



Clay Faber
Director – Regulatory Affairs
8330 Century Park Court
San Diego, CA 92123-1548

Tel: 858-654-3563
Fax: 858.654.1788
cfaber@SempraUtilities.com

A.08-12-021
REG 10-12

January 30, 2014

Ms. Denise Tyrrell
Director, Safety and Enforcement Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

SUBJECT: SAN DIEGO GAS & ELECTRIC COMPANY (SDG&E) SHUT-OFF REPORT

Dear Ms. Tyrrell:

In accordance with Ordering Paragraph (OP) 2 of Decision 12-04-024, SDG&E is submitting this report in response to the Power Shutoff Events which occurred in SDG&E's service territory on January 14 and 15, 2014. As noted in the reporting requirements, this report has been verified by an SDG&E officer in accordance with Rule 1.11 of the Commission's Rules of Practice and Procedure.

If you have any questions regarding this report, please contact Wendy Keilani at (858) 654-1185, or at wkeilani@semprautilities.com.

Sincerely,

/s/ Clay Faber
Clay Faber
Director — Regulatory Affairs

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14-15, 2014

The following report is submitted in response to the Power Shutoff Events which occurred in SDG&E's service territory on January 14-15, 2014. SDG&E submits this report to the Director of Safety and Enforcement Division (SED) and includes the following information pursuant to Decision (D.)12-04-024.

The decisions to shut off power for public safety were taken at SDG&E's emergency operations center (EOC), which at the time of the shut-offs described in this report had been fully staffed (including an officer) for a red-flag weather event. The EOC is activated when a Red Flag Warning is declared by the National Weather Service to provide overall event coordination ensuring that Officer-in-Charge receives operational updates, customer communications are initiated, regulatory and governmental notifications are completed and logistical support is provided as needed. The red-flag weather event staffing includes responders from the electric operations group, the customer service group, the external affairs group and selected responders from the business support group.

1. Explanation of SDG&E's decision to shut off power

Response:

The SDG&E Emergency Operations Center was activated at 2 a.m. Tuesday January 14, 2014, following the beginning of the Red Flag Warning declared by the National Weather Service at midnight January 13. This coincided with the period of strongest winds during which a Red Flag Warning was in effect. The Red Flag Warning in combination with available data on fuel moisture content, relative humidity, and 10-minute wind measurements, indicated a potential for large and destructive wildfires should an ignition occur. After closely monitoring system and fire weather conditions, and upon receiving and evaluating data indicating that wind gusts exceeding 60 mph had been experienced for over an hour and would likely continue to occur for several more hours, SDG&E determined that conditions warranted de-energizing certain facilities which might otherwise provide a source of ignition of a fire should a system failure occur.

The decisions for SDG&E to shut power off to one 69kV transmission line (TL 626) including Boulder Creek Substation, and a portion of another distribution circuit (Circuit 79) on January 14 and 15 were made due to extremely high winds and associated fire danger given the extremely low humidity and dry fuel conditions at the time. In each of the two events, SDG&E carefully reviewed the situation and ultimately decided to shut power off out of concern for public safety and system reliability. The salient and material bases for these decisions included:

- Fire conditions were critical throughout the SDG&E service territory, including high winds, low humidity and critically dry fuels
- The Fire Potential Index¹ was elevated and indicated that large fires were possible should ignitions occur
- Recorded wind gusts at Sill Hill confirmed that the forecasts for that area were accurate and therefore wind speeds exceeding 60 MPH were expected to continue for several hours, and did so. Wind gusts generally ranged from 70-80 mph during the evening with a top gust of 88 mph.
- Input from mobile field observers
- Surrounding areas were forecast to and did see winds gusts in excess of 50 mph
- No fire suppression air resources available due to darkness and high winds
- The outages were able to be targeted so as to minimize impacts to customers
- A review of active outages on SDG&E's system

2. All factors considered by SDG&E in its decision to shut off power, including visual observations by pre-positioned and mobile field personnel, wind speed, temperature, humidity, and vegetation moisture in the vicinity of the de-energized circuits.

¹ The Fire Potential Index was created by SDG&E, and takes into consideration wind speed, relative humidity and fuel moisture content. See Attachment 3

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14-15, 2014

Response:

See attachments listed below for the factors considered for each of the two power shutoff events (TL626 and Circuit 79), critical fire weather conditions including wind speed, temperature, humidity and vegetation moisture in the area in which the power was shutoff.

- Attachment 1: Shutoff Re-Energize Documentation TL626
- Attachment 2: Shutoff Re-Energize Documentation Circuit 79
- Attachment 3: SDG&E's Fire Potential Index

3. The time, place, and duration of the power shutoff event.

Response:

- a. Power shut off on January 14, 2014:
 - i. At 2:58 a.m. de-energized 69kV transmission line (TL626) including Boulder Creek substation which de-energized 12 kV circuit 238 impacting 2 meters
 - ii. At 7:35 p.m. de-energized a portion of 12kV circuit 79 impacting 83 meters
 - iii. At 11:04 a.m.. on January 15, 69 kV transmission line (TL626) was re-energized restoring service to Boulder Creek substation and 12 kV circuit 238
 - iv. At 3:06 p.m. on January 15, re-energized portion of 12kV circuit 79 restoring all meters
 - v. Duration 36 hours, 8 minutes
- b. See attachments to item 2 for details on locations affected by the shutoff.

4. The number of affected customers, broken down by residential, medical baseline, commercial/industrial, and other.

Response:

The January 14th shut off event affected customers as follows:

- a. Residential - 14 meters, 13 customers
 - b. Medical Baseline – 0 meters
 - c. Commercial and Industrial – 5 meters, 4 customers
 - d. Other - 0
 - e. Total 19 meters, 17 customers
 - f. Only 1 meter/1 customer was shut off during the early morning hours on January 14th with the remaining 18 meters/16 customers being shut off late afternoon same day.
 - g. None of the meters shut off served medical baseline customers
 - h. Of the five commercial meters that were shut off, two served a State of California facility, two served well pumps and one was active commercial service with zero consumption during recent months.
 - i. 65 customers also experienced a momentary outage during the late afternoon on January 14th as switching took place to isolate the 16 customers that were shut off.
- ### **5. Describe any wind-related damage to SDG&E's overhead power-line facilities in the areas where power is shut off.**

Response:

None reported.

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14-15, 2014

6. Provide a description of the customer notice and any other mitigation provided by SDG&E.

Response:

- a. SDG&E made five separate contact attempts to customers whose power was shut off during the Red Flag Warning and high wind event. Outreach was made via outbound dialer, email, mobile email/text messaging and personal phone calls.
 - b. Although no medical baseline and life support customers were shut off during this event, SDG&E did conduct special outreach to 14 of these customers who reside in areas where high winds were forecasted and shut off was possible. If these customers could not be reached by phone, SDG&E representatives went door-to-door on January 14th to ensure they were notified of the weather and possible effects.
 - c. The attachments listed below contain the text of the notices to each affected customer:
 - Attachment 4: Day Ahead Call 1/12
 - Attachment 5: Day of Call-Overnight Outage Possible 1/13
 - Attachment 6: Day Of Call – Early Warning – Red Flag Warning 1/14
 - Attachment 7: Imminent Shut Off Notice 1/14
 - Attachment 8: Power Restoration Validation 1/15
 - d. General customer communication was launched via SDG&E's website and social media. When the Red Flag Warning went into effect, a "banner" was posted on the sdge.com homepage. The banner included a link to our weather outage page where wind speeds and outages can be monitored by circuit. The banner stayed up until the Red Flag Warning expired. For social media, our Facebook (FB) and Twitter channels were used after the Red Flag Warning was issued. The FB posts and tweets sent varied from providing weather conditions, number of customers affected by outages, and safety tips. In many messages, a link back to our website was included so people could get the most up-to-date wind and outage information.
7. Include 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.

Response:

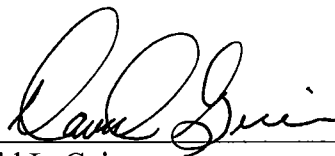
SDG&E's response was targeted to specific circuits that were experiencing conditions that threatened public safety. Very few customers were affected by the temporary loss in power. The customers received prior warning and no medical baseline or other special customer needs were affected.

VERIFICATION

I am an officer of the applicant corporation herein, and am authorized to make this verification on its behalf. I am informed and believe that the matters stated in the foregoing document are true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 29th day of January, 2014, at San Diego, California.

A handwritten signature in black ink, appearing to read "David Geier", written over a horizontal line.

David L. Geier
Vice President, Electric Operations
SAN DIEGO GAS & ELECTRIC COMPANY

8330 Century Park Court
San Diego, CA 92123

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 1

Shutoff Re-Energize Documentation Circuit TL 626

Date and Time: January 14, 2014 at 0301 hrs

Tie Line 626 Sectionalizing Device N/A – De-energized at 0258 hrs – 1 customer, 2 meters affected on circuit 238.

Community Affected: Boulder Creek

Anemometer: Sill Hill

Current Conditions:

Was the fire risk elevated based on SDG&E's Fire Potential Index (FPI)? ☐ No ☒ Yes: Current FPI rating - Elevated

Did the wind gust levels present a safety hazard to the electrical system? ☐ No ☒ Yes: Current wind speed -
Consecutive reads in excess of 56 MPH.

Was the humidity level low increasing fire risk? ☐ No ☒ Yes: Current humidity level - 12

Was the live fuel moisture (LFM) low leading to dry fuel conditions? ☐ No ☒ Yes: current LFM - 62 - 64

Where there sufficient fuels in the area to promote fire growth? ☐ No ☒ Yes: Current fuel type - Chaparral that is
waist high and dense

Air resources available: ☒ No ☐ Yes: Due to high winds and darkness

Observer report

Debris:

Have you observed any debris being carried by the wind? ☒ No ☐ Yes - if so, where

Vegetation:

Have you observed any damage or significant impacts to the vegetation? ☒ No ☐ Yes - if so, where

System:

Have you observed significant conductor/system movement? ☒ No ☐ Yes
if so, where

Active fires? ☐ No ☒ Yes - If so, where: Riverside County

Active Outages? ☐ No ☒ Yes if so, where: There were 3 wind related outages earlier
in the day all have been restored. Clearly there is wind damage occurring.

Comments: Other considerations:

Tie line de-energized due to concerns of circuit 79 breaking loose and contacting tie line
Two consecutive gusts at high wind speeds
Shut off affects one customer on circuit 238 who has a generator

Contributors: Ken Fussell

Date and Time: January 15, 2014, 1115 hrs

Tie Line 626 – re-energized at 1104 hrs. 1 customer restored

Community Affected: Boulder Creek

Anemometer: Sill Hill

Current Conditions:

Where the wind gust levels low enough to safely patrol line and re-energize system? ☐ No ☒ Yes: Current wind speed - 40 MPH.

Air resources available: ☒ No ☐ Yes: Current conditions: too windy to fly

Observer report

Debris:

Have you observed any debris being carried by the wind? ☒ No ☐ Yes - if so, where

Vegetation:

Have you observed any damage or significant impacts to the vegetation? ☒ No ☐ Yes - if so, where

System:

Have you observed significant conductor/system movement? ☒ No ☐ Yes if so, where

Active fires? ☒ No ☐ Yes - If so, where:

Active Outages? ☐ No ☒ Yes if so, where: 1 outage Circuit 79-658 affecting 209 customers.

Other considerations:

- 1) Wind gusts low enough to start ground patrols
- 2) Completed ground patrols at 1105 hrs and found no damage.

Contributors: Ken Fussell

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 2

Shutoff Re-Energize Documentation Circuit 79

Date and Time: 01/14/2014 and 1945 hrs

Circuit 79 Sectionalizing Device 79-673R – De-energized at 19:34 hrs - 18 customers affected.

At 19:34 - OIC Caroline Winn requested to de-energize at Sill Hill

At 19:35 sectionalizing device 79-673R was de-energized, momentarily affecting 83 customers

At 19:36 the temporary switch Z371553 was open, affecting 18 customers

At 19:37 sectionalizing device 79-673R was closed re-energizing 65 of the 83 customers

Communities Affected: Lake Cuyamaca, Boulder Creek, Descanso and Guatay

Anemometer: Sill Hill

Current Conditions

Was the fire risk elevated based on SDG&E's Fire Potential Index (FPI)? ☐ No ☒ Yes:

Current FPI rating - Elevated

Did the wind gust levels present a safety hazard to the electrical system? ☐ No ☒ Yes:

Current wind speed - 74 MPH (see chart of for readings)

Was the humidity level low increasing fire risk? ☐ No ☒ Yes: Current humidity level - 12

Was the live fuel moisture (LFM) low leading to dry fuel conditions? ☐ No ☒ Yes: current LFM - 62 - 64

Where there sufficient fuels in the area to promote fire growth? ☐ No ☒ Yes: Current fuel type - Chaparral that is waist high and dense

Air resources available: ☒ No ☐ Yes: Due to high winds and darkness

Observer report

Debris:

Have you observed any debris being carried by the wind? ☒ No ☐ Yes - if so, where

Vegetation:

Have you observed any damage or significant impacts to the vegetation? ☒ No ☐ Yes - if so, where

System:

Have you observed significant conductor/system movement? ☒ No ☐ Yes
if so, where

Active fires? ☐ No ☒ Yes - If so, where: Riverside County

Active Outages? ☒ No ☐ Yes if so, where: There were 3 wind related outages earlier in the day all have been restored. Clearly there is wind damage occurring.

Other considerations:

Registered Wind Gusts for Sill Hill Anemometer 18:50 – 71 MPH 19:00 – 65 MPH 19:10 – 80 MPH 19:20 – 77 MPH 19:30 – 74 MPH 19:40 – 79 MPH 19:50 – 83 MPH

Customers could be out for as much as 40 hours. Accordingly decisions are taken seriously. Consider observer reports and other factors.

After line was de-energized for safety, winds reach 88 mph

Contributors: Ken Fussell, Maricarmen Corum, Vic Romero, Caroline Winn

Re-Energize Documentation

Date and Time: January 15, 1510 hrs

Circuit 079 - Sectionalizing Device 79-673R – At 1133 hrs, open Intellirupter 79-673R. At 1136 hrs closed temporary switch and Intellirupter 79-673R restoring all but 2 customers. Two fuses were opened to keep 2 communication customers on Cuyamaca Peak de-energized until air patrol can be completed. At 1506 hrs fuses closed restoring service to the two remaining customers.

Communities Affected: Lake Cuyamaca, Boulder Creek, Descanso and Guatay

Anemometer: Sill Hill

Current Conditions

Current Conditions:

Where the wind gust levels low enough to safely patrol line and re-energize system? ☐ No ☒ Yes: Current wind speed - 43 MPH at 11:35 and 33 MPH at 1506

Air resources available: ☐ No ☒ Yes – air resources used to complete patrol of line on Cuyamaca Peak

Observer report

Debris:

Have you observed any debris being carried by the wind? ☒ No ☐ Yes - if so, where

Vegetation:

Have you observed any damage or significant impacts to the vegetation? ☒ No ☐ Yes - if so, where

System:

Have you observed significant conductor/system movement? ☒ No ☐ Yes
if so, where

Active fires? ☒ No ☐ Yes - If so, where:

Active Outages? ☐ No ☒ Yes if so, where: Another portion of Circuit 79 affecting 191 customers

Other considerations:

- 1) Completed patrols for portion of Circuit 79 at 1100 hrs and found no damage.
- 2) Two customers on Cuyamaca Peak that remain out of service have generation
- 3) Complete patrol of line up Cuyamaca Peak using air resources

Contributors: Ken Fussell

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 3

SDG&E's Fire Potential Index

THE FIRE POTENTIAL INDEX

SDG&E has developed a comprehensive assessment, known as the “Fire Potential Index”, which is used as a tool for making operational decisions which would reduce fire threats and risks. This tool converts environmental, statistical and scientific data into an easily understood forecast of the short-term fire threat which could exist for different geographical areas in the SDG&E service territory. The Index is generated for a seven-day forecast period and provides SDG&E personnel and threatened communities time during which they may plan and prepare accordingly.

The FPI is calculated as follows:

$$FPI = WX + \frac{DL}{LFM} + G$$

where WX represents the weather component (rated 0-6), DL represents the GACC's Dryness Level, LFM represents the Live Fuel Moisture of Chamise, and G represents the greenness of the grasses (rated 0-5) as determined by satellite-derived Normalized Difference Vegetation Index (NDVI).

The weather component of the Fire Potential Index represents a combination of sustained wind speeds and dewpoint depression as determined using the following scale:

FPI Weather Component (WX)

Dewpoint/Wind	>5 knots	5 to 9	10 to 15	16 to 19	20 to 24	>24 knots
≥50°F	2	3	3	4	5	6
40°F to 49°F	2	2	3	3	4	5
30°F to 39°F	1	2	2	3	3	4
20°F to 29°F	1	1	2	2	3	3
10°F to 19°F	0	0	1	1	1	1
≤9°F	0	0	0	0	0	0

The Fuels Moisture Component of the Fire Potential Index measures the overall state of potential fuels which could support a wildfire. Values are assigned based on the overall state of available fuels (dead or live) for a fire using the following equation:

$$FMC = \frac{DL}{LFM}$$

Where **FMC** represents “Fuels Moisture Component” in the scale below; and **DL** represents the GACC’s Dryness Level; and **LFM** represents Live Fuel Moisture (percentage).

The product of this equation represents the fuels moisture component that is reflected in the Fire Potential Index as follows:

FPI Fuels Moisture Component (FMC)

Very Wet					Very Dry
1	2	3	4	5	6

The state of native grasses, or “Green-Up Component”, of the Fire Potential Index is determined using satellite-derived Normalized Difference Vegetation Index (NDVI)¹ for various locations. This component is rated on a 0-to-5 scale ranging from very wet (or “lush”) to very dry (or “cured”). The scale is tied to the NDVI, which ranges from 0 to 1,¹ as follows:

FPI Green-Up Component (G)

Very Wet/Lush: ≥ 0.65	0.60 – 0.64	0.55 – 0.59	0.50 – 0.54	0.40 – 0.49	Very Dry/Cured ≤ 0.39
0	1	2	3	4	5

¹ The Normalized Difference Vegetation Index (“NDVI”) is a simple graphical indicator that can be used to analyze remote sensing measurements, typically but not necessarily from a space platform, to assess whether the target area under observation contains live green vegetation or not. More information on the NDVI scale is available at the following address:

http://en.wikipedia.org/wiki/Normalized_Difference_Vegetation_Index, <http://gacc.nifc.gov/oscc/>.

The individual numeric values representing the three variables reflected in the Fire Potential Index, shown above, are combined and placed on the following scale:

Fire Potential Index

Normal	Elevated	Extreme
1 to 11	12 to 14	15 to 17

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 4

Day Ahead Call 1/12

Message Delivered 1-12-2014 - Day Ahead Call

Voice recording

This is SDG&E with an important message. The National Weather Service has indicated they're going to declare a Red Flag Warning for tomorrow. High winds associated with Red Flag Warnings could cause outages or require SDG&E to turn off power for public safety. If outages do occur, the power will stay off until it can be restored safely. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call SDG&E at 1-800-411-7343.

Email

Subject Line: Important from SDG&E; Red Flag Warning could cause outages

The National Weather Service has indicated they will declare a Red Flag Warning for tomorrow. High winds are possible, and could cause outages or require SDG&E to turn off power for public safety. If outages do occur, the power will stay off until it can be restored safely. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call SDG&E at 1-800-411-7343.

Mobile Email

Important message from SDG&E. Red Flag Warning to be declared tomorrow. High winds/power outages possible. Have your emergency plan ready. Call 18004117343.

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 5

Day of Call Overnight Outage Possible 1/13

Message Delivered at 9am 1-14-2014 Red Flag Warning – Day Of Call

Voice Recording

This is SDG&E calling with an important message. The National Weather Service has declared a Red Flag Warning. High winds are possible. Extremely strong winds could cause outages or require SDG&E to turn off power for public safety. If outages do occur, the power will stay off until it can be restored safely. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call SDG&E at 1-800-411-7343.

EMail.

Subject Line: Important from SDG&E; Red Flag Warning could cause outages.

The National Weather Service has declared a Red Flag Warning. High winds are possible. Extremely strong winds could cause outages or require SDG&E to turn off power for public safety. If outages do occur, the power will stay off until it can be restored safely. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call SDG&E at 1-800-411-7343.

Mobile Email.

Important message from SDGE. Red Flag Warning. Outages possible or SDGE may turn off power for public safety. Have emergency plan ready. Call 1-800-411-7343.

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 6

Day of Call – Early Warning – Red Flag Warning 1/14

Message Delivered at 7:30pm Monday January 13th 2014

Voice Recording

This is SDG&E calling with an important message. The National Weather Service has declared a Red Flag Warning. The extremely strong winds expected in your area in the late evening or overnight could likely cause outages or require us to turn off power for public safety. If this is necessary, the power will remain off for as long as it takes our crews to assess any damage to the electrical system and determine when power can be turned on safely. It won't be turned back on until it's safe. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call SDG&E at 1-800-411-7343.

Email

Subject Line: Important from SDG&E. Red Flag Warning could cause outages.

The National Weather Service has declared a Red Flag Warning. Forecasted high winds expected in the late evening or overnight could likely cause outages or require us to turn off power for public safety. If outages do occur, the power will stay off until our crews can assess any damage to the electrical system and determine when power can be restored. It won't be turned back on until it's safe. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call 1-800-411-7343.

Mobile Email

Important Message from SDG&E. Red Flag Warning. Outages possible or SDG&E may turn off power for public safety. Have emergency plan ready. Call 18004117343

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 7

Imminent Shut Off Notice 1/14

Message Delivered 8pm January 14th – Imminent Shut Off Notice

Voice Recording

This is SDG&E calling with an emergency message. Due to current conditions affecting our overhead electrical system, we expect we will have to turn off the power in your area soon for public safety. Power will be off for as long as these conditions last and will not be turned back on until it is safe. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call SDG&E at 1-800-411-7343.

Email

Because of current conditions affecting our overhead electrical system, we expect we will have to turn off the power in your area soon for public safety. Power will be off for as long as these conditions last and will not be turned back on until it is safe. Please be prepared to activate your personal emergency plan. For more information, visit sdge.com or call SDG&E at 1-800-411-7343.

Mobile Email

Urgent message from SDG&E. Power will be turned off soon for public safety and restored when safe. Activate your emergency plan. Info call 1-800-411-7343.

SDG&E Report on Power Shut Off of TL 626/Circuit 79 on January 14 & 15, 2014

Attachment 8

Power Restoration Validation 1/15

Message Delivered at 11:50am 1-15-2014

This is SDG&E calling with an important message. Some areas of the county have experienced strong winds and potentially hazardous conditions. As a result, electrical outages have occurred. We at SDG&E appreciate your patience during this time. Your power should be back on now. If the power is still out, please call us at 1-800-411-7343. You also can get more information at sdge.com.