ORA DATA REQUEST
ORA-SDG&E-DR-04
SDG&E SB 350 TRANSPORTATION ELECTRIFICATION PROPOSALS (A.17-01-020)
SDG&E RESPONSE
DATE RECEIVED: May 16, 2017
DATE RESPONDED: May 30, 2017

INSTRUCTIONS

You are instructed to answer the following Data Requests in the above-captioned proceeding, with written, verified responses per Public Utilities Code §§ 309.5 and 314, and Rules 1.1 and 10.1 of the California Public Utilities Commission's Rules of Practice and Procedure. Restate the text of each request prior to providing the response. For any questions, email the ORA contact(s) above with a copy to the ORA attorney.

Each Data Request is continuing in nature. Provide your response as it becomes available, but no later than the due date noted above. If you are unable to provide a response by this date, notify ORA as soon as possible, with a written explanation as to why the response date cannot be met and a best estimate of when the information can be provided. If you acquire additional information after providing an answer to any request, you must supplement your response following the receipt of such additional information.

Identify the person providing the answer to each data request and his/her contact information. Responses should be provided both in the original electronic format, if available, and in hard copy. (If available in Word format, send the Word document and do not send the information as a PDF file.) All electronic documents submitted in response to this data request should be in readable, downloadable, printable, and searchable formats, unless use of such formats is infeasible. Each page should be numbered. If any of your answers refer to or reflect calculations, provide a copy of the supporting electronic files that were used to derive such calculations, such as Excel-compatible spreadsheets or computer programs, with data and formulas intact and functioning. Documents produced in response to the data requests should be Bates-numbered, and indexed if voluminous. Responses to data requests that refer to or incorporate documents should identify the particular documents referenced by Bates-numbers or Bates-range.

If a request, definition, or an instruction, is unclear, notify ORA as soon as possible. In any event, answer the request to the fullest extent possible, specifying the reason for your inability to answer the remaining portion of the Data Request.

DATA REQUEST

1. The attachment "ORA_SDGE_DR_02 – Q5A1 (Confidential)_ORA" compares the *annual* coincident peak for each circuit (column T) to the sum of all customers' annual non-coincident peak (NCP) demands on the same circuit and in the same month that the annual coincident peak demand occurred (column U). Please note that both the workpapers "ORA_SDGE_DR_02 – Q5A1 (Confidential)_ORA" and "ORA_SDGE_DR_02 - Q5B (Confidential)_ORA" must be open at the same time for the formulas to work. However, for roughly 29% of the data (1 – cell W1002) the sum of all customers' NCP demands is *lower* than the circuit's coincident peak demand – which should not be possible. Please provide an

explanation of how this occurred. Please also correct the errors that led to this mistake and provide the corrected workpapers.

SDG&E Response (prepared by Cynthia Fang):

The sum of all customers' NCP demands may be lower that the circuit's coincident peak demand due to below circumstances:

- Circuit's coincident peak demands are registered as the maximum hourly demand (for consistency given that almost all customers have hourly data). This is different from the NCP demands as this demand can be adjusted due to ratcheting or standby contracts.
- Some customers do not have registered demands, such as lighting customers and customers with meter reading errors. Therefore, they would not be included in the sum of all customers' NCP demand, but included in the circuit's coincident peak demand.
- "Circuit ID" and "Equipment ID" are not always the same thing. "Circuit ID", used for the sum of all customers' NCP demands, treats step-down transformers as substations and all 4 kV circuits as their own circuits. For example, "Equipment ID" 1438 should correspond to "Circuit ID" 1438 and WA01, WA04, and WA06 added together.
- Load transfers from another circuit can occur when another circuit is experiencing temporary maintenance outage or forced outage.
- The third month in the sum of all customers' NCP demand data is for the year 2016 and the third month in the circuit coincident peak demand data is for the year 2017.

2. Please explain the conversion from column F to G in "ORA_SDGE_DR_02 – Q5B." Please describe each of the terms in the formula in column G.

SDG&E Response (prepared by Cynthia Fang):

The formula used to convert from column F "ACTUAL_MAX_PHASE_AMP" to column G "KW" for an AC three phase system is derived from Joule's Law and Ohm's Law establishing P = I * V * Sqrt(3) * PF formula. This formula is a common industry wide formula used often to convert from KW to Amps for a three phase system. The "P" term in the formula is the kilo-watt (kW), the "I" term is the amperage measured in amps, the "V" term is the nominal voltage in kilo-volts (KV) of the circuit, the "Sqrt(3)" term is the square root of 3 to convert to a three-phase system and the "PF" term is the power factor.

3. For each of the following 20 randomly selected circuits, please provide the *Number of customers* and the *Date* and *Time* of the top 200 circuit peak hours in 2016. It is not

necessary to provide the loads, only the date and time for the top 200 hours (as well as total no. of customers):

a. 70
b. 145
c. 168
d. 176
e. 197
f. 203
g. 754
h. 783
i. 901
j. 941
k. 973
l. 992
m. 1100
n. 1180
o. CS01
p. CS01
q. CS02
r. HB05
s. MO01
t. OH01

SDG&E Response (prepared by Cynthia Fang):

Please see attached "ORA_SDGE_DR_04 – Q3". Please note that we had randomly selected and added circuit "0592" in the attachment instead of circuit "CS01" which was selected twice in the list above.

4. Please provide the *date* and *time* of the top 150 system peak hours for the same year used to answer question #3.

SDG&E Response (prepared by Cynthia Fang):

Please see attached "ORA_SDGE_DR_04 – Q4".

5. Please provide the number of electric vehicle (EV) customers on each of SDG&E's commercial rate schedules.

SDG&E Response (prepared by Randy Schimka):

As of May 1, 2017, SDG&E has 280 residential customers signed up for the EV-TOU rate. In addition, SDG&E has 9,211 residential customers signed up for the EV-TOU2 rate. These two residential rates require customers to own a DMV-registered EV when signing up. SDG&E's commercial rate schedules don't require EV ownership to sign up, therefore, SDG&E doesn't collect EV ownership information for those rates.

6. Please perform bill impacts analyses comparing EV customers' bills under the EV rate schedules listed below, including SDG&E's proposed grid integration rates (GIR). The analysis should present the *average annual bill* of EV customers (where "annual bill" is the sum of all monthly bills in a year) under various existing rate schedules and under the GIR *in years 1 and 5*, as well as the % of the average GIR bill that is made up of the grid integration charge (GIC) and the total annual usage (kWh) of the average bill. Please use the most recent available year of data.

    a. For residential, please compare the average annual bill of *all EV-TOU-2 customers* under the following rate schedules and SDG&E's Residential GIR. Please display the results in the following format:

Residential - Average Annual Bill Under Various Residential EV Rate Schedules

Current DR	Current EV-TOU-2	New EV Rate Option Proposed in A.15-04-012[1]	Proposed Residential GIR (Year 1)	% of GIR Bill Comprising GIC	Proposed Residential GIR (Year 5)	% of GIR Bill Comprising GIC	Avg. Annual Usage (kWh)

[1] February 9th 2016, Prepared Direct Testimony of Christopher Swartz on behalf of San Diego Gas & Electric Company in Support of Second Amended Application Chapter 2, CS-51.

SDG&E Response (prepared by Cynthia Fang):

Based on our May 25, 2017 call, we are providing the "TURN_SDGE DR_01 Q14 Bill Calculator.xlsm" file, which is available at the link below:

https://www.sdge.com/regulatory-filing/20491/application-sdge-authority-implement-priority-review-and-standard-review

[Data Responses > TURN > TURN-DR-01 (with attachments) > TURN_SDGE DR_01 Q14 Bill Calculator.xlsm]

b. For the small commercial class, please compare the average annual bill of all small commercial EV customers under the following rate schedules, including the Commercial GIR for years 1 and 5. Please display the results in the following format.

Small Commercial - Average Annual Bill Under Various Rate Schedules

Current AL-TOU	Proposed Commercial GIR (Year 1)	% of GIR Bill Comprising GIC	Proposed Commercial GIR (Year 5)	% of GIR Comprising GIC	Avg. Annual Usage (kWh)

SDG&E Response (prepared by Cynthia Fang):

Based on our May 25, 2017 call, this question (6b) was retracted by ORA.

c. For the M/L commercial class, please compare the average annual bill of all M/L commercial EV customers under the following rate schedules, including SDG&E's proposed Commercial GIR rate for years 1 and 5. Please make sure to include the M/L commercial rate schedule that currently has the most EV customers (see column 1). If this schedule is TOU-A, there is no need to include column 1.

M/L Commercial - Average Annual Bill Under Various Rate Schedules

M/L Comm. Rate Schedule with the	Current TOU-A	Proposed Commercial GIR (Year 1)	% of GIR Bill Comprising GIC	Proposed Commercial GIR (Year 5)	% of GIR Bill Comprising GIC	Avg. Annual Usage (kWh)

Most EV Customers						

SDG&E Response (prepared by Cynthia Fang):

Based on our May 25, 2017 call, this question (6c) was retracted by ORA.

END OF REQUEST