

TURN DATA REQUEST-025
SDG&E-SOCALGAS 2019 GRC – A.17-11-007/8
SDG&E_SOCALGAS RESPONSE
DATE RECEIVED: MARCH 6, 2018
DATE RESPONDED: APRIL 2, 2018

1. Regarding Pole Replacement and Reinforcement, (budget code 87232):

a. Please explain the relationship between this program and the proposed PRiME project (budget code 17254A). For example, is it reasonable to expect that the PRiME project would eventually supplant (in whole or in part) investment in this program? If not, why not? What is the difference between the programs? How will PRiME affect the Pole Replacement and Reinforcement budget?

b. Has SDG&E's forecast for Pole Replacement and Reinforcement (budget code 87232) for 2019, 2020 or 2021 for this GRC been adjusted or modified in any way to reflect the impact of the proposed PRiME project (budget code 17254A)? If so, please identify by page number where such adjustment appears in SDG&E's testimony and workpapers, and describe the adjustment. If not, why not?

c. For poles replaced under Pole Replacement and Reinforcement, please provide in Excel the total number of poles replaced on an annual basis from 2012-2017, as well as the cost recorded each year.

d. For poles reinforced under Pole Replacement and Reinforcement, please provide in Excel the total number of poles reinforced on an annual basis from 2012-2017, as well as the cost recorded each year.

Utility Response 01:

- a. Budgets 87232 and 17254 are separate programs with different drivers; the 87232 budget is the longstanding budget under which poles are replaced for a variety of reasons primarily as a result of routine inspections such as those conducted under GO165. The PRiME program specifically targets poles for evaluation of structural integrity using new technology and analysis such as LiDAR and PLS-CADD. Impacts to other programs are not currently known, and may be ascertained in part under the PRiME pilot program. The 2018 PRiME pilot phase of 1600 poles in 2018 will allow SDG&E to achieve a higher confidence level to verify pole failure rates, assist in program forecasting and to understand how the PRiME program will impact other SDG&E programs.
- b. Impacts to other programs will be identified and adjusted if needed post PRiME's 2018 pilot program.

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c.

d.

Year	Number of Poles Replaced	Replacement Cost
2012	804	\$ 15,988,689
2013	1142	\$ 24,604,354
2014	1156	\$ 23,649,813
2015	1088	\$ 23,864,998
2016	931	\$ 26,071,956
2017	991	\$ 21,275,888

Year	Number of Poles Reinforced	Reinforcement Cost
2012	1010	\$ 804,708
2013	1811	\$ 1,711,853
2014	1241	\$ 1,137,576
2015	1339	\$ 1,213,947
2016	1080	\$ 946,366
2017	805	\$ 346,441

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2. Does budget category 87232 include either replacement or reinforcement costs associated with poles located in fire threat zones? If so;

a. Please provide in Excel the recorded costs and number of poles in fire threat zones that were replaced or reinforced (separately stated) in each year from 2012-2017, inclusive. Please also identify the costs and number of poles that are included in the forecasts for replacements and reinforcements (separately stated) for 2017-2019 in this GRC.

b. On an annual basis from 2012-2017, please provide in Excel the number of poles and total cost (in nominal and constant 2016 dollars) of replacing and reinforcing poles (separately stated) in SDG&E's "highest risk fire areas." For purposes of this response, please define "highest risk fire areas" consistent with how SDG&E used the term in its response to TURN-SEU-003, question 43, part (c).

c. Please explain the difference between the definition of "fire threat zone" and the definition of "highest risk fire areas" (see part 'f' of this question) as used by SDG&E in its testimony and DR responses in this GRC.

Utility Response 02:

- a. We do not have the data separated with respect to the fire threat zones. We do have data separated with respect to the highest risk fire areas, which is in 2b.
- b. Please see accompanying file, tab Question 2, "SDGE-TURN DR-025".

SDG&E Highest Risk Fire Area (HRFA): These areas were identified by SDG&E Fire Coordination and SDG&E Meteorology using CAL FIRE Fuel ranking, fire history information, and high wind zones determined by publicly available wind speed data. Operating restrictions may apply in these areas whenever SDG&E has determined a potential for large or greater fires exists, or a Red Flag Warning.

- c. The primary difference between SDG&E HRFA and Fire Threat Zone (FTZ) is that the HRFA area takes into account CAL FIRE Fuel ranking, past fire history, and high wind zones. Whereas SDG&E FTZ focuses on the information derived from the CA Department of Forestry and Fire Protection's Fire and Resource Assessment Program Fire Threat Map.

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3. For poles for which costs are recorded in budget category 87232, please provide in Excel the annual cost (in nominal and constant 2016 dollars) and number of poles for each year from 2012-2017 for each of the following activities:

- a. Pole reinforcement;
- b. Pole rearrangement;
- c. Wood to steel replacement;
- d. Wood to fiberglass replacement;
- e. Wood to wood replacement;
- f. Any other major categories not listed.

Utility Response 03:

Please see accompanying file, tab Question 3, “SDGE-TURN DR-025” for responses to questions 3a-3f.

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4. For poles for which costs are recorded in budget category 87232, please provide the percentage of poles replaced of the total inspected on an annual basis from 2012-2017. Please provide all workpapers in Excel, assumptions, and sources related to this response.

Utility Response 04:

Year	Number of Poles Replaced	Number of OH Inspections	Percentage of poles replaced
2012	804	43,151	1.9%
2013	1,142	43,779	2.6%
2014	1,156	47,715	2.4%
2015	1,088	47,862	2.3%
2016	931	46,982	2.0%
2017	991	41,470	2.4%

Please reference TURN-025 question 5 part a for a standard inspection procedure and variables factored into the need for replacement.

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5. Regarding SDG&E's Corrective Maintenance Program (CMP) (budget code 229):

a. Please explain the relationship between this program and the proposed PRiME project (budget code 17254A). For example, will the PRiME budget eventually supplant (in whole or in part) investment in this program? What is the difference between the programs? How will PRiME affect the Corrective Maintenance Program budget or activities?

b. Please provide a definition and the type of work performed under "Wood Pole Integrity" (SDG&E-14-CWP AColton, p. 182).

c. Please provide a list of activities conducted under the Corrective

Maintenance Program related to overhead poles. For each activity, please provide in Excel the annual recorded costs (in nominal and constant 2016 dollars) and the number of units from 2012-2017.

d. If not previously provided please provide the number of poles replaced under this budget code and corresponding total cost (in nominal and constant 2016 dollars) on an annual basis from 2012-2017.

Utility Response 05:

- a. SDG&E evaluates all overhead and underground facilities in the service territory on an annual, 3-year, 5-year, and 10-year cycle as defined by our Corrective Maintenance Program (CMP) to meet GO 95 and 165 requirements. The CPUC's Safety and Enforcement Division (SED) audits this program annually. As conditions are found through the visual and intrusive inspection process, repairs or replacements are made to within one year on the inspection per the filed CMP plan.

The visual and intrusive inspections processes are still critical for compliance with general orders and the safety of the public and employees. They detect safety issues such as broken cross arms, missing ground molding, loose guy wires and anchors, cracked insulators, corrosion, leaking transformers, rotten poles, and many more issues that need to be identified and repaired. However, a visual inspection is limited by only seeing environmental (wind, heat) and loading (amps on the conductor that impacts conductor temperature sag and tension) conditions at the time of the inspection, it is very much a snapshot in time. The PRiME program is being established to utilize new known local condition wind data gathered from SDG&E's fleet of anemometers and new 3-D modeling software that goes beyond the capability of a visual inspections, allowing for an analysis of the structure at for potential wind and conductor loading conditions, including worst case conditions.

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Utility Response 05:-Continued-

The CMP plan addresses compliance with all applicable general orders while PRiME will go further to mitigate the risks of a structure failure by analyzing structural performance under more environmental and loading conditions.

- b. The wood pole intrusive inspection is an investigation of the soundness of the pole. The crew digs around the butt of the pole below ground looking for decay. The crew performs a sounding test by hammering on the butt of the pole, listening for hollowness. The crew also drills into the pole below ground, at grade and 18” to 24” above ground looking for decay (they inspect the consistency of the chips) and treating the pole with a product that is designed to prevent any possible decay occurring within the treated areas.
- c. Please see accompanying file, tab Question 5, “SDGE-TURN DR-025”.
- d. Pole replacements are not included in budget 229.

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6. In response to TURN-SEU-003, question 43, part (b), SDG&E states “The unit cost to replace a pole from 2012-2016 vary based on the complexity of the work. Approximately \$25,000 per pole was used based on similar construction activities.”

- a. Please provide all workpapers, historical data, and assumptions that justify the \$25,000 per pole estimate.
- b. Is \$25,000 SDG&E’s estimate for wood to steel pole replacement or something else? Please explain, including but not limited to what the \$25,000 unit cost represents.

Utility Response 06:

- a. SDG&E cost estimates of \$25,000 per pole utilizes prior year actual costs and quantities to estimate a representative unit cost. The actual cost per pole may vary from the estimated average owing to the unique configuration of each pole, its attachments, location and associated equipment.
- b. \$25,000 is the approximate cost for a pole replacement. As stated in TURN-025 question 6 part a, these costs vary depending on project type and associated equipment.

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7. If not provided previously, please provide the unit cost of pole rearrangement from 2012-2016 on an annual basis. Please include all supporting historical data (at a minimum, annual costs and number of poles) and supporting workpapers.

Utility Response 07:

Year	Poles Rearranged	Unit Cost
2012	no data	no data
2013	no data	no data
2014	8	\$ 4,226
2015	60	\$ 3,625
2016	87	\$ 6,894

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8. In TURN-SEU-003, question 43, part (b), TURN asked for the unit costs of pole replacement in each year 2012-2016. SDG&E’s response states, “The unit cost to replace a pole from 2012-2016 vary based on the complexity of the work. Approximately \$25,000 per pole was used based on similar construction activities.”

- a. Please provide for each year 2012-2016, inclusive, the unit costs SDG&E considered in developing its \$25,000 per pole unit cost for this GRC. Please provide all supporting workpapers related to this response.
- b. Please describe in detail the range of “construction activities” for pole replacements, and the subset of those activities that SDG&E deemed “similar construction activities” for purposes of developing its unit cost.

Utility Response 08:

- a. Please reference TURN-025 question 6 part a.
- b. Construction activities vary based on the work being performed on the pole. Construction activities associated with a pole replacement may include, but are not limited to, the replacement of some or or all electrical apparatus on the pole, insulator change outs, cross arm replacements and associated work depending on the field and environmental conditions in and around the pole.

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9. In response to TURN-SEU-003, question 43, part (c), SDG&E states “SDG&E will ramp from 1600 poles in 2018 to 22,600 poles in 2019 in order to ensure SDG&E can complete pole analysis within SDG&E’s Fire Threat Zone/Highest Risk Fire Areas by 2021....Number of poles to be replaced and/or analyzed was determined as a result of data collected from SDG&E’s CMP program.”

- a. Please provide the total number of poles in SDG&E’s “fire threat zone.”
- b. Please provide a definition of “highest risk fire areas.”
- c. Is the map included as Appendix F of SDG&E-14-R the most recent map of what SDG&E considers its “Fire Threat Zone/Highest Risk Fire Areas?” If not, please provide the most recent map.
- d. Has the map that appears as Appendix F of SDG&E-14-\$ been approved or adopted by the Commission in the Fire Safety Rulemaking proceeding (R.15-05-006) or in any other proceeding? If so, please identify with specificity (document and page number) each proceeding in which the Commission has approved or adopted the map of “Fire Threat Zone/Highest Risk Fire Areas” for SDG&E. If the Commission has adopted a different “fire threat” map for SDG&E, please indicate and explain the differences between the Commission-adopted map and SDG&E’s, if any.
- e. Please provide the data, an explanation, and all supporting workpapers in Excel referenced from “SDG&E’s CMP program” that determined “number of poles to be replaced” as that term appears in the response (referencing the response to subsection (g)).
- f. Please explain why the CMP program was used rather than the pole replacement/reinforcement program (budget code 87232) to determine the number of poles to be “replaced and/or analyzed.”

Utility Response 09:

- a. The total number of wood distribution poles within the FTZ is approximately 68,000.
- b. Highest Risk Fire Areas are areas where, compared to other areas within SDG&E’s service territory, fire potential is highest.

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- c. Yes, the map in Appendix F is the most recent. However, the CPUC has adopted a new statewide map which illustrates the fire zones, Tier 2 and Tier 3. This will replace SDG&E Fire Threat Zone/ Highest Fire Risk Area. CPUC Decision 17-12-024 issued 12/21/2017.
- d. See TURN-025 question 9 part c.
- e. SDG&E used the following methodology to determine pole counts for the years 2018 and 2019. The pilot phase of 1600 poles will allow SDG&E to achieve a higher confidence level to verify pole failure rates to further assist in project forecasting. SDG&E will ramp from 1600 poles in 2018 to 22,600 poles in 2019 in order to ensure SDG&E can complete pole analysis within SDG&E's Fire Threat Zone/Highest Risk Fire Areas by 2021. PRiME used CMP Program failure rates to estimate the average number of poles to be replaced versus rearranged within a specified number of poles. The 2018 pilot of 1,600 poles will achieve a higher confidence level based on the scope of the PRiME Program that will allow SDG&E to achieve a higher level of confidence in the area of pole failure rates.
- f. The CMP program is the program which governs our routine inspection and maintenance program in conformance to GO165. Through our inspection process, some poles are identified to be replaced or reinforced for a variety of reasons including internal loss of structural integrity, damage at the groundline, badly leaning or ground erosion, excessive checking or cracking. SDG&E utilizes budget code 87232 to fund those pole replacement jobs.

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10. In response to TURN-SEU-003, question 43, part (d), SDG&E provided “analysis” and “construction” cost estimates for 2017-2019. For each category separately, please provide on an annual basis in Excel all supporting workpapers, data, and calculations that were used to determine the figures provided.

Utility Response 10:

Capital Cost Details	2017 (0 Poles)	2018 (1600 Poles)	2019 (22,600 Poles)
Analysis and PM	\$270,000	\$1,609,832	\$5,684,831
Construction	\$0	\$2,792,000	\$34,587,000
SDG&E PM Support	\$0	\$180,000	\$180,000
Total GRC	\$270,000	\$4,581,832	\$40,451,831

The 2018 pilot phase consisting of 1,600 poles will allow SDG&E to achieve a higher confidence level to verify pole failure rates and cost in an effort to further assist in project forecasting. Cost data was determined by using average costs based on other SDG&E programs for each activity required to meet the specific task e.g., pole analysis, pole replacement, or pole rearrangement.

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11. SDG&E's response to TURN-SEU-003, question 43, part (g), shows the number of poles SDG&E proposes to analyze, replace, and rearrange from 2017-2019 separately. Please provide all supporting workpapers, data, calculations, assumptions, and an explanation for how each of the figures in this response was derived.

Utility Response 11:

SDG&E used the following methodology to determine the number of poles to be evaluated for the years 2017, 2018 and 2019. Determining the program scope was the focus of 2017, therefore no poles were identified to be addressed in 2017. The pilot phase of 1,600 poles in 2018 will allow SDG&E to achieve a higher confidence level to verify pole failure rates to further assist in program forecasting and to understand how the PRiME program will impact other SDG&E programs. SDG&E will ramp from 1,600 poles in 2018 to 22,600 poles in 2019 in order to ensure SDG&E can complete pole analysis within SDG&E's Fire Threat Zone/Highest Risk Fire Areas by 2021. The estimated number of poles to be replaced and/or rearranged was determined as a result of data collected from SDG&E's CMP program. Cost data was determined by using average costs based on other SDG&E programs for each activity required to meet the specific task e.g., pole analysis, pole replacement, or pole rearrangement.

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12. Please identify each budget code SDG&E uses for recording costs of replacing distribution poles. For each such code, please state the number of poles replaced and the total costs of the replacements for each year from 2012 through 2017. To the extent SDG&E replaced poles with poles of material other than wood, please break out the information for each budget code by the type of replacement pole.

Utility Response 12:

All poles that were replaced as a result of a CMP inspection utilize budget 87232. Please see accompanying file, tab Question 12, “SDGE-TURN DR-025” for the number of poles replaced and the total costs of the replacements.