ORA DATA REQUEST
ORA-SDGE-135-MRK
SDG&E 2019 GRC – A.17-10-007
SDG&E RESPONSE
DATE RECEIVED: FEBRUARY 15, 2018
DATE RESPONDED: MARCH 2, 2018

Exhibit Reference: SDG&E-38, page KES-1
SDG&E Witness: Kenneth E. Schiermeyer
Subject: Electric Customer Forecast

Please provide the following:

1. In response to data request ORA-SDG&E-100-MRK Q.1, SDG&E sent the spreadsheet "DR ORA-SDG&E-100 Q1Attachment_SDG&E-38-WP WithFormulasAnnualTab.xlsx" which included a new Excel tab labeled "Annual," with the annual summaries as requested. In response to data request ORA-SDG&E-108-MRK Q.2, SDG&E stated that "All of the variables are being forecasted since they are all driven by formulas in the forecast period. However, the only concept that is derived from a regression model is NewDRDRLI-SD."
The tab "ResRegandFcastQ" contains a regression results summary in cells A1:I22. It also contains the forecasted quarterly values for NewDRDRLI-SD for the period 2017 to 2019. ORA interprets SDG&E's statement in the following way: (a) The forecasted quarterly values of NewDRDRLI-SD for the period 2017 to 2019 are based on the coefficients of the regression results displayed in cells A1:I22. (b) These coefficients are not used anywhere else in the spreadsheet named above.

Are the statements (a) and (b) true? If either of these statements is not true, please explain in detail why. In particular if (b) is not true,

SDG&E Response 01:

ORA's interpretation of SDG&E's statements in Question 1.a and 1.b is correct: (a) Correct. The reference to the regression coefficients can be seen in the Excel formula in cells F135:F148 (the 2017-2019 forecast period) on tab 'RegRegAndFcastQ', which is highlighted and in bold font. (b) Correct. The only place in the Excel workbook these coefficients are referenced are in cells F135:F148 on tab 'RegRegAndFcastQ', as mentioned above in part (a).

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2. ORA had previously hypothesized that if (a) and (b) were true then any hard coded change (be it addition or subtraction) in any one of the forecast quarterly values NewDRDRLI-SD for the period 2017 to 2019 would be reflected by an equal change in the final residential customer forecast. ORA tested this hypothesis by modifying the last quarterly value of NewDRDRLI-SD in tab "ResRegandFcastQ" of "DR ORASDG& E-100 Q1Attachment_SDG&E-38-WP WithFormulasAnnualTab.xlsx" from 3,182 to a hard coded value of 5,000, i.e., instituting an upward change of 1,818. It found that the average of cells Y87:Y98 (Column Y=Residential) in the modified spreadsheet now yields the average number of total residential customers to be 1,305,222, as opposed to SEMPRA's estimated total residential customers listed in Table KES-1 as 1,304,891. The difference of the two numbers is 331.

a. Can SDG&E please explain how 1,818 went to 313, and if this diminution should have happened?

ORA conducted more comparisons, assuming that the dependent variable represented quarterly customer increments, so that 1,818 represents the difference in the last quarterly customer increment between SEMPRA's original data and the modified data. Therefore ORA compared the change in customer increments as well: The average change in customer increments for the last three months of 2019 was 664.

b. Can SDG&E please explain how 1,818 went to 664 and if this diminution should have happened?

SDG&E Response 02:

There are a few items that were not factored into ORA's "test hypothesis," and as a result, an incorrect conclusion was reached. SDG&E provides the explanation below, focused on the residential forecast, to demonstrate why.

On tab 'ResRegAndFcastQ', cell F148, ORA changed the calculated/forecasted value of NewDRDRLI-SD from its original value of 3,182 to a hard-coded 5,000, an increase of 1,818. However, ORA's above-mentioned increase only applies to the 4th quarter of 2019, and only for DRDRLI-SD. On the spreadsheet, please note which forecast values change (as they should), and which values do not change (as they should not), because of ORA's hard-coded change. In other words, changing cell F148 will only change values on row 148, so the previous 3 quarters of 2019 did not change.

By only changing 2019 Q4's net customer additions, the first 3 quarters of 2019 should not (and did not) change. This is the major reason why ORA's conclusion is incorrect. Only December 2019's DRDRLI-SD monthly forecast will change by the 1,818 difference that ORA mentions. October and November will change by a fraction of this difference since those months are interpolated, and January-September will not change at all. Therefore, the difference in the average of the January-December's monthly residential values will be noticeably smaller than the difference imposed on December's value alone.

The second reason why ORA's conclusion is incorrect, is that it did not incorporate the small addition associated with DRDRLI-OC customers (column P). The following tables will help in

understanding ORA's incorrect conclusion(s). (Note: the data provided in Table 2a is included in the Electric Customer Forecast workpapers, Exhibit SDG&E-38-WP; Table 2b represents ORA's hypothetical adjustments to Exhibit SDG&E-38-WP.)

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Table 2a:

Original Forecast								
Year	**Mon**	**DRDRLI-SD(1)**	**DRDRLI-OC(2)**	**EV(3)**	**DM(4)**	**DS(5)**	**DT(6)**	**TOTAL RES(7)**
2019	Jan	1,182,342	112,441	249	3,504	234	436	1,299,205
2019	Feb	1,183,272	112,494	249	3,500	234	436	1,300,184
2019	Mar	1,184,201	112,548	249	3,496	234	436	1,301,164
2019	Apr	1,185,124	112,601	249	3,492	234	436	1,302,136
2019	May	1,186,047	112,653	249	3,488	234	436	1,303,107
2019	Jun	1,186,971	112,706	249	3,484	234	436	1,304,079
2019	Jul	1,188,078	112,777	249	3,480	234	436	1,305,253
2019	Aug	1,189,185	112,847	249	3,476	234	436	1,306,426
2019	Sep	1,190,293	112,917	249	3,472	234	436	1,307,600
2019	Oct	1,191,353	112,983	249	3,468	234	436	1,308,722
2019	Nov	1,192,414	113,048	249	3,464	234	436	1,309,845
2019	Dec	1,193,475	113,114	249	3,460	234	436	1,310,967
2019	**AVG**	**1,187,730**	**112,761**	**249**	**3,482**	**234**	**436**	**1,304,891**

Table 2b:

ORA's 'Test Forecast' with an Assumed 5,000 DRDRLI-SD 2019Q4 Net Additions								
Year	**Mon**	**DRDRLI-SD(1)**	**DRDRLI-OC(2)**	**EV(3)**	**DM(4)**	**DS(5)**	**DT(6)**	**TOTAL RES(7)**
2019	Jan	1,182,342	112,441	249	3,504	234	436	1,299,205
2019	Feb	1,183,272	112,494	249	3,500	234	436	1,300,184
2019	Mar	1,184,201	112,548	249	3,496	234	436	1,301,164
2019	Apr	1,185,124	112,601	249	3,492	234	436	1,302,136
2019	May	1,186,047	112,653	249	3,488	234	436	1,303,107
2019	Jun	1,186,971	112,706	249	3,484	234	436	1,304,079
2019	Jul	1,188,078	112,777	249	3,480	234	436	1,305,253
2019	Aug	1,189,185	112,847	249	3,476	234	436	1,306,426
2019	Sep	1,190,293	112,917	249	3,472	234	436	1,307,600
2019	Oct	1,191,959	113,040	249	3,468	234	436	1,309,386
2019	Nov	1,193,626	113,163	249	3,464	234	436	1,311,172
2019	Dec	1,195,293	113,286	249	3,460	234	436	1,312,957
2019	**AVG**	**1,188,033**	**112,789**	**249**	**3,482**	**234**	**436**	**1,305,222**

(1) See column M on 'ResRegAndFcastQ' for quarter-ending values and column H on 'ResRegFcastM' for monthly
(2) See column P on 'ResRegAndFcastQ' for quarter-ending values and column J on 'ResRegFcastM' for monthly
(3) See column AI on 'M-Cust(HistAndFcast)' tab
(4) See column E on 'M-Cust(HistAndFcast)' tab
(5) See column F on 'M-Cust(HistAndFcast)' tab
(6) See column H on 'M-Cust(HistAndFcast)' tab
(7) See column Y on 'M-Cust(HistAndFcast)' tab

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With respect to Table 2a and Table 2b, please note the following:

a) The 'Original Forecast' had an assumed DRDRLI-SD 4th quarter customer gain of 3,182, or as shown in Table 2a, December's 1,193,475 less September's 1,190,293.

b) ORA's 'Test Forecast' had an assumed DRDRLI-SD 4th quarter customer gain of 5,000, or as shown in Table 2b, December's 1,195,293 less September's 1,190,293.

c) As ORA 'hypothesized,' the difference between December's DRDRLI-SD customers is 1,818 (Table 2b's 1,195,293 vs Table 2a's 1,193,475), but this is the only month/column where this difference is applicable. Given that DRDRLI-SD customers (San Diego County) were 1,818 higher due to the assumed increased housing activity, the small portion of Orange County customers that SDG&E serves (DRDRLI-OC) were also forecasted to increase, by 172 in December 2019 (Table 2b's 113,286 vs Table 2a's 113,114). As mentioned in prior data requests, in particular ORA-SDGE-108-MRK, the regression relates to San Diego County (SD), and the small portion of Orange County (OC) that SDG&E serves is added, to obtain total SDG&E customers for DRDRLI.

d) The primary reason as to why the 'Test Forecast' proposed by ORA "yields the average number of total residential customers to be 1,305,222, as opposed to SDG&E's estimated total residential customers listed in Table KES-1 as 1,304,891" is simply that the 12 months are averaged (of which the first 9 months did not change, and October-November changed by a fraction of December's); hence, the difference is noticeably smaller for the annual average than it is for December's (year-end) value.

e) To further clarify ORA's concern regarding the differences between ORA's 'Test Forecast' and SDG&E's 'Original,' the following are the differences in 'forecasts' at year-end:

DRDRLI-SD Year-End:	1,195,293 vs	1,193,475, or a difference of	1,818
DRDRLI-OC Year-End:	113,286 vs	113,114, or a difference of	172
EV, DM, DS, DT Year-End:	4,378 vs	4,378, or a difference of	0
TOTAL RES Year-End:	1,312,957 vs	1,310,967, or a difference of	1,990

and the following are the differences in 'forecasts' on an annual average basis:

DRDRLI-SD Average:	1,188,033 vs	1,187,730, or a difference of	303
DRDRLI-OC Average:	112,789 vs	112,761, or a difference of	28
EV, DM, DS, DT Average:	4,400 vs	4,400, or a difference of	0
TOTAL RES Average:	1,305,222 vs	1,304,891, or a difference of	331

In response to the second part of this question, much of the same logic applies. That is, one must account for the difference between year-end (or quarter-end) values, vs. annual average (or quarterly average) values, and again, also account for the small Orange County portion.

As mentioned above, and as indicated in the Excel spreadsheet, yes, the 1,818 quarterly difference ORA references relates to the regression's dependent variable, but that is for DRDRLI-SD

customers only. To calculate total residential customers, one must add DRDRLI-OC, EV, DM, DS, and DT customers as shown in Table 2a, for example.

In Table 2b (ORA's Test Forecast), the Q4 gain in DRDRLI-SD customers is 5,000 (1,195,295 less 1,190,293), while the corresponding gain in Table 2a (Original Forecast) is 3,182 (1,193,475 less 1,190,293), and as ORA mentions, the difference in these two customer-gain 'forecasts' is 1,818 (5,000 less 3,182). However, this difference of 1,818 is for DRDRLI-SD only.

To properly evaluate total residential customers gains, the same calculations should be applied to the 'TOTAL-RES' column in Table 2a and Table 2b. In Table 2b, the Q4 gain in TOTAL-RES customers is 5,357 (1,312,957 less 1,307,600), while the corresponding gain in Table 2a is 3,367 (1,310,967 less 1,307,600), and the difference in these two customer-gain 'forecasts' is 1,990 (5,357 less 3,367). This difference of 1,990 (as opposed to 1,818) relates to total residential customers (as opposed to DRDRLI-SD).

ORA’s reference in Question 2.b is unclear: "Can SDG&E please explain how 1,818 went to 664 and if this diminution should have happened?" Notwithstanding this ambiguity, SDG&E responds as follows: Most likely, ORA should be referencing a quarterly difference of 1,990 (not 1,818), and that would translate to a corresponding difference in average monthly gains of 663 (or 1990 divided by 3 months), which, due to rounding, is what ORA's 664 represents.

Another way to look at this is that ORA's 'Test Forecast' has a total residential Q4 gain of 5,357, or 1,786 per month. The "Original Forecast" has a total residential Q4 gain of 3,367, or 1,122 per month. The difference in monthly net additions is therefore, 1,786 - 1,122 = 664.

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3. Did SDG&E clarify what the variable NewDRDRLI-SD represented in any of the documentation given to ORA?
Note: In response to data request ORA-SDG&E-53-MRK Q.1, SDG&E wrote that "In tab 'M-Cust(HistAndFcast),' you will notice, for example, the average of cells Y87:Y98 (Column Y=Residential) yields the average number of total residential customers listed in Table KES-1, or 1,304,891." ORA used this procedure to compute the new value of 1,305,222. For further documentation regarding ORA calculations regarding the effect of changing 3,182 to a hard coded value of 5,000 see tab 'MCust(HistAndFcast)' of the attached modified SDG&E spreadsheet now titled "DR ORA-SDG&E-100 Q1Attachment_SDG&E-38-PCopyWithFormulasAnnualTabTEST.xlsx".

SDG&E Response 03:

Yes. This was provided, in detail, in SDG&E's responses to Questions 1 and 3 of ORA-SDGE-108-MRK. Regarding the same concept, information was also provided to ORA in SDG&E's responses to Questions 2 and 3 of ORA-SDGE-053-MRK.