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ZELLER-SDG&E-DR-001
SDG&E 2019 GRC – A.17-10-007
SDG&E RESPONSE
DATE RECEIVED: DECEMBER 13, 2017
DATE RESPONDED: JANUARY 3, 2017

Subject: Questions regarding Ex. 14

1. Are any of the expenses associated with SDG&E's RAMP program connected to its recent Wood-to-Steel application for transmission lines in or in the vicinity of the Cleveland National Forest? If the answer to this question is yes, please identify the specific projects involved and the expenses associated with these projects.

SDG&E Response 1:

SDG&E objects to this request to the extent that it is vaguely worded and assumes facts that do not exist. Subject to and without waiving this objection, SDG&E responds as follows: RAMP is the Commission's newly established Risk Assessment Mitigation Phase of the GRC process, and is not an SDG&E program. The testimony of Jamie York (SDG&E-02, Chapter 3) describes the process used to integrate RAMP into SDG&E's GRC application. Capital project costs that support RAMP risk mitigation are shown in Appendix C of the Direct Testimony of Alan F. Colton. Budget code 8165 (Cleveland National Forest Power Line Replacement Projects) is part of the RAMP total shown in section SDG&E-1 Wildfires Caused by SDG&E Equipment.

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2. On page 6 it states that extensive use of Falling Conductor Protection ("FCP") is 70% effective when an FCP operates. How did SDG&E develop this estimate? Were any analytical studies performed to derive it? If so, please attach copies of the studies.

SDG&E Response 2:

In an attempt to quantify its effectiveness, SDG&E compared its limitations against similar, proven protection systems and included additional FCP limitations and considerations to warrant a lower effectiveness in identifying a wire down, as follows:

1) FCP only detects when there is a break in the conductor. That is, one of the three phase wires needs to be broken, it will not detect when the entire line is down for example when an entire pole is broken with the wires laying on the ground
2) The FCP system relies on high speed communication to be in place to transmit the synchrophasor data to a centralized processor to run algorithms to detect the broken conductor. A break in communication at the inopportune time may result in the failure to detect or failure to isolate a wire down.
3) FCP cannot detect a break in neutral conductors
4) FCP programming for each circuit is dependent on the topology of the circuit and must be disabled during routine switching and remained disabled when the system is in an abnormal configuration.
5) Finally, SDG&E's FCP technology is new and has yet to be proven, leading to additional conservatism with regards to effectiveness. Despite proven 100% effective in a lab environment, unknowns like operating conditions, system conditions, instrument transformer limitations, and actual electrical quantities produced by a broken conductor may produce unforeseen results.

Given these considerations, SDG&E applied a conservative effectiveness estimate of 70%.

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3. On page 8 the testimony states that high threshold projects that have approval need to go through a second review process with the Technical Review Committee. A) What is the dollar value of this threshold? B) Over the past three years what proportion of the projects that SDG&E has approved, and have been subject to the TRC process have ultimately been approved by SDG&E?

SDG&E Response 3:

a. The dollar threshold for projects that go through the Technical Review Committee (TRC) is $1,000,000.

b. SDG&E does not track the proportion of projects that are approved, modified, or rejected after TRC review.

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4. On page 9 the testimony references a "Technical Review Committee" that it characterizes as being an independent council of technical experts that includes personnel from various divisions of SDG&E. A) In what sense is this committee independent? B) Does it include any non-employee representatives that represent consumer interests?

SDG&E Response 4:

a. Personnel from various divisions within SDG&E make up the Technical Review Committee, including Engineering, Regulatory, Distribution Planning, and Environmental. Personnel include Electrical Engineers, Environmental Specialist, Protection Engineers, Planning Engineers and Project Managers. The committee is independent in that the personnel on the committee represent divisions independent from the department requesting approval of the project, which prevents biased decision making, from a corporate governance standpoint.

b. No.

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5. On page 10 the testimony references a prioritization method that uses a model known as the Wildfire Risk Reduction Model (WRRM). A) How much did it cost SDG&E to develop this model? B) How often is this model updated? C) Does this model allow SDG&E to simulate non-traditional methods of service delivery in rural territories such as microgrids –something SDG&E currently uses to deliver service to Borrego Springs?

SDG&E Response 5:

a. SDG&E has spent approximately $500,000 in direct consulting costs to develop and maintain the WRRM. SDG&E operating costs to develop and maintain the model are not separately tracked.

b. There are several components of the WRRM model that are updated periodically: (1) asset database, (2) asset failure rates, (3) fire modeling theory and governing equations, and (4) software maintenance and user-interface.

1. Asset Database: Updated May 2016, expected update in 2018
2. Asset Failure Rates: Annually
3. Fire Modeling Theory and Governing Equations: Infrequent
4. Software Maintenance and UI: Annually

c. No, WRRM is a risk model to support identification and prioritization of asset replacement to mitigate the risk of wildfire threat.

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6. On page 12 the testimony references are made to the role of the ET&D committee in establishing priorities for capital spending projects. The testimony states that priority is given to projects where equipment loadings exceed 85 -100% of capacity as having priority. A) For any of the proposed projects in this category were demand-side management alternatives considered as an alternative, e.g., time-of-use rates or interruptible tariff service offerings? If yes, provide detailed information about the analysis that was performed. B) If the analysis determines that a given circuit has highly loaded equipment, what percentage of the time is this high level of loading occurring? C) Has SDG&E considered the installation of distributed generation or batteries in some of the locales where high loading is a problem? If yes, provide information about these projects including nature of the analysis performed, projected cost, and impediments to implementation.

SDG&E Response 6:

a. No, demand-side management was not considered as an alternative.
b. High level loading is typically found to occur during summer and fall months and follows the typical daily load peak.
c. An analysis of a DER alternatives were performed to provide capacity support and reliability throughout the year. However, this analysis concluded that a DER was neither feasible nor practical in this situation due to cost, lack of reliability support, and viable locations. For example, all capacity projects were evaluated against a battery installation as a means to defer the project. None of the battery solutions resulted in being cost effective in the long term to mitigate the capacity deficiency along with providing the reliability performance, when comparing to the traditional project. In addition, identifying, acquiring and utilizing land and the associated construction duration were other factors that impeded the implementation.

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7. On Page 16 SDG&E proposes to increase its expenditures on capacity/expansion by approximately 90%, and more than doubles its proposed expenditures on OH Pools and Safety and Risk Management. A) Is it SDG&E's contention that it has not spent an adequate amount of money in these areas over the past 3 years? B) Why is it appropriate to propose such a rapid increase in expenditures—far beyond the anticipated rate of inflation? C) Does SDG&E anticipate a heightened level of risk exposure over the next few years as the rationale for these proposed expenditures? If yes, please provide a copy of any studies or analyses demonstrating this risk.

SDG&E Response 7:

a. No. Rather, the increase is associated with the amount of construction forecasted to be necessary to complete the anticipated needs for new customers, facility upgrades and replacements, technology improvements and risk reduction efforts, as described in testimony.

b. SDG&E proposes projects based off its estimated work requirements, as stated above and in testimony. Expenditures in SDG&E's TY 2019 GRC electric distribution capital request are forecasted based on the estimated project in service dates.

c. The capital testimony within SDG&E-14 breaks out the costs associated with Risk Assessment Mitigation Phase (RAMP) driven projects that increase safety by reducing risk exposure. While risk mitigation has long been part of SDG&E's core business activities, this GRC is the first in which SDG&E has added more specific detail regarding its costs in support of mitigation activities addressing SDG&E's top safety risks. See the "Risks Assessment Mitigation Phase and Safety Culture" section starting on page AFC-4. SDG&E has submitted for individual capital projects corresponding to RAMP risks as shown in Appendix C, page ACF-C-1. Additional testimony regarding SDG&E's risk mitigation efforts and RAMP showing is found in Exhibit SDG&E-02, Chapter 1 (Risk Management and Policy), Chapter 2 (Enterprise Risk Management Organization), and Chapter 3 (RAMP to GRC Integration).

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8. SDG&E anticipates customer and load growth in its service territory and (p. 17) and uses this forecast as a justification for some of its proposed capital projects. A) What was SDG&E's experience during the recession of 2008-2010 with regard to load and customer growth? B) Did customer and load growth during those years match SDG&E's forecasts? C) What was the annual customer growth and load growth during those years? D) If the economy entered into a recession in 2019, how would that likely affect customer and load growth (assuming unemployment doubled above current levels)?

SDG&E Response 8:
SDG&E objects to this request under Rule 10.1 of the Commission's Rules of Practice and Procedure, to the extent it calls for speculation and seeks the production of information that is neither relevant to the subject matter involved in the pending proceeding nor is likely reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving this objection, SDG&E responds as follows. Please refer to the testimony of Kenneth Schiermeyer (SDG&E-38) and workpapers for information regarding customer growth during the 2008-2010 time period. With respect to load growth:

a. System load is highly dependent upon system peak weather conditions. Weather normalized load growth calculations require several variables to incorporate (temperature during the summer, if peak occurs on the weekday or weekend, new load connected, etc.). Using the measured system peak during the three years requested, SDG&E recorded a load increase.
b. No.
c. When utilizing the recorded system peak to determine the load growth, an average of 3.9% increase was calculated.
d. SDG&E does not speculate on the likelihood of a future recession and effect on load and customer growth.

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9. On Page 19, SDG&E's discussion of its planning process states that distributed generation is assumed to not be available during peak periods for worst-case scenario situations (G-1 method).
   a) does SDG&E have any operational experience that supports the notion that all large distribution generation will be unavailable during peak periods?
   b) is the G-1 method mandated by the CAISO or any other external body?
   c) since distributed generation is produced by a variety of sources including (fossil and renewable) why is it reasonable to assume none will be available during peak periods?
   d) is all of SDG&E-owned or contracted generation assumed to available in peak periods?
   e) SDG&E has the ability to develop tariff provisions requiring a certain level of generation will be available during peak periods. Why wasn't this alternative explored as an alternative to the G-1 assumption?
   f) SDG&E has extensive experience in contracting with independent generators for its electric service—does SDG&E control the generators it contracts with, or does it simply rely on contract provisions that ensure generation will be available during peak periods?
   G) How much does the G-1 assumption contribute to SDG&E's estimates of its anticipated necessary capital expenditures for the test year?

SDG&E Response 9:
SDG&E objects to this request under Rule 10.1 of the Commission's Rules of Practice and Procedure, to the extent that it is vague, broadly worded, misstates facts, assumes facts not within SDG&E's knowledge and/or calls for speculation and it seeks the production of information that is neither relevant to the subject matter involved in the pending proceeding nor is likely reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving these objections, SDG&E responds as follows.

a. No, the G-1 method does not remove all large distribution generation. In developing the forecast, each circuit will have only one generation source removed to determine the forecast. If a circuit has two large distribution generation units, only one will be removed.
b. The G-1 is not mandated by the CAISO or any other external body.
c. Please refer to SDG&E's response to part a.
d. No, they are also considered during the analysis and generation units are removed in the same manner as non-utility owned generation sources.
e. Tariff provisions requiring levels of generation do not preclude outages from occurring.
f. Generation scheduling is controlled by the California Independent System Operator, or CAISO. It is not controlled by SDG&E.
g. The G-1 method correlates to approximately $1,609K of capital spend.

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10. Pg. 22 discusses overload conditions that justify certain capital expenditures.

A) Over the past three years how many times has SDG&E experienced overload conditions that necessitate these types of expenditures?

B) Please provide a project by project analysis of these conditions and the capital expenses associated with them

SDG&E Response 10:

a. The budget described on page 22 is related to the '228' budget. This budget is used for projects pertaining to forecasted and actual overload mitigations. Actual overloaded conditions that resulted in projects on this budget over the past three years was two.

b. The two projects that were created as a result of an actual overload were both a cable replacement on the main feeder of the distribution circuits affected. The first of these projects had an actual measured overload of 2% and the second of these projects had an actual measured overload of 1%. The direct costs for these projects were $110K and $10K, respectively.

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11. On page 58 SDG&E forecasts a large increase in underground residential new business for 2019. Please provide a detailed forecast of residential customer growth that justifies a 74% increase in these expenditures.

SDG&E Response 11:
SoCalGas/SDG&E objects to this request on the grounds that it is vague, overly broad, misstates facts and assumes facts that do not exist. Subject to and without waiving this objection, SDG&E responds as follows: SDG&E's electric customer forecast is provided in Exhibit SDG&E-38. As explained in further detail in Mr. Colton's testimony at AFC-57, the new business budgeting process is based on the construction unit forecast, an in-depth assessment that combines data on permit activity and the most current outlook on housing and land development, presented by a variety of economic forecasting entities. "Construction units" are derived primarily from building permits filed with local governments, not directly on customer growth forecasts. Customer growth is indicated by the setting of new meters (meter sets), as well as customers becoming active again. The actual construction of new circuits and services must necessarily precede the placement of new meters and so the new business construction forecast does not correlate directly to customer growth. The actual percentage increase to the forecast of underground residential new business estimates shown in Table AFC-9 from 2017 to 2019 is 34%, not 74%.

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12. If an economic recession hit during the test year, how would this affect the need for new underground distribution systems assuming unemployment increased to 8%?

SDG&E Response 12:

SDG&E objects to this request under Rule 10.1 of the Commission's Rules of Practice and Procedure as it calls for speculation. Subject to and without waiving this objection, SDG&E has not speculated regarding this analysis.

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13. A) How do LiDAR and PLS-CADD affect the projected level of capital expenditures for local engineering electric distribution pool and local engineering substation pools? (see pgs. 69-70). B) Why do "industry trends" increasing the use of detailing engineering studies or designs lead to higher capital expenditures? C) Why is it inappropriate for SDG&E to rely on standards in developing its cost estimates for these areas?

SDG&E Response 13:

a. Distribution design has historically been standards and codes-based and has only in recent years incorporated LiDAR and PLS-CADD to account for site-specific data. The use of LiDAR and PLS-CADD site-specific data has led to increased use and reliance of detailed engineering and design on the distribution system. As an example, rather than designing only for established and standard wind zone criteria under general industry practice, designs are now utilizing the more conservative of either the established standard wind zone criteria or the wind speed data that is now available and is more specific to each site. This increased use and reliance on detailed engineering and design on the distribution system (and decreased reliance on "standards-based" system design) has led to increased facility designs and expenditures in overhead pools.

b. Previously, when a new facility or new electrical infrastructure was needed, an engineering "standards" book could be referenced to guide in the engineering decision making for suitable design and construction of facilitates. More recently, in addition to the "standards" book, detailed engineering utilizing site-specific and generally more conservative data is being considered for new facilities and for rebuilding electric infrastructure due to the increased focus on risk reduction and regulatory changes.

c. SDG&E objects to this request to the extent that it misstates facts and is vague and unintelligible. Subject to and without waiving this objection, SDG&E responds as follows: It is appropriate for SDG&E to base its projected level of capital expenditures for local engineering electric distribution pool and local engineering substation pools on its expected workload. As stated above, detailed engineering utilizing site specific data is being utilized for new facilities and for rebuilding electric infrastructure. This increased need for reliance on detailed engineering and design on the distribution system (and decreased reliance on "standards-based" system design) has led to estimates that do not rely on standards to assist in facility designs and expenditures.

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14. Pg. 84 Will the forecasted removal of 4 kV substations from service during 2017-2019 reduce SDG&E's labor costs on an on-going basis? If yes, where are these cost reductions reflected in SDG&E's application?

SDG&E Response 14:

The forecasted removal of 4kV substations will not reduce SDG&E's labor costs on an ongoing basis. While there is approximately one 4kV substations slated for removal per year between 2017-2019, there are also several new substations that are being placed in service (Salt Creek, Vine, Ocean Ranch) during this time period. SDG&E has not requested additional funding for the ongoing labor costs associated with these new substations, as these costs will be in part offset by the 4kV removals.

SDG&E used a five-year historical cost average to forecast future expenditures for Substation Construction and Operations. This methodology is expected to capture any reductions in the actual costs, which will be incorporated into future average estimates.