetation contacts a power line, or a power line is down for any reason (e.g., pole hit by a vehicle). In situations like these, SCE endeavors to notify customers, but SCE says it has no obligation to do so if emergency conditions require an immediate shut-off. Mitigation for all outages, whatever the cause, is addressed by SCE's Service Guarantee Program, which applies when an unplanned outage exceeds 24 hours.

SCE is concerned that a requirement to notify customers prior to de-energizing a power line would take precedence over public safety. SCE opines that uncertainty about whether a condition is "dangerous enough" to permit immediate shut-off without customer notification, and to what extent the utility must implement mitigation beyond its service guarantee, should not be occupying the minds of utility decision-makers during emergency situations.

### **3.2.5. SDG&E**

SDG&E opposes DisabRA's petition to modify D.09-09-030. SDG&E argues that the petition is unnecessary because SDG&E is implicitly obligated by §§ 399.2 and 451 to provide customer notification and other mitigation when feasible and appropriate. For public-safety outages, SDG&E will provide a

pre-recorded telephone notice to the general population, and additional personal notification to medical baseline customers, life support customers, and assigned commercial accounts. SDG&E's notification system includes text capability to reach those with hearing disabilities. SDG&E will also implement mitigation measures when emergency conditions require SDG&E to shut off power.

SDG&E contends that to the extent DisabRA's petition is interpreted as a proposal for a new and higher standard, the proposal should be rejected for three reasons. First, the standard is vague. The petition does not identify any specific notice or mitigations requirements.

Second, the petition does not address the potential conflict between the existing public-safety obligation and a new standard for customer notification and mitigation. Imposing a new imperative without identifying its precise requirements or how it interacts with existing obligations may result in unintended negative consequences that undermine public safety.

Finally, to the extent DisabRA seeks to require SDG&E to implement the mitigation measures proposed by SDG&E in A.08-12-021, the petition does not address the feasibility of those mitigation measures in the context of a statutory shutoff event. SDG&E's application involved a proactive shut-off plan, whereas a statutory shutoff event is reactive and applies only where conditions threaten immediate harm to SDG&E's system. It may not be possible to implement the mitigation measures proposed in A.08-12-021 in every emergency situation.

### 3.3. Discussion

In D.09-09-030, the Commission held that SDG&E has authority under § 399.2 and § 451 to shut off power during emergencies when necessary to protect public safety.<sup>9</sup> DisabRA seeks to modify D.09-09-030 to require SDG&E to take all feasible and appropriate steps to (1) notify customers of statutory shutoff events, and (2) mitigate the costs and risks that statutory shutoff events impose on customers. DisabRA also seeks to modify D.09-09-030 to state that the Commission's review of a statutory shutoff event may assess the adequacy of the notice and mitigation provided by SDG&E. The Commission has broad jurisdiction under the California Constitution and the Public Utilities Code to grant or deny DisabRA's petition.<sup>10</sup>

SDG&E acknowledges that it is implicitly obligated by § 399.2 and § 451 to provide notice and mitigation, to the extent feasible and appropriate, whenever it shuts off power.<sup>11</sup> Therefore, we conclude that it is reasonable to adopt DisabRA's petition to modify D.09-09-030, as doing so merely formalizes an existing requirement.

It is not possible to anticipate every emergency situation where power may be shut off for safety reasons and then specify the exact notice and mitigation measures that should be implemented in each situation. In general, SDG&E should provide as much notice as feasible before shutting off power so the

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<sup>9</sup> D.09-09-030, Conclusion of Law 3.

<sup>10</sup> California Constitution Article XII, §§ 3 and 6, and Pub. Util. Code §§ 216, 701, 761-770, 8037, and 8056.

<sup>11</sup> SDG&E Response at 2 - 3.

affected providers of essential services (e.g., schools, hospitals, prisons, public safety agencies, telecommunications utilities, and water districts) and customers who are especially vulnerable to power interruptions (e.g., customers who rely on medical life-support equipment) may implement their own emergency plans. Once power is shut off, SDG&E should focus its resources on restoring power as soon as possible. Any remaining resources should be concentrated on providing other mitigation to the extent feasible and appropriate under the circumstances.

#### **4. Authority to Shut Off Power in Hazardous Wind Conditions**

##### **4.1. Introduction**

In D.09-09-030, the Commission held that SDG&E has authority pursuant to § 451 and § 399.2(a) to shut off power, if necessary to protect public safety, when strong Santa Ana winds threaten to topple power lines onto tinder dry brush.<sup>12</sup> SDG&E subsequently informed DisabRA that most of SDG&E's overhead power lines are designed to withstand wind gusts of 56 mph, and that SDG&E may shut off power as a safety precaution when wind gusts exceed 56 mph. This prompted DisabRA to file its petition to modify D.09-09-030, which we addressed above in today's decision.

In their joint response to DisabRA's petition, CPSD and DRA raised the corollary issue of SDG&E's authority to shut off power when wind speeds exceed 56 mph. CPSD and DRA argue that GO 95 requires SDG&E's system to withstand a wind speed of at least 91 mph, and that SDG&E would be in violation of D.09-09-030 and GO 95 if it shut off power below 91 mph. We conclude that SDG&E's authority to shut off power at wind speeds between

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<sup>12</sup> D.09-09-030 at 61 - 62.

56 mph and 91 mph has a clear nexus with DisabRA's petition and, therefore, should be addressed by today's decision.

#### **4.2. Summary of GO 95 Requirements for Wind Loads**

To better understand the positions of the parties, summarized below, we first review GO 95 requirements for wind loads. Rule 43 of GO 95 divides California into a Heavy-Loading District and a Light-Loading District. The Light-Loading District is all parts of California where the elevation is 3,000 feet or less. Rule 43.2(A) requires power-line facilities in the Light-Loading District with cylindrical surfaces (e.g., utility poles) to withstand a horizontal wind pressure of 8 pounds per square foot (psf). Facilities with flat surfaces (e.g., crossarms) must withstand a horizontal wind load of 13 psf. Approximately 90% of SDG&E's overhead power-line facilities are in the Light-Loading District.

Rule 44 prescribes an initial safety factor<sup>13</sup> for each power-line element (e.g., poles and crossarms) at the time of installation that can vary based on the material (e.g., wood or metal) and the grade of construction. Most of SDG&E's power-line facilities are Grade A or Grade B construction.<sup>14</sup> Rule 44.3 allows the safety factor to degrade over time, but not below a safety factor of one or two-thirds of the safety factor at the time of installation, whichever is higher, at which time the facility must be reconstructed or replaced.

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<sup>13</sup> Rule 44 defines "safety factors" as "the minimum allowable ratios of ultimate strengths of materials to the maximum working stresses."

<sup>14</sup> The grades of construction are A, B, C and F, with "A" being the highest. Utility poles with both power lines and communications lines attached must be Grade A. Utility poles with only distribution-level power lines attached may be Grade B.

Rule 48 requires overhead power-line facilities to withstand a wind force equal to the wind load specified in Rule 43 multiplied by the applicable safety factor in Rule 44. Rule 48 states, in relevant part, as follows:

Structural members and their connection shall be designed and constructed so that the structures and parts thereof **will not fail**... at any load less than their maximum working loads... specified in Rule 43 ... multiplied by the safety factor specified in Rule 44. (Emphasis added.)

The following Table 1 shows the minimum wind loads (in psf and mph)<sup>15</sup> that must be used for the design and construction of certain Grade A facilities in the Light-Loading District pursuant to Rules 43, 44, and 48:

| <b>Table 1</b>   |                       |                                |                                    |                                     |                          |
|--|-----------------------|--------------------------------|------------------------------------|-------------------------------------|--------------------------|
| <b>GO 95 Wind Load Requirements for the Light-Loading District</b> |                       |                                |                                    |                                     |                          |
| <b>Selected Grade A Power-Line Elements</b>                        |                       |                                |                                    |                                     |                          |
| <b>Line Element</b>  | <b>Rule 43.2(A)</b>   | <b>Rule 44.1</b>               | <b>Rule 44.3</b>                   | <b>Rule 48</b>                      |                          |
|  | <b>Working Load A</b> | <b>Initial Safety Factor B</b> | <b>Replacement Safety Factor C</b> | <b>Working Load x Safety Factor</b> |                          |
|  |                       |                                |                                    | <b>Initial A x B</b>                | <b>Replacement A x C</b> |
| <b>Wood Pole</b>   | 8 psf<br>56 mph       | 4                              | 2.67                               | 32 psf<br>112 mph                   | 21.3 psf<br>91 mph       |
| <b>Steel Pole</b>  | 8 psf<br>56 mph       | 1.5                            | 1.0                                | 12 psf<br>69 mph                    | 8 psf<br>56 mph          |
| <b>Wood Crossarm (flat surface)</b>                                | 13 psf<br>71 mph      | 2                              | 1.33                               | 26 psf<br>101 mph                   | 17.33 psf<br>82 mph      |
| <b>Steel Crossarm (flat surface)</b>                               | 13 psf<br>71 mph      | 1.5                            | 1.0                                | 19.5 psf<br>87 mph                  | 13 psf<br>71 mph         |

<sup>15</sup> Today's decision assumes that the relationship between wind load in psf and wind velocity (V) in mph is given by the equation: Wind load (psf) = 0.00256V<sup>2</sup>. The values for mph used by today's decision are rounded to the nearest whole number.

The following Table 2 shows the minimum wind loads (in psf and mph) that must be used for the design and construction of certain Grade B facilities in the Light-Loading District pursuant to Rules 43, 44, and 48:

| <b>Table 2</b>   |                       |                                |                                    |                                     |                          |
|--|-----------------------|--------------------------------|------------------------------------|-------------------------------------|--------------------------|
| <b>GO 95 Wind Load Requirements for the Light-Loading District</b> |                       |                                |                                    |                                     |                          |
| <b>Selected Grade B Power-Line Elements</b>                        |                       |                                |                                    |                                     |                          |
|  | <b>Rule 43.2(A)</b>   | <b>Rule 44.1</b>               | <b>Rule 44.3</b>                   | <b>Rule 48</b>                      |                          |
|  |                       |                                |                                    | <b>Working Load x Safety Factor</b> |                          |
| <b>Line Element</b>  | <b>Working Load A</b> | <b>Initial Safety Factor B</b> | <b>Replacement Safety Factor C</b> | <b>Initial A x B</b>                | <b>Replacement A x C</b> |
| <b>Wood Pole</b>   | 8 psf<br>56 mph       | 3                              | 2.0                                | 24 psf<br>97 mph                    | 16 psf<br>79 mph         |
| <b>Steel Pole</b>  | 8 psf<br>56 mph       | 1.25                           | 1.0                                | 10 psf<br>63 mph                    | 8 psf<br>56 mph          |
| <b>Wood Crossarm (flat surface)</b>                                | 13 psf<br>71 mph      | 2                              | 1.33                               | 26 psf<br>101 mph                   | 17.3 psf<br>82 mph       |
| <b>Steel Crossarm (flat surface)</b>                               | 13 psf<br>71 mph      | 1.25                           | 1.0                                | 16.3 psf<br>80 mph                  | 13 psf<br>71 mph         |

Table 1 shows that Rule 48 requires a Grade A wood pole in the Light-Loading District to be designed so it “will not fail” at a wind speed of 112 mph at the time installation, and that a Grade A wood pole must be replaced when it no longer meets the “will not fail” standard at a wind speed of 91 mph due to age-related deterioration or other causes.

Similarly, Table 2 shows that Rule 48 requires a Grade B wood pole in the Light-Loading District to be designed so it “will not fail” at a wind speed of 97 mph at the time installation, and that a Grade B wood pole must be replaced when it no longer meets the “will not fail” standard at a wind speed of 79 mph due to age-related deterioration or other causes.



### **4.3. Summary of the Parties' Positions**

#### **4.3.1. The Communications Providers**

The Communications Providers maintain that SDG&E's statutory authority to shut off power in windy conditions cannot be based on wind speed alone. Each situation must be assessed to determine if public safety is better served by leaving power on, or shutting it off. Other factors besides wind conditions may be relevant, such as whether a Red Flag Warning is in effect.

#### **4.3.2. CPSD and DRA**

CPSD and DRA assert that Rule 48 requires SDG&E to design and construct overhead power-line facilities that "will not fail" at the wind speeds listed in the last column in Tables 1 and 2 above. For example, Table 1 shows that a Grade A wood pole must withstand a wind speed of at least 91 mph without failure. CPSD and DRA argue that it is unreasonable for SDG&E to shut off power at 56 mph because this is far below what is required by GO 95.

CPSD acknowledges that the strength of wood poles can vary. In fact, CPSD provided several graphs and tables that show the probability that wood poles will fail at various wind speeds based on the specifications for wood poles in GO 95, Rule 48.1, Table 5, Footnote C. CPSD states that although the strength of wood pole varies, that has no effect on the Rule 48 requirement that Grade A wood poles "will not fail" at a wind speed of 91 mph.

CPSD does not believe the data presented by SDG&E, summarized below, demonstrates that SDG&E should shut off power when wind speeds exceed 56 mph. Even though SDG&E identified almost 1,000 power-line failures and 13 power-line fires attributable to strong winds, CPSD opines that many of these incidents may have been caused by noncompliance with GO 95.

CPSD contends that the Commission is not limited to the options of either keeping power on and risking catastrophic power-line fires, or shutting off power when wind speeds exceed 56 mph. There are other measures that can be taken to reduce the risk of power-line fires. For example, SDG&E has modified its automatic re-closers so that SDG&E will no longer re-energize power lines automatically after a re-closer shuts off power to a circuit during a high-wind event. Instead, SDG&E will inspect its facilities to determine if electric power can be restored safely. CPSD believes this measure alone might have prevented the devastating Witch Fire in 2007.

#### **4.3.3 MGRA**

MGRA states that SDG&E is required to provide safe and reliable electric service in conditions typically found in its service area. SDG&E's service area is dense with flammable vegetation and regularly experiences strong winds during dry conditions. MGRA submits that an infrastructure which even occasionally ignites fires in these conditions is not suitably robust and safe.

MGRA agrees with the Commission's conclusion in D.09-09-030 that there are weather conditions when the risk of power-line fires outweighs other considerations and justifies shutting off power. MGRA further notes that SDG&E's comments establish that power-line failures and fires can occur when wind gusts exceed 56 mph. If this does not comply with GO 95, MGRA recommends that the Commission establish a remediation plan to have SDG&E's system brought up to the correct standard over time.

#### **4.3.4. SCE**

SCE interprets GO 95 as requiring overhead power lines to withstand the wind loads specified in Rule 43. For facilities with a cylindrical surface in the Light Loading District, Rule 43.2(A) sets a requirement of 8 psf, which equates to

a wind speed of 56 mph. The purpose of the safety factor required by Rule 44 and Rule 48, according to SCE, is to ensure that facilities are built stronger than necessary for the design load of 56 mph established by Rule 43.

SCE states that one reason Rules 44 and 48 require overhead power-line facilities to be built stronger than necessary is the inherent variability of materials. In the case of wood poles, Rule 48.1, Table 5, lists the strength for several species of wood. For example, the strength of Douglas Fir poles is 8,000 pounds per square inch (psi) with a coefficient of variation (COV) of 0.20. Multiplying 8,000 psi by a COV of 0.20 gives a standard deviation of 1,600. Thus, the strength of 68% of Douglas Fir poles is between 6,400 psi and 9,600 psi, and the strength of 95% of Douglas Fir poles is between 4,800 psi and 11,200 psi. A Douglas Fir pole can be anywhere in this range and comply with GO 95.

SCE explains that because there is wide variability in the strength of wood poles, Rule 44 requires new Grade A wood poles to have a safety factor of 4.0 to protect against the structural failure of wood poles. In contrast, the required safety factor for new Grade A steel poles is only 1.5 because the variability of material strength for steel poles is much less (i.e., the COV is smaller).

To illustrate the variability of wood poles, SCE calculated an estimated rate of pole failures at various wind speeds. Assuming a sufficiently large sample of new Grade A wood poles in the Light-Loading District that are fully loaded, identically installed, and identically exposed to wind velocities, approximately 0.01% of all such poles will fail at a wind speed of 56 mph. These rare failures will occur even though new Grade A wood poles are designed to withstand a wind speed of 112 mph simply because the actual strength of the failed poles will be far below the average strength of 8,000 psi.

SCE represents that as wind speeds increase, the statistical probability of pole failures will rise. Using the same assumptions as above, 0.02% of new Grade A wood poles could be expected to fail at 60 mph, 0.10% at 70 mph, 13.7% at 100 mph, and 50% at 112 mph. SCE cautions that the actual frequency of pole failures should be less than calculated because (1) many poles are not loaded to their maximum GO 95 capacity, (2) wind does not impose an equal load on all poles at all times, and (3) wind usually blows at an other than the 90° angle assumed in GO 95.

SCE notes that although Rule 44 requires a higher safety factor for wood poles relative to most facilities attached to the poles (e.g., crossarms), there is no reason to expect that the facilities attached to wood poles will fail at lower wind speeds than the poles themselves. SCE agrees with SDG&E that the pole, rather than the components attached to it, should fail first due to wind-related loads.<sup>16</sup>

With respect to a utility's decision to shut off power in hazardous weather conditions, SCE states that power-line facilities should not be operated to within a hair's breadth of their theoretical failure point. It is impossible to know when the actual failure point will be reached for any particular structure because:

- Wind speed is variable from moment to moment. It is not feasible to shut off power at the precise moment when wind speed exceeds the design limit of overhead power-line facilities.
- Wind speed is variable from place to place. It is impossible to know the wind speed everywhere on the system. As wind speed approaches the design limit at a location on the system where wind speed is measured, it is possible that

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<sup>16</sup> SDG&E Opening Comments at 103.

wind speeds are exceeding the design limit elsewhere on the system where wind speed is not measured.

- The strength of wood is inherently variable. There is a statistical possibility that a particular wood pole or crossarm will fail before the design limit is reached.

SCE identifies several other factors that should be considered when deciding whether to shut off power due to a potential fire hazard. These include the number of customers affected, possible fire damage, fire-suppression resources, and weather conditions (e.g., wind, temperature, and humidity).

SCE opines that it is not practical to develop rules for when it will always be appropriate to shut off power given the many factors and uncertainties that affect a utility's decision to shut off power. Thus, shutting off power must remain a discretionary decision for the utility based on the utility's knowledge, expertise, and contemporaneous conditions on its system.

SCE disagrees with CPSD and DRA's "never fail" interpretation of Rule 48. Their interpretation would require utilities to construct their facilities to a new and higher standard that would cost billions of dollars. For example, utilities would have to install many more poles than presently, and replace existing poles with larger poles. SCE believes that such changes are unwarranted because there is no showing that the utilities' long-standing interpretation of GO 95 has resulted in an unacceptable rate of pole failures.

#### **4.3.5. SDG&E**

SDG&E joins SCE in disagreeing with CPSD and DRA's interpretation of Rule 48 as requiring that Grade A wood poles "will not fail" at wind speeds below 91 mph. SDG&E argues that Rule 43 establishes the design standard for wind loads, not Rule 48. SDG&E posits that the Rule 43 wind speeds which facilities must withstand are listed in Column A of Tables 1 and 2 above. For

example, Column A of Table 1 shows that Grade A poles must withstand wind gusts of 56 mph.

SDG&E avers that the purpose of the safety factor required by Rule 44 and Rule 48 is to ensure that power-line facilities are built stronger than necessary for the design loads specified in Rule 43, consistent with sound engineering principles. The adoption of CPSD and DRA's interpretation of Rule 48 as establishing the design loads, and not Rule 43, would force a major change in the way California utilities design their systems.

SDG&E provided extensive information regarding the performance of its overhead power-line facilities in windy conditions. Table 1 of SDG&E's comments lists every known incident from January 1, 2000 to mid-2011 where an electrical or structural failure occurred on SDG&E's system which SDG&E attributes to strong winds. SDG&E's Table 1 lists a total of 969 failures. Most failures were electrical failures. Pole failures, which include failures of poles, crossarms, guys, insulators, and braces, comprise less than 10% of the incidents reported in SDG&E's Table 1.

SDG&E's Table 2 lists every known incident from January 1, 2000 to mid-2011 where a wind-related failure of SDG&E's overhead power-line facilities may have ignited a fire, although fault may yet to be determined. The approximate size of the fire and any damage caused by the fire are also provided. SDG&E lists a total of 13 fires, including the Witch, Rice, and Guejito Fires in October 2007, which together burned more than 207,000 acres.

SDG&E's Table 3 lists every incident from January 1, 2000 to mid-2011 for which SDG&E has records where an anemometer reported a wind speed of at least 56 mph. Table 3 includes the date, location, start time, length of time above 56 mph, and the maximum measured wind speed for each incident.

SDG&E's Table 4 shows that most wind-related failures occurred on a small number of days with strong winds. In particular, there were seven severe wind events encompassing 12 days that accounted for 53% of all wind-related failures during the period of January 1, 2000 through mid-2011.<sup>17</sup> SDG&E's Table 5 shows that most of the severe wind events and associated failures listed in Table 4 occurred when the fire threat was extremely high.

SDG&E also provided information regarding the design of its overhead power-line facilities. SDG&E states that it has 8,431 miles of overhead power-line facilities, all of which comply with GO 95. SDG&E represents that 90% of its overhead facilities (approximately 7,552 miles) are in the Light-Loading District defined by Rule 43.2 and are designed to withstand a wind speed of 56 mph. Approximately 9% of SDG&E's overhead facilities (762 miles) are in the Heavy-Loading Districts defined by Rule 43.1 and are designed to withstand a wind speed of 48 mph. Approximately 1% of SDG&E's overhead facilities (90 miles) are designed to withstand a wind speed of 85 mph pursuant to National Electric Safety Code Rule 250C.

As noted previously, 90% of SDG&E's overhead power-line facilities are designed to withstand a wind speed of 56 mph. For these facilities, the rate of failure is very low at wind speeds below 56 mph, but rises sharply when wind gusts reach and exceed the design basis of 56 mph.

SDG&E explains that GO 95 recognizes that wood utility poles do not have uniform strength. In particular, Rule 48.1, Table 5 (Wood Strengths) specifies

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<sup>17</sup> SDG&E's Table 4 shows a total of 521 failures during the 12 days listed in Table 4.

average strengths for wood poles, with 50% of wood poles stronger than the values listed in Rule 48.1, Table 5, and 50% weaker.

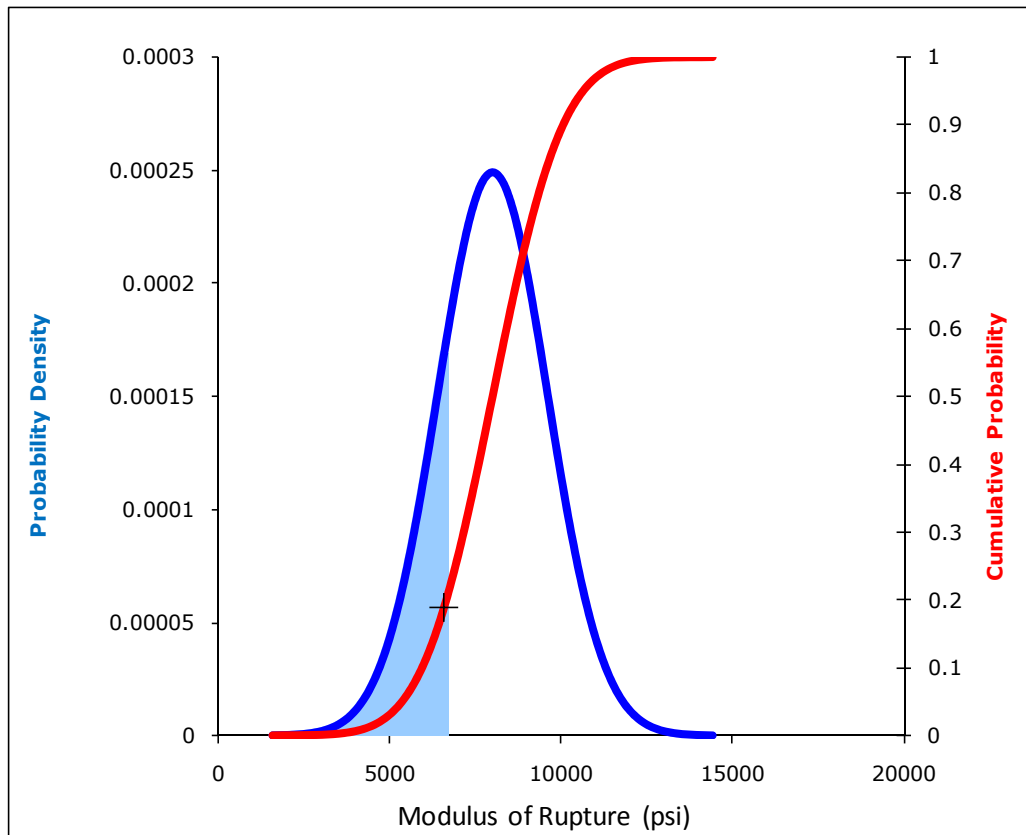
For Douglas Fir poles and Southern Yellow Pine poles, Rule 48.1, Table 5, specifies a modulus of rupture<sup>18</sup> of 8,000 psi for poles that comply with American National Standards Institute (2002) standard O5.1 (ANSI O5.1). SDG&E states that all of its wood poles meet ANSI 05.1. SDG&E represents that ANSI 05.1 indicates that the coefficient of variation (COV) for the modulus of rupture is 0.20 (or 20%). The mean value of 8,000 psi, coupled with a COV of 20%, defines a normal distribution for the strength of wood poles shown in the following Figure 5 of SDG&E's comments:

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<sup>18</sup> Modulus of rupture is the breaking point for a material subjected to a bending force.



**Normal Distribution Curve - Strength of Full-Size Wood Poles**



Based on the assumed strength distribution for wood poles in the above graph, SDG&E's Table 6 provided the estimated failure rates for fully loaded Grade A wood poles and Grade B wood poles at various wind speeds.

The estimated failure rates in SDG&E's Table 6 are a worst-case scenario in that it assumes all of SDG&E's poles are loaded to the maximum allowed by GO 95. However, SDG&E's wood poles are typically loaded at 70% to 80% of the maximum allowed by GO 95 at the time of installation, and SDG&E's installed poles have an average remaining strength of 95%. SDG&E's Tables 7 and 8 show the estimated failure rates at various wind speeds for wood poles with 70% utilization and 5% degradation, and 80% utilization and 5% degradation.

In terms of operating its overhead power-line system, SDG&E will not shut off power based on wind conditions alone. SDG&E will consider all

relevant circumstances, including concurrent temperature, humidity, and vegetation moisture. If SDG&E does shut off power, SDG&E will restore power when the conditions that created the public-safety hazard have abated. This comports with SDG&E's operating practices with respect to all power outages.

#### **4.4. Discussion**

In D.09-09-030, the Commission held that SDG&E has statutory under § 451 and § 399.2(a) to shut off power in emergency situations when necessary to protect public safety. These laws state, in relevant part, as follows:

**§ 451:** Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities...as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public.

**399.2 (a)(1):** It is the policy of this state, and the intent of the Legislature, to reaffirm that each electrical corporation shall continue to operate its electric distribution grid in its service territory and shall do so in a safe, reliable, efficient, and cost-effective manner.

**399.2 (a)(2):** In furtherance of this policy, it is the intent of the Legislature that each electrical corporation shall continue to be responsible for operating its own electric distribution grid including, but not limited to, owning, controlling, operating, managing, maintaining, planning, engineering, designing, and constructing its own electric distribution grid, emergency response and restoration, service connections, service turnons and turnoffs, and service inquiries relating to the operation of its electric distribution grid, subject to the commission's authority.

We affirm our holding in D.09-09-030 that SDG&E's statutory obligation to operate its system safely requires SDG&E to shut off its system if doing so is necessary to protect public safety. We also affirm our determination in

D.09-09-030 that SDG&E may need to shut off power to protect public safety if strong Santa Ana winds threaten to topple power lines onto tinder dry brush.

#### **4.4.1. SDG&E's Design Standard for Wind Loads**

We next consider the design of SDG&E's power-line facilities with respect to wind loads. As a general rule, utility poles are more likely to break due to strong winds than other power-line components.<sup>19</sup> Therefore, today's decision will focus on utility poles.

Most of SDG&E's Grade A and Grade B wood poles are in the Light-Loading District. SDG&E provided extensive and uncontroverted comments that show its Grade A and Grade B wood poles in the Light-Loading District are designed to withstand wind gusts of 56 mph. As a result, SDG&E's Grade A and Grade B wood poles rarely fail at wind gusts below 56 mph. However, when wind gusts exceed SDG&E's design basis of 56 mph, the rate of pole failures increases markedly.

The following Table 3 reproduces SDG&E's estimated failure rates for its Grade A and Grade B wood poles, assuming new poles are loaded at 70% or 80% of the maximum capacity allowed by GO 95, and aged poles have 95% of their remaining strength.

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<sup>19</sup> SDG&E Opening Comments at 103.

| <b>Table 3</b>  |                           |                          |                         |                          |                           |                          |                         |                          |
|---|---------------------------|--------------------------|-------------------------|--------------------------|---------------------------|--------------------------|-------------------------|--------------------------|
| <b>Estimated Failure Rates for SDG&amp;E's Wood Poles from Strong Winds<br/>For New Poles (100% remaining strength) and Aged Poles (95% remaining strength)</b> |                           |                          |                         |                          |                           |                          |                         |                          |
|   | <b>Grade A Wood Poles</b> |                          |                         |                          | <b>Grade B Wood Poles</b> |                          |                         |                          |
| <b>Wind Speed (mph)</b>   | <b>New 70% Utilized</b>   | <b>Aged 70% Utilized</b> | <b>New 80% Utilized</b> | <b>Aged 80% Utilized</b> | <b>New 70% Utilized</b>   | <b>Aged 70% Utilized</b> | <b>New 80% Utilized</b> | <b>Aged 80% Utilized</b> |
| 60  | 0.0030%                   | 0.0037%                  | 0.0054%                 | 0.0068%                  | 0.0113%                   | 0.0149%                  | 0.0233%                 | 0.0313%                  |
| 70  | 0.0126%                   | 0.0166%                  | 0.0262%                 | 0.0353%                  | 0.0656%                   | 0.0907%                  | 0.1551%                 | 0.2180%                  |
| 80  | 0.0577%                   | 0.0796%                  | 0.1350%                 | 0.1898%                  | 0.3835%                   | 0.5485%                  | 0.9841%                 | 1.4166%                  |
| 90  | 0.2683%                   | 0.3813%                  | 0.6788%                 | 0.9761%                  | 2.0336%                   | 2.9336%                  | 5.2135%                 | 7.3963%                  |
| 100   | 1.174%                    | 1.695%                   | 3.044%                  | 2.116%                   | 8.789%                    | 12.267%                  | 20.249%                 | 26.966%                  |
| 110   | 4.545%                    | 6.469%                   | 11.149%                 | 15.394%                  | 27.797%                   | 36.094%                  | 51.675%                 | 62.094%                  |
| 120   | 14.395%                   | 19.630%                  | 30.854%                 | 39.630%                  | 59.871%                   | 70.050%                  | 84.135%                 | 90.585%                  |
| <b>Source:</b> SDG&E Opening Comments at 110 – 11, Tables 7 and 8.  |                           |                          |                         |                          |                           |                          |                         |                          |

Table 3 represents the “as built” condition of SDG&E’s Grade A and Grade B wood poles, and denotes the lower and upper bounds for most of SDG&E’s wood poles. Table 3 shows that SDG&E’s Grade A wood poles will fail at an estimated rate of 30 to 68 poles per million at 60 mph, 126 to 353 poles per million at 70 mph, and so on. Similarly, Table 3 shows that SDG&E’s Grade B wood poles will fail at an estimated rate of 113 to 313 poles per million at 60 mph, 656 to 2,180 poles per million at 70 mph, and so on.

In reality, SDG&E’s wood poles will probably fail at a lower rate than estimated in Table 3 for the following reasons:

- Table 3 assumes the wind is blowing at a 90-degree angle relative to the structure, which imposes the maximum wind load on the structure. Wind that hits a structure at a 90-degree angle imposes twice the load compared to a 30-degree angle. Although wind often blows at a 90-degree angle relative to a vertical utility pole with a cylindrical surface, the wind angle is typically less than 90 degrees for most facilities attached to a utility pole, such

- as crossarms and conductors (which transfer their wind loads to the utility poles to which they are attached).
- The drag coefficients used in calculations to determine the wind load for cylindrical surfaces are assumed to be 1.0 for conservatism. However, the actual coefficients are usually less than 1.0, especially at higher wind speeds. Thus, the real wind loads on utility poles are typically lower than calculated.
  - Poles are interconnected by wires and share wind loads.
  - The estimated failure rates in Table 3 assume the utility poles are Douglas Fir or Southern Pine with an average modulus of rupture (MOR) of 8,000 psi and a coefficient of variation (COV) of 0.20. However, all of SDG&E's wood poles comply with ANSI 05.1-1992.<sup>20</sup> Appendix C, Table C.1, of ANSI 05.1-1992 shows that for wood poles with a length of 50 feet or less, Coastal Douglas Fir poles have an MOR of 9,620 psi with a COV of 0.135; Interior Douglas Fir poles have an MOR of 8,020 psi with a COV of 0.179; and Southern Pine poles have an MOR of 10,190 psi with a COV of 0.169.<sup>21</sup> Consequently, many poles installed by SDG&E are stronger than assumed in Table 3.

Although Table 3 likely overstates the risk that SDG&E's wood poles will fail due to strong winds, there is a clearly a risk that SDG&E's existing wood poles may fail when winds exceed 56 mph, with the risk increasing exponentially with wind speed. This risk is described quantitatively by the engineering

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<sup>20</sup> SDG&E Opening Comments at 107.

<sup>21</sup> We take official notice of ANSI 05.1-1992 pursuant §§ 701 and 1701, and Rule 13.9 of the Commission's Rules of Practice and Procedure.

calculations that are tabulated in SDG&E's comments,<sup>22</sup> and evidenced by the dozens of SDG&E poles that have failed over the years during strong winds.<sup>23</sup>

We are not persuaded by CPSD's argument that most failures of SDG&E's overhead power-line facilities during strong winds may be due to substandard facilities. Although we do not discount the possibility of some substandard facilities, SDG&E's comments show there is a real and quantifiable risk that existing facilities which are not substandard (according to SDG&E) will fail when exposed to strong winds.

#### **4.4.2. Shutting Off Power in Hazardous Wind Conditions**

The failure of SDG&E's overhead power-line facilities during strong Santa Ana winds poses a significant fire hazard and threat to public safety. SDG&E's comments show that during the period of January 1, 2000 through mid-2011, there were two instances where strong Santa Ana winds occurred simultaneously with a Red Flag Warning declared by the National Weather Service. During these two Santa Ana wind events, there were 149 failures of SDG&E's overhead power-line facilities, including 16 pole failures, which purportedly ignited three wildfires.<sup>24</sup> These three fires together burned more than 207,000 acres (323 square miles) and caused widespread devastation.<sup>25</sup>

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<sup>22</sup> SDG&E Opening Comments, Tables 6, 7 and 8 at 109 - 111. (See also SCE's Opening Comments at 8 - 9, and CPSD's Opening Comments at 13 - 17.)

<sup>23</sup> SDG&E Opening Comments, Table 1 at 4 - 79, and Table 4 at 98.

<sup>24</sup> SDG&E Opening Comments, Table 1 at 5 - 12 and 50 - 54. The three fires were the Rice, Guejito, and Witch Fires.

<sup>25</sup> SDG&E Opening Comments, Table 2 at 89, and Table 4 at 98. Today's decision does not find that SDG&E's power-line facilities did, in fact, ignite fires.

In D.09-09-030, the Commission held that SDG&E has statutory authority under § 451 and § 399.2(a) to shut off power to protect public safety if Santa Ana winds exceed the design basis for SDG&E's system and threaten to topple power lines onto tinder dry brush. The record of this proceeding establishes that SDG&E will likely face the situation where strong Santa Ana winds exceed SDG&E's design basis of 56 mph for its overhead power-line facilities, presenting SDG&E with the dilemma of keeping vital power flowing in a dangerous situation, or shutting off power to protect the public from potentially catastrophic wildfires ignited by wind-damaged power-line facilities.

SDG&E will be in the best position to determine when power should be shut off to protect public safety. Only SDG&E has the detailed knowledge of its facilities that is needed to make this decision in real time based on contemporaneous local weather conditions.

As a general principle, SDG&E should keep power flowing when wind speeds exceed 56 mph. Without power, numerous unsafe conditions can occur. Traffic signals do not work, medical life support equipment does not work, water pumps do not work, and communication systems do not work. As the California Legislature recognized in § 330(g), "[r]eliable electric service is of utmost importance to the safety, health, and welfare of the state's citizenry and economy." Consequently, SDG&E should shut off power only as a last resort, and only when SDG&E is convinced there is a significant risk that strong Santa Ana winds will topple power lines onto flammable vegetation. This is

consistent with SDG&E's Commission-approved tariffs, which acknowledge that SDG&E has an obligation to provide electrical service on a continuous basis.<sup>26</sup>

Any decision by SDG&E to shut off power under its statutory authority may be reviewed by the Commission pursuant to its broad jurisdiction over matters regarding the safety of public utility operations and facilities. The Commission may decide at that time whether SDG&E's decision to shut off power was reasonable and qualifies for an exemption from liability under SDG&E's Electric Tariff Rule 14. This tariff rule provides that SDG&E will not be held liable for an interruption in service "caused by inevitable accident, act of God, fire, strikes, riots, war or any other cause not within its control."<sup>27</sup>

In assessing whether SDG&E's decision to shut off power was reasonable and should be exempt from liability under Tariff Rule 14, we may consider the following factors. First, there is a strong presumption that power should remain on for public safety reasons.<sup>28</sup> SDG&E will have the burden of demonstrating that its decision to shut off power was necessary to protect public safety.

Second, SDG&E should rely on other measures, to the extent available, as an alternative to shutting off power. These measures include reliance on automatic re-closers to shut off power in milliseconds if there is an electrical failure caused by power lines falling to the ground, and keeping power off until SDG&E can inspect its facilities to determine if it is safe to re-energize its power

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<sup>26</sup> SDG&E's Tariff Rule 14 (A) states: "The utility will exercise reasonable diligence and care to furnish and deliver a continuous and sufficient supply of electric energy to the customer, and to avoid any shortage or interruption of delivery of same."

<sup>27</sup> Tariff Rule 14, Section A.

<sup>28</sup> D.09-09-030 at 57.



lines. As CPSD notes, this measure alone might have prevented the catastrophic Witch Fire in October 2007 without shutting off power prematurely.

Third, the data provided by SDG&E shows that most facilities do not fail in strong winds, and most failures do not result in a fire. SDG&E must reasonably believe there is an imminent and significant risk that strong Santa Ana winds will topple its power lines onto tinder dry vegetation during periods of extreme fire hazard. The factors that SDG&E should consider, and which we may evaluate after the fact, include the following:

- The wind speed at the location(s) where power is shut off and the wind direction to the extent this affects the wind load on the facilities.
- The type of facilities at the location(s) where power is shut off (e.g., Grade A or Grade B, wood or steel, etc.); the wind load design basis for the facilities; the age and condition of the facilities; and the percent utilization (i.e., the actual safety factor).
- The calculated risk of wind-caused structural failures.
- The vegetation conditions where power is shut off (e.g., vegetation fuel load and fuel-level moisture).
- Whether the National Weather Service has declared a Red Flag Warning due to extremely low humidity or low humidity plus strong winds.

The above factors are illustrative, not inclusive.

Finally, we may consider SDG&E's efforts to mitigate the adverse impacts on the customers and communities in areas where SDG&E shuts off power. Such mitigation must include appropriate and feasible steps to warn and protect its customers whenever SDG&E shuts off power in Santa Ana wind conditions pursuant to its statutory authority. Appropriate mitigation might include, for

example, alternate sources of electric power for critical public services such as schools and water utilities.

We decline to adopt CPSD and DRA's position that SDG&E should be prohibited from shutting off power at wind speeds below 91 mph (for Grade A facilities). As noted previously, there is a risk that SDG&E's existing facilities may fail at wind speeds below 91 mph. It would be extremely dangerous to prohibit SDG&E from shutting off power when SDG&E reasonably believes there is an imminent danger of energized power lines falling onto tinder dry vegetation in Santa Ana wind conditions and there are no other safety measurers available (e.g., automatic re-closers) to prevent a fire.

So that we may monitor shutoff events, SDG&E shall notify the Director of CPSD no later than 12 hours after SDG&E shuts off power because, in part, SDG&E believes that strong winds could cause a structural failure of SDG&E's overhead power-line facilities. After the shut off has ended, SDG&E shall provide a report to the Director of CPSD that includes (i) an explanation of SDG&E's decision to shut off power; (ii) all factors considered by SDG&E in its decision to shut off power, including wind speed, temperature, humidity, and vegetation moisture in the vicinity of the de-energized circuits; (iii) the time, place, and duration of the shutoff event; (iv) the number of affected customers, broken down by residential, medical baseline, commercial/industrial, and other; (v) any wind-related damage to SDG&E's overhead power-line facilities in the areas where power is shut off; and (vi) any other matters that SDG&E believes are relevant to the Commission's assessment of the reasonableness of SDG&E's decision to shut off power. SDG&E shall submit the report no later than 10 business days after the shutoff event ends. The report shall be verified by an

SDG&E officer pursuant to Rule 1.11 of the Commission's Rules of Practice and Procedure.

CPSD may investigate each reported incident and prepare an order instituting investigation, if appropriate. The need for, and the outcome of, any investigation proceeding will be decided on a case by case basis taking into account all facts and circumstances.

We recognize that in D.09-09-030, the Commission authorized SDG&E to file an application for approval of a comprehensive fire-prevention program, including a provision to shut off power during periods of strong winds. However, as discussed previously in today's decision and in D.09-09-030, SDG&E has statutory authority to shut off power when necessary to protect public safety, subject to after-the-fact review by the Commission. The application contemplated by D.09-09-030 does not apply to the exercise of SDG&E's statutory authority to shut off power.

#### **4.4.3. Design Requirements**

Today's decision does not determine if SDG&E has correctly interpreted and applied GO 95 wind-load design requirements. We will address the appropriate design standards on a prospective basis in Phase 3 of Rulemaking (R.) 08-11-005. There, we will convene workshops where parties will develop proposals for revising GO 95 to include (1) a new High Fire-Threat District where there is an elevated risk of power-line fires occurring and spreading rapidly; and (2) design standards for overhead power-line facilities in the new High Fire-Threat District. These workshops will also assess if the new design standards

developed in Phase 3 should apply to existing facilities and, if so, to develop a plan, timeline, and cost estimate for upgrading existing facilities.<sup>29</sup>

### **5. Comments on the Proposed Decision**

The proposed decision of the assigned ALJ for this proceeding was mailed to the parties in accordance with Pub. Util. Code § 311, and comments were allowed in accordance with Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on \_\_\_\_\_ by \_\_\_\_\_ . Reply comments were filed on \_\_\_\_\_ by \_\_\_\_\_ .

### **6. Assignment of the Proceeding**

Timothy Alan Simon is the assigned Commissioner and Timothy Kenney is the assigned ALJ for this proceeding.

### **Findings of Fact**

1. Santa Ana winds are strong, dry winds that occur from time to time in SDG&E's service territory. Santa Ana winds can damage overhead power-line facilities. Fires ignited by wind-damaged power lines can spread rapidly in Santa Ana wind conditions and cause enormous destruction.

2. SDG&E has used a design basis for wind loads of 56 mph for most of its overhead power-line facilities. There is a risk that such facilities will experience structural failures when wind gusts exceed 56 mph. The risk of failure increases exponentially as wind speed increases.

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<sup>29</sup> D.12-01-032 at 121 - 123 and Ordering Paragraph 8.

3. De-energizing overhead power lines eliminates the risk that power lines will ignite fires during Santa Ana winds, but it also imposes significant costs, burdens, and risks on the customers and communities where power is shut off.

### **Conclusions of Law**

1. SDG&E has authority under Pub. Util. Code § 399.2(a) and § 451 to shut off power in emergency situations when necessary to protect public safety, including the situation where strong Santa Ana winds exceed the design basis for SDG&E's overhead power-line facilities and threaten to topple energized power lines onto tinder dry brush.

2. SDG&E should provide notice and mitigation to its customers, to the extent feasible and appropriate, whenever SDG&E shuts off power pursuant to its statutory authority.

3. DisabRA's petition to modify D.09-09-030 should be granted.

4. Any decision by SDG&E to shut off power under its statutory authority, including the adequacy of any notice given and any mitigation measures implemented by SDG&E, may be reviewed by the Commission pursuant to its broad jurisdiction over matters regarding the safety of public utility operations and facilities. The Commission may decide at that time whether SDG&E's decision to shut off power was reasonable and qualifies for an exemption from liability under SDG&E's Electric Tariff Rule 14.

5. SDG&E should notify the Director of CPSD within 12 hours whenever SDG&E shuts off power because, in part, SDG&E believes that strong winds could cause a structural failure of SDG&E's overhead power-line facilities. After the shut-off event has ended, SDG&E should submit a report to the Director of CPSD that includes the information specified in the body of today's decision.

6. Because this decision affects public safety, this decision should be effective immediately.

## O R D E R

### IT IS ORDERED that:

1. Disability Rights Advocates' petition to modify Decision 09-09-030 is granted. San Diego Gas & Electric Company (SDG&E) shall take appropriate and feasible steps to provide notice and mitigation to its customers whenever SDG&E shuts off power pursuant to its statutory authority.

2. San Diego Gas & Electric Company (SDG&E) shall notify the Director of the Commission's Consumer Protection and Safety Division (CPSD) no later than 12 hours after SDG&E shuts off power because, in part, SDG&E believes that strong winds could cause structural failures of SDG&E's overhead power-line facilities. After the shut-off event has ended, SDG&E shall submit a report to the Director of CPSD that includes (i) an explanation of SDG&E's decision to shut off power; (ii) all factors considered by SDG&E in its decision to shut off power, including wind speed, temperature, humidity, and vegetation moisture in the vicinity of the de-energized circuits; (iii) the time, place, and duration of the power shutoff event; (iv) the number of affected customers, broken down by residential, medical baseline, commercial/industrial, and other; (v) any wind-related damage to SDG&E's overhead power-line facilities in the areas where power is shut off; and (vi) any other matters that SDG&E believes are relevant to the Commission's assessment of the reasonableness of SDG&E's decision to shut off power. SDG&E shall submit the report no later than 10 business days after the shutoff event ends. The report shall be verified by an

SDG&E officer in accordance with Rule 1.11 of the Commission's Rules of Practice and Procedure.

3. Application 08-12-021 is closed.

This Order is effective today.

Dated \_\_\_\_\_, at San Francisco, California.