

**MGRA DATA REQUEST: MGRA-SDG&E-01**  
**R.18-10-007 – SB901 WILDFIRE MITIGATION PLAN OIR**  
**SDG&E RESPONSE**

**Date Received: March 3, 2019**  
**Date Submitted: March 7, 2019**

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Questions 1 through 12 pertain to the length of transmission and distribution circuits in SDG&E's high fire threat district (HFTD) Tier 2 and Tier 3 territory and the degree to which they can be individually monitored and controlled.

**QUESTION 1:**

How many individual distribution and transmission circuits have elements within HFTD Tier 2 and Tier 3 (some portion of the circuit passes through HFTD Tier 2 or Tier 3)? Please specify answers for distribution and transmission circuits separately.

**RESPONSE 1:**

There are 195 distribution circuits and 103 transmission circuits that have elements within SDG&E's HFTD.

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**QUESTION 2:**

What is the current average length in miles of the distribution and transmission circuits specified in question MGRA-1? Please specify answers for distribution and transmission circuits separately.

**RESPONSE 2:**

Based on the information provided in response to Question 1 above, the current average length of a transmission circuit is 13.3 miles and the current average length of a distribution circuit is 40.7 miles.

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**QUESTION 3:**

What is the current median length in miles of the distribution and transmission circuits specified in question MGRA-1? Please specify answers for distribution and transmission circuits separately.

**RESPONSE 3:**

Based on the information provided in response to Question 1 above, the median transmission circuit length is 10.5 miles and the median distribution circuit length is 36.3 miles.

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**QUESTION 4:**

What is the current average length in miles of the top 10% longest distribution and transmission circuits specified in question MGRA-1? Please specify answers for distribution and transmission circuits separately.

**RESPONSE 4:**

Based on the information provided in response to Question 1 above, the average length of the top 10% longest transmission circuits is 40.7 miles and the average length of the top 10% longest distribution circuits is 108.5 miles.

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**QUESTION 5:**

How many circuits specified in MGRA-1 are planned for resectionalization into smaller circuit segments in 2019 and 2020 time frame? What will be the average segment length before and after such modifications, if any are planned?

**RESPONSE 5:**

SDG&E currently has 501 remote sectionalizing devices installed on the 195 distribution circuits specified in response to Question 1 above, an average of 2.57 devices per distribution circuit. This creates a current average segment length of 11.6 miles.

In addition, SDG&E has installed SCADA sectionalizing devices on distribution circuits at the border of the HFTD, to limit the impact of recloser settings changes or the Public Safety Power Shutoff (PSPS) program to customers in the highest fire threat areas should real-time fire threat conditions require it.

As part of its Wildfire Mitigation Plan (WMP), SDG&E is evaluating locations for sectionalizing devices and based upon the results of the analysis, SDG&E plans to install additional units in 2019 and 2020.

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**QUESTION 6:**

What are longer term plans for circuit division into smaller segments for the 2020-2025 time frame?

**RESPONSE 6:**

SDG&E plans to continue to install additional sectionalizing devices from 2020-2023 as part of its Fire Threat Advanced System Protection (FTZAP) program. See Section 4.3.15 of SDG&E's WMP. SDG&E will continue to evaluate opportunities to reduce the impacts of its PSPS program through additional sectionalizing from 2020-2025.

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**QUESTION 7:**

How many of the circuits specified in MGRA-1 can currently be remotely de-energized or re-energized via SCADA? Please specify answers for distribution and transmission circuits separately.

**RESPONSE 7:**

All 195 distribution circuits specified in response to Question 1 above can be de-energized or re-energized remotely via supervisory control and data acquisition (SCADA).

101 of the 103 transmission circuits specified in response to Question 1 above can be de-energized or re-energized remotely via SCADA.

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**QUESTION 8:**

How many of the circuits specified in MGRA-1 will have capability to be remotely de-energized or re-energized via SCADA after 2019-2020 work is completed? Please specify answers for distribution and transmission circuits separately, and include any new circuits created by sectionalization of existing circuits.

**RESPONSE 8:**

As stated in the response to Question 7 above, all distribution circuits currently have the ability to be de-energized or re-energized remotely via SCADA.

All transmission circuits will have this capability after 2020.

SDG&E currently has no plans to create new circuits with the new SCADA sectionalizing installations. The new installations proposed in SDG&E's WMP for 2019-2020 are to further sectionalize existing circuits, to enable the advanced protection program, and for customer impact mitigation associated with the PSPS Engineering Enhancements program. See SDG&E's WMP at page 39, Section 4.3.18.



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**QUESTION 9:**

How many of the circuits specified in MGRA-1 can currently reset recloser settings via SCADA? Please specify answers for distribution and transmission circuits separately.

**RESPONSE 9:**

All circuits 195 distribution circuits specified in response to Question 1 above have SCADA enabled devices that can have recloser settings adjusted remotely.

101 of the 103 transmission circuits specified in response to Question 1 above have SCADA enabled devices that can have recloser settings adjusted remotely.

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**QUESTION 10:**

How many of the circuits specified in MGRA-1 will have capability to reset recloser settings via SCADA after 2019-2020 work is completed? Please specify answers for distribution and transmission circuits separately, and include any new circuits created by sectionalization of existing circuits.

**RESPONSE 10:**

As stated in the response to Question 9 above, all distribution circuits specified in response to Question 1 above have SCADA enabled devices that allow for the remote modification of recloser settings and sensitive relay settings.

After 2020, all transmission circuits will have this capability as well.

SDG&E currently has no plans to create new circuits with the new SCADA sectionalizing installations. The new installations proposed in SDG&E's WMP for 2019-2020 are to further sectionalize existing circuits, to enable the advanced protection program, and for customer impact mitigation associated with the PSPS Engineering Enhancements program. See SDG&E's WMP at page 39, Section 4.3.18.

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**QUESTION 11:**

How many of the circuits specified in MGRA-1 have a weather station within ¼ mile of some portion of the circuit? Please specify answers for distribution and transmission circuits separately.

**RESPONSE 11:**

There are weather stations within ¼ mile of 94 distribution circuits and 63 transmission tie lines specified in response to Question 1 above within SDG&E's High Fire Threat District.

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**QUESTION 12:**

How many of the circuits specified in MGRA-1 will have a weather station within 1/4 mile of some portion of the circuit after 2019-2020 work is completed? Please specify answers for distribution and transmission circuits separately, and include any new circuits created by sectionalization of existing circuits.

**RESPONSE 12:**

After 2019-2020 work SDG&E proposed in its WMP is completed, weather stations will be within ¼ mile of 112 distribution circuits and 68 transmission tie lines specified in response to Question 1 above within SDG&E's High Fire Threat District.

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**QUESTION 13:**

What tree species are regarded to be “at risk” or “reliability” trees in the utility service area? If this is a long list, restrict to the top ten most likely to be associated with outages.

**RESPONSE 13:**

SDG&E considers any species to be an “at risk” or “reliability” tree if it poses a threat to the powerlines because it is dead, diseased, dying or structurally defective. For the purpose of this response, SDG&E provides the following list of top five species most likely to be “at risk” or “reliability” trees based on the frequency of outages: Eucalyptus, Palm, Pine, Oak, and Sycamore.

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**QUESTION 14:**

Please give the fraction of total vegetation-caused outages are caused by fall-in of “at risk” or “reliability” tree species, by top ten species if available, averaging over the past five years. Provide the same for vegetation-caused ignitions. Restrict analyses to cases where the tree and all limbs were outside of the 12 foot trim zone. Also provide the total fraction of the same species within the utility tree database if available.

**RESPONSE 14:**

The following table represents the top five species with the highest frequency of outages for the past five years where the tree and limbs were outside the 12-foot trim zone.

<b>Species</b>	<b>Percentage of total outages</b>	<b>Percentage of ignitions</b>	<b>Percentage of inventory</b>
Eucalyptus	15.5	.07	15.7
Palm	2.8	0	9.8
Pine	2.8	0	6.5
Oak	1.7	.03	17.8
Sycamore	1.0	0	1.3

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**QUESTION 15:**

Are all trees of “at risk” or “reliability” species within the “strike zone” of utility equipment planned for trimming or removal? If arborist discretion is to be used, what factors will be used to determine which trees will be trimmed or removed, and what approximate fraction of “at risk” or “reliability” tree species will be trimmed or removed as enhanced vegetation management is implemented?

**RESPONSE 15:**

All trees that SDG&E has identified to be “at risk” or “reliability” that fit the criteria of dead, diseased, dying or structurally defective during the most recent inspection are planned to be trimmed or removed within the scheduled tree operations. The discretionary factors that are applied to determine whether a tree is trimmed or removed may include: 1) where the defect is located on the tree; 2) how much of the tree requires work to abate the hazard; 3) the remaining structural integrity of the tree; 4) safety of the tree worker; 5) customer preference; 6) environmental impact. It is estimated that approximately 90% of enhanced vegetation management will involve trimming and 10% will involve removals.

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**QUESTION 16:**

What fraction of outages from “at risk” or “reliability” tree fall-ins occur during 1) winter storms or rain storms? 2) high-wind events during dry periods, including fire-weather events 3) dry periods with no wind? This can be an approximate estimation using calendar periods to estimate “wet” and “dry” seasons. High wind designations should be based on weather data.

**RESPONSE 16:**

The following table lists the percentage of “at risk” or “reliability” tree fall-ins during storm events and non-storm events during the previous 5 years.

Winter / Rain Storms	High-Wind / Dry	No Wind / Dry
42.6	6.0	31.8



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**QUESTION 17:**

How many instances of outages due to vegetation contact or fall-in occurred over the last five years for circuits using covered conductor or “tree wire”? How many ignitions? What is the rate per deployed mile of vegetation-caused outages and vegetation-caused ignitions for covered conductor? How does this compare to bare conductor?

**RESPONSE 17:**

Currently, SDG&E has over 5 miles of covered conductor installed in its service territory and 5 miles of tree wire installations. SDG&E is not aware of any instances of tree-related outages or ignitions involving covered conductor or “tree wire” over the last five years.