TURN DATA REQUEST
TURN-SDG&E-DR-13
SDG&E 2016 GRC – A.14-11-003
SDG&E RESPONSE
DATE RECEIVED: MAY 26, 2015
DATE RESPONDED: JUNE 16, 2015

1. In Tab A of the Excel spreadsheet included in the response to question 8a from TURN-SDG&E-DR-05, SDG&E provided historical peak load, capacity of equipment, and percentage of peak load data for equipment in SDG&E's GRC distribution capital expenditure estimate (SDG&E-09, witness Jenkins). Please provide the following clarifications to the data:
    a. The "capacity of equipment" cable capacities are provided in "A" units.
        i. What does "A" stand for?
        ii. Please provide the capacity of these circuits in kilowatts (kW) and identify the conversion factor used.
    b. Please provide a qualitative description of how "percentage of peak load forecasted" (beginning in row 41 of the spreadsheet in Tab A) is calculated in each year and identify how solar distributed generation capacity on a substation/circuit is factored in to the calculation. What year solar distributed generation capacity is used for the 2014, 2015, and 2016 percentage of peak load calculations?
    c. Please provide a quantitative example, identifying each input, of how "percentage of peak load forecasted" (beginning in row 41 of Tab A) is calculated in each year and identify how solar distributed generation capacity on a substation/circuit is factored in to the calculation. If forecasts are used please provide the source of these forecasts.
    d. In the calculation of "percentage of peak load forecasted" is 2013 solar distributed generation on each circuit/substation added to the peak load forecast for years 2014, 2015, and 2016? Please explain how the capacity of solar distributed generation is calculated or forecasted for each year's percentage. Please provide all sources of information.
    e. Please provide the calculation and all inputs of the "peak load forecasted" calculation for 2014-2016 in Excel format for each of the following projects: Salt Creek Substation project, the Mira Sorrento Substation project, and the C917, CC: New 12kV Circuit project. For example, one of the substations for the Mira Sorrento project is called "North City West." The Excel spreadsheet provided shows this substation reaching 99% of capacity in 2014. Please provide all of the inputs and data used to derive the 99% and how they are used to calculate the percentage. The response to this question, should, at a minimum, show the amount and derivation of solar distributed generation in the calculation of each percentage.

SDG&E Response:

a.

i. The "A" unit used to describe the values within the "capacity of equipment" is one of seven International System of Units (SI) of

Response to Question 1 (Continued)

measurement from which all other SI units are derived. The "A" is the SI unit symbol for Ampere, the unit of measurement of electric current.

ii. Response is located on the attached excel spreadsheet TURN-SDG&E-13 Q1a_1e_3b Responses.xlsx, under tab 1.a

b. The "percentage of peak load forecasted" is calculated in multiple steps. The first step entails capturing the actual measured peak on the circuit/substation and then

adding the kilowatts, megawatts or amps of distribution generation on the circuit/substation. Once this peak is established, the next step is to apply the normalized weather factor. The annual growth, any specific load additions and planned transfers are then added to the new established value. Finally, the adverse weather factor is applied to determine the forecast peak for the specific year. The forecast peak is then divided by the rating of the circuit/substation to produce the "percentage load forecasted." The following year's forecast is established by using the result from the previous year, after the normalized weather factor was applied, as the base and then adding the existing annual growth, specific load addition and planned transfers for that year, and the adverse weather factor. Each year SDG&E forecasts ten years out. If forecasting for 2014 and future years, then the nameplate of 2013 solar distribution generation is used for 2014 and prior years.

c. The "percentage of peak load forecasted" was calculated using the variables below:
   i. Actual measured peak for the circuit/substation = M; nameplate rating of the total distribution generation connected to the circuit/substation = G; normalized weather factor = N; adverse weather factor = A; total annual growth, specific load addition and planned transfers = T; circuit/substation capacity rating = R
      i. Percentage forecast peak formula :

$$= \frac{\left[\left[\left((M + G) \times N\right) + T\right] \times A\right]}{R}$$

d. Yes, the 2013 solar distributed generation on each circuit/substation is added to the peak for the 2014, 2015 and 2016 forecast years. The solar distribution generation is calculated by the summation of the rated nameplate for each solar distribution generation connected to the circuit/substation and is not forecasted for each year.

e. Response is located on the attached excel spreadsheet TURN-SDG&E-13 Q1a_1e_3b Responses.xlsx, under tab 1.e.

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2. In SDG&E-09 (Jenkins), p. JDJ-30, beginning on line 17, the testimony describes the "Mira Sorrento 138/12kV Substation project." This project is comprised of the "North City West," "Mesa Rim," "Genesee," and "Torrey Pines" substations. Assume for purposes of these questions that the "North City West" and "Mesa Rim" substations did **not** have projected overloads and did **not** need to be upgraded or replaced. Under these assumptions, what portion of the total project's costs (totaling $12,218,000 shown on p. JDJ-27, SDG&E-09) could be eliminated?
    a. Please list a dollar ($) and percentage (%) of the total project's costs ($12,218,000) amount that would be eliminated in this scenario.
    b. Please list the pieces of equipment and related costs that would be eliminated in this scenario.

SDG&E Response:

SDG&E objects to the question as vague; notwithstanding this objection, SDG&E responds as follows: SDG&E has not performed an analysis of this type and therefore cannot provide the requested analysis.

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3. SDG&E's response to question 8c from TURN-SDG&E-DR-05 summarizes historical distributed solar generation capacity for distribution projects. The capacity of solar generation on circuits has the unit "A."
    a. What does "A" stand for?
    b. Please provide the capacity of solar distributed generation on all circuits in the referenced table in kilowatts (kW) and identify the conversion factor used.

SDG&E Response:

a. The "A" unit to describe the values within the "distribution solar generation" is one of seven International System of Units (SI) of measurement from which all other SI units are derived. The "A" is the SI unit symbol for Ampere, the unit of measurement of electric current.

b. Response is located on the attached excel spreadsheet TURN-SDG&E-13 Q1a_1e_3b Responses.xlsx, under tab 3.b

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4. What percentage of circuits in SDG&E's system has primarily commercial/industrial customers and what percentage primarily residential customers? Please provide supporting workpapers and calculations. TURN defines "primarily" as more than 50% of annual load. If SDG&E defines "primarily" differently, please include an explanation of its definition and the basis for that definition.

SDG&E Response:

SDG&E is not required to create new studies, reports or analyses beyond what already exists or is contained in testimony and workpapers. SDG&E does provide a document[1] and workpaper[2] that was previously prepared containing information responsive to this data request, however was established using 2009 – 2011 data. The document uses the same assumption described by TURN when defining "primarily" and states on page 3 "44% of the circuits were classified as being residential".

Analysis_Proposal-Allocation_of_DeferredDist_20130130.docx
CircuitPeaksReviewedWithCons-ClimZn-Zip.final.xlsx

[1] Analysis_Proposal-Allocation_of_DeferredDist_20130130.docx
[2] CircuitPeaksReviewedWithCons-ClimZn-Zip.final.xlsx

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5. What percentage of SDG&E's circuits experience an annual peak (either generally or in 2014) prior to 5:00 p.m.? If SDG&E does not know an exact percentage, please provide a reasonable estimate of the percentage of circuits that peak before 5:00 p.m.

SDG&E Response:

SDG&E is not required to create new studies, reports or analyses beyond what already exists or is contained in testimony and workpapers. SDG&E does provide a document[3] and workpaper[4] that was previously prepared containing information responsive to this data request, however was established using 2009 – 2011 data. The document states on page 2, "32% occurred after 5:00 pm". If recent data was compiled the percentage would increase, because since 2011 SDG&E solar distribution generation profile has increased.

[3] Analysis_Proposal-Allocation_of_DeferredDist_20130130.docx
[4] CircuitPeaksReviewedWithCons-ClimZn-Zip.final.xlsx

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6. SDG&E's response to question 8b from TURN-SDG&E-DR-05 provided forecasted load on equipment in SDG&E's GRC estimate of distribution capital expenditure. In Tab B of the Excel attachment in SDG&E's response, Circuits "C1223" and "C912" are forecasted to reach 78% and 83% of their capacity in 2016 and 2014 respectively. Please explain in detail why each of these circuits requires capital expenditure when it is below 90% of equipment loading?

SDG&E Response:

Each project requires minor capital expenditures to offload the circuit in question. Circuit 1223 out of the Telegraph Canyon substation is located in an area with growth as a result of the Eastern Urbanizing Center, and offloading this circuit will add additional capacity as well as tie capacity, as stated in SDG&E-09 (Jenkins), p.JDJ-33. Similarly, with circuit 912, capital expenditures are needed for necessary tie capacity for the new circuit, thus strengthening reliability service to the customers, as stated in SDG&E-09 (Jenkins), p.JDJ-38.