

Company: San Diego Gas & Electric Company (U 902 M)
Proceeding: 2019 General Rate Case
Application: A.17-10-007
Exhibit: SDG&E-17-R

REVISED

SDG&E

DIRECT TESTIMONY OF GWEN R. MARELLI

(CUSTOMER SERVICES FIELD)

DECEMBER 2017

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



A  Sempra Energy utility®

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SUMMARY

CUSTOMER SERVICES - FIELD – O&M			
In 2016 \$ (000s)			
	BY 2016 Adjusted- Recorded	TY2019 Estimated	Change
Total Non-Shared Services - O&M	\$ 21,439	\$ 23,733	\$ 2,294

CUSTOMER SERVICES - FIELD - CAPITAL COSTS			
In 2016 \$ (000s)			
	2017 Estimated	2018 Estimated	2019 Estimated
Total Capital	\$ 2,250	\$ 0	\$ 0

Summary of Requests

- For Test Year (TY) 2019, San Diego Gas & Electric Company (SDG&E) requests \$23.733 million (an increase of \$2.294 million from Base Year (BY) 2016 adjusted-recorded costs) for Customer Services - Field (CS-F) in order to complete customer service orders, including investigating reports of potential gas leaks and responding to emergencies, establishing/terminating utility service, conducting customer appliance checks, shutting off and restoring gas service for fumigations, performing meter and regulator changes and other related services at customer premises. SDG&E's request includes the following:
 - CS-F work order volume forecasts that reflect the full effect of Smart Meter implementation, as well as projected customer growth;
 - Incremental funding for additional drive time for increased traffic congestion in SDG&E's service territory;
 - Incremental funding for meter changes in accordance with SDG&E's Gas Meter Performance Control Program;
 - Incremental funding to perform Opt-Out reads for residential customers enrolled in SDG&E's Opt-Out Program;

- Incremental funding for implementation of a Field Parts Replacement Program;
- Incremental funding for the Underset Regulator Remediation Program;
- Incremental funding for 5-minute clock test to bring SDG&E in line with industry standard;
- Incremental non-labor funding to replace the multi-gas detector tool used by CS-F technicians for leak and carbon monoxide detection and for cell phone costs for the call-ahead program;
- Savings and ongoing costs from the Fueling Our Future (FOF) initiative;
- Reasonableness of the Smart Meter Opt-Out Balancing Account (SMOBA).

The requested funding supports SDG&E's goal of providing safe, reliable and efficient gas and electric service to customers.

1 **REVISED SDG&E DIRECT TESTIMONY OF GWEN R. MARELLI**
2 **(CUSTOMER SERVICES – FIELD)**

3 **I. INTRODUCTION**

4 **A. Summary of Costs**

5 **1. Operations and Maintenance Costs**

6 My testimony supports the TY 2019 forecasts for operations and maintenance (O&M)
7 costs for non-shared services and capital costs for the forecast years 2017, 2018, and 2019,
8 associated with CS-F area for SDG&E. Table GRM-1 summarizes my sponsored O&M costs.

9 **TABLE GRM-1**

10 **Test Year 2019 Summary of Total O&M Costs**

CS-F – O&M In 2016 \$ (000s)			
	BY 2016 Adjusted- Recorded	TY 2019 Estimated	Change
Total Non-Shared Services - O&M	\$ 21,439	\$ 23,733	\$ 2,294

11 **2. Capital Costs**

12 Capital costs for the forecast years 2017, 2018, and 2019, for information technology
13 systems that support CS-F operations (summarized in Table GRM-2 below), are described in the
14 Information Technology testimony of Chris Olmsted (Exhibit SDG&E-24). However, my
15 testimony will provide the business justification for these costs.

16 **TABLE GRM-2**

17 **Test Year 2019 Summary of Total Capital Costs**

CS-F - IT CAPITAL In 2016 \$ (000s)			
	2017 Estimated	2018 Estimated	2019 Estimated
Total Capital	\$ 2,250	\$ 0	\$ 0

18 Capital costs for gas meters, regulators, tools and equipment required for CS-F operations
19 are covered in the Gas Distribution testimony of Gina Orozco-Mejia (Exhibit SDG&E-04).
20 Capital costs for electric meters and other electrical equipment used for CS-F operations are
21 covered in the Electric Distribution-Capital testimony of Alan Colton (Exhibit SDG&E-14).

1 **B. Summary of Activities**

2 CS-F consists primarily of field technicians who perform services at customer premises,
3 including gas and electric meter work, establishing and terminating gas and electric service,
4 lighting gas pilot lights, conducting customer appliance checks, investigating reports of potential
5 gas leaks, investigating customer complaints of high bills, shutting off and restoring gas service
6 for fumigations, responding to fires (e.g., to check for gas leakage/shut off gas service) and
7 emergency incidents, and other related field services for customers. Field technicians work from
8 five different operating base locations that are dispersed throughout SDG&E’s service territory,
9 which spans more than 4,100 square miles from the California-Mexico border to southern
10 Orange County.

11 **C. Summary of Safety and Risk-Related Costs**

12 Certain of the costs supported in my testimony are driven by activities described in
13 SoCalGas and SDG&E’s November 30, 2016 Risk Assessment Mitigation Phase (RAMP)
14 report.¹ The RAMP report presented an assessment of the key safety risks of SoCalGas and
15 SDG&E and proposed plans for mitigating those risks. As discussed in the Risk Management
16 testimony chapters of Diana Day and Jamie York (Exhibit SCG-02/SDG&E-02, Chapters 1 and
17 3, respectively), the costs of risk-mitigation projects and programs were translated from that
18 RAMP report into the individual witness areas. The forecasts for mitigation costs included in the
19 RAMP report are not for funding purposes, but rather to provide a range of estimated cost
20 impacts for the TY 2019 general rate case (GRC) filing. Therefore, the final GRC representation
21 of RAMP costs may differ from the ranges shown in the original RAMP report.

22 Table GRM-3 below summarizes the TY 2019 forecast to mitigate safety-related risks
23 included in the RAMP report:

¹ I.16-10-015/I.16-10-016 Risk Assessment and Mitigation Phase Report of San Diego Gas & Electric Company and Southern California Gas Company, November 30, 2016. Please also refer to Exhibit SCG-02/SDG&E-02, Chapter 1 (Diana Day) for more details regarding the utilities’ RAMP Report.

1 **TABLE GRM-3**

2 **Summary of Safety Related Risk Mitigation Costs**

3 **In 2016 \$ (000s)**

RAMP Risk Chapter	BY 2016 Embedded Base Costs	TY 2019 Estimate Incremental	TY 2019 Estimate Total
SDG&E-3 - Employee, Contractor, Customer, and Public Safety	\$ 4,570	\$ 228	\$ 4,798
SDG&E-17 - Workforce planning	\$ 0	\$ 49	\$ 49
Total RAMP Costs	\$ 4,570	\$ 277	\$ 4,847

4 **D. Summary of Costs Related to Fueling our Future (FOF)**

5 SDG&E strives to continuously improve the efficiency of its operations. As described in
6 the FOF Policy testimony of Hal Snyder and Randall Clark (Exhibit SCG/SDG&E-03), the
7 utilities kicked off the FOF initiative in May 2016 to identify and implement efficient operational
8 improvements.

9 The FOF team examined all operations across the company and a list of FOF ideas was
10 generated, reviewed, analyzed, and targeted for implementation for 2016 through TY 2019.
11 Savings realized because of implementing FOF operational improvements for CS-F are primarily
12 related to labor cost savings. The total FOF savings reflected in TY 2019 is approximately
13 \$0.344 million.

14 Table GRM-4 below provides a summary of the FOF cost efficiencies described in my
15 testimony:

16 **TABLE GRM-4**

17 **Summary of FOF Costs/(Benefits) By Cost Category**

18 **In 2016 \$ (000s)**

FOF-Ongoing Costs or (Benefits)	Estimated 2017	Estimated 2018	Estimated 2019
1FC001.000, CS-F - Operations	\$ (39)	\$ (68)	\$ (105)
1FC002.000, CS-F - Supervision	\$ 0	\$ 0	\$ (93)
1FC003.000, CS-F - Dispatch	\$ (146)	\$ (146)	\$ (146)
Total FOF Savings	\$ (185)	\$ (214)	\$ (344)

1 **E. Organization of Testimony**

2 My cost forecasts support SDG&E’s goal of providing safe, reliable and efficient gas and
3 electric service to customers, as well as complying with applicable federal, state and local
4 regulations. The CS-F cost forecasts also support SDG&E’s focus on continuous improvement
5 from not only a safety perspective, but from both cost efficiency and customer experience
6 perspectives as well.

7 All requested O&M and capital expenses are described in detail in the remaining sections
8 of my testimony which include the following:

- 9 • Section II describing the Risk Assessment Mitigation Phase and Safety Culture;
- 10 • Section III describing CS-F expenses, including the forecasting methodology for
11 each cost category;
- 12 • Section IV describing the reasonableness of the costs incurred and revenues
13 received in the Smart Meter Opt-Out Balancing Account; and
- 14 • Section V describing the business justification for CS-F IT Capital projects.

15 **F. Support To/From Other Witnesses**

16 The CS-F costs set forth in my testimony are based on active gas and electric meter
17 counts as well as projected meter growth. Forecasted gas meter growth is covered in the Gas
18 Customer Forecast testimony of Rose-Marie Payan (Exhibit SDG&E-37). Forecasted electric
19 meter growth is covered in the Electric Customer Forecast testimony of Kenneth Schiermeyer
20 (Exhibit SDG&E-38). Capital costs for meters associated with planned and routine meter
21 changes and regulators required for the underset regulator remediation program are discussed by
22 Ms. Orozco-Mejia (Exhibit SDG&E-04). Information Technology (IT) costs for systems and
23 technology that supports CS-F operations is covered by Mr. Olmsted (Ex. SDG&E-24). Costs
24 associated with company fleet vehicles used by the CS-F field workforce are covered in the Fleet
25 Services & Facility Operations testimony of Carmen Herrera (Exhibit SDG&E-21). CS-F
26 related miscellaneous revenues, including the basis for the forecasted revenues and the projected
27 revenues, are covered in the Miscellaneous Revenues testimony of Eric Dalton (Exhibit
28 SDG&E-40). The accounting mechanism and request to close the Smart Meter Opt-Out
29 Balancing Account are covered in the Regulatory Accounts testimony of Norma Jasso (Exhibit
30 SDG&E-41). Lastly, CS-F costs to achieve applicable miscellaneous revenues are embedded as
31 a subset of historical and forecast CS-F costs covered in my testimony.

1 **II. RISK ASSESSMENT MITIGATION PHASE (RAMP) AND SAFETY CULTURE**

2 **A. RAMP**

3 As discussed in Section I.C of my testimony, CS-F operations costs include activities to
4 mitigate the safety-related risks included in the RAMP report. These risks are further described
5 in Table GRM-5 below:

6 **TABLE GRM-5**
7 **RAMP Risk Chapter Description**

SDG&E-3 - Employee, Contractor, Customer, and Public Safety	This addresses the risk of non-adherence to safety programs, policies and procedures, which may result in severe harm to employees, contractors and the general public.
SDG&E-17 - Workforce Planning	This addresses risk of the loss of employees with deep knowledge, understanding and experience in operations due to retirements

8 The costs for these activities are found in my workpapers and shown as adjustments to
9 my forecasted costs. In my workpapers, RAMP mitigation costs are broken down between
10 “RAMP-Base” to represent BY 2016 embedded costs and “RAMP-Incremental” to represent TY
11 2019 estimated incremental costs.

12 CS-F costs are primarily based on activity levels (i.e., order volume). Therefore, the TY
13 2019 estimated incremental costs for RAMP do not refer to new projects or programs, but rather,
14 these estimated incremental costs represent the change in activity levels as compared to BY 2016
15 embedded cost levels. This change in activity levels impacts workforce requirements, which
16 affects RAMP-related mitigation costs. For example, one of CS-F’s safety related field orders is
17 a “Gas Leak – Hazard” order. In BY 2016, CS-F completed 24,884 “Gas Leak – Hazard” orders.
18 The TY 2019 forecast for this order type is 27,688, which is an increase of 2,804 orders over BY
19 2016 embedded cost levels.² Consequently, the RAMP mitigation costs are reflected as
20 incremental to TY 2019 as compared to BY 2016 embedded costs but pertains to the same
21 mitigation activity.

² CS-F Operations costs are primarily driven by order volume. The order volume forecast is broken down by each order type and “Gas Leak – Hazard” is one of the order types included in the forecast. Refer to Appendix C, 2012 - 2016 Historical Order Volume by Order Type & 2017 - 2019 Estimated Order Volume by Order Type.

1 Table GRM-6 below summarizes the TY 2019 forecast to mitigate safety-related risks
 2 included in the RAMP report. Additionally, each risk mitigation item identified in the table is
 3 further described below.

4 **TABLE GRM-6**
 5 **Summary of Safety Related Risk Mitigation Costs**
 6 **In 2016 \$ (000s)**

CS - Field	BY 2016 Embedded Base Costs	TY 2019 Estimate Incremental	TY 2019 Estimate Total*
SDG&E 3 – Employee Contractor, Customer and Public Safety			
Customer Orders Relative to Public Safety	\$ 4,319	\$ 256	\$ 4,575
Field Observations and Behavior Based Safety Programs (BBS)	\$ 250	\$ (28)	\$ 222
Total	\$ 4,570	\$ 228	\$ 4,798
SDG&E 17 - Workforce Planning			
Compliance, Technical Training	\$ 0	\$ 49	\$ 49
Total Safety Related Risk Mitigation Costs*	\$ 4,570	\$ 277	\$ 4,847

7 *Total includes rounding differences.

8 **Customer Orders Relative to Public Safety:** Customers call SDG&E’s Customer
 9 Contact Center for various safety related reasons, such as: 1) potential gas leaks when customers
 10 report smelling a natural gas type odor; 2) fumigations; and 3) carbon monoxide (CO) testing.
 11 These calls generate field orders that are handled by CS-F Operations. By responding to these
 12 safety-related field orders, SDG&E mitigates risk to employees and the public. Additionally,
 13 within this category are CS-F atmospheric corrosion (ACOR) orders. Qualified technicians
 14 perform the ACOR inspection orders which often generate follow-up repair orders to remediate
 15 conditions identified during the inspections. Properly maintaining SDG&E’s assets and
 16 infrastructure contributes to the well-being and safety of employees, contractors and the public.

17 **Field Observations and Behavior Based Safety Programs:** CS-F maintains a Quality
 18 Assurance (QA) program to assess the work quality of its field personnel. Job observations and

1 field rides are conducted by management personnel using Behavior Based Safety (BBS)
2 principles. SDG&E's BBS Program is a proactive approach to safety and health management,
3 focusing on principles that recognize at-risk behaviors as a frequent cause of both minor and
4 serious injuries. The purpose of job observations and field rides is to reduce the occurrence of
5 at-risk behaviors by modifying an individual's actions through observation, feedback and
6 positive interventions aimed at developing safe work habits. Employees are also provided
7 feedback and coaching so that their work conforms to policy and procedure.

8 **Compliance Technical Training:** Training is an integral part of how CS-F mitigates
9 safety risks to employees, contractors, customers, and the public. This is technical training for
10 employee replacements to critical safety positions and includes skills training for employees to
11 perform their jobs safely. New hires, transfers, or newly assigned employees must complete and
12 pass mandatory training.

13 **Alternatives Considered for RAMP implementation:** Due to the nature of CS-F
14 activities, SDG&E is proposing to continue with its baseline activities as described above. For
15 example, there are no alternatives to promoting skills development and training of our field
16 employees. The TY 2019 estimated incremental costs for RAMP do not refer to new projects or
17 programs, but rather, these estimated incremental costs represent the change in activity levels as
18 compared to BY 2016 embedded levels. This change in activity levels impacts workforce
19 requirements, which affects RAMP-related mitigation costs.

20 Table GRM-7 below summarizes the TY 2019 forecast by workpaper associated with the
21 safety-related risk mitigation activities described above. For detailed calculation on CS-F
22 Operations, refer to SDG&E-17-WP – 1FC001 CS – Field Operations Supplemental Workpaper
23 2, Exhibit SDG&E-17-WP-R.

1 **TABLE GRM-7**

2 **Summary of Safety Related Risk Mitigation Costs by Workpaper**

3 **In 2016 \$ (000s)**

Item	Cost Category	BY 2016 Embedded Base Costs	TY 2019 Estimated Incremental	TY 2019 Estimated Total
1FC001.000	CS-F - Operations	\$ 4,473	\$ 299	\$ 4,772
1FC003.000	CS-F - Dispatch	\$ 1	\$ 0	\$ 1
1FC004.000	CS-F - Support	\$ 96	\$ (22)	\$ 74
	Total	\$ 4,570	\$ 277	\$ 4,847

4 **B. Safety Culture**

5 SDG&E’s longstanding commitment to safety focuses on three primary areas – employee
6 safety, customer safety and public safety. This safety focus is embedded in what we do and is
7 the foundation for who we are – from initial employee training, to the installation, operation and
8 maintenance of our utility infrastructure, and to our commitment to provide safe and reliable
9 service to our customers.

10 SDG&E regularly assesses its safety culture and encourages two-way communication
11 between employees and management as a means of identifying and managing safety risks. In
12 addition to the reporting of pipeline and occupational safety incidents, management has created
13 multiple methods for employees to report close calls/near misses. At SDG&E, safety is a core
14 value so we provide all employees with the training necessary to safely perform their job
15 responsibilities.

16 **III. O&M COSTS**

17 SDG&E CS-F O&M cost are all “Non-Shared Services”. Table GRM-8 summarizes the
18 total O&M forecasts for the listed cost categories. The O&M forecast includes the cost of field
19 technicians and collectors, as well as costs for other supporting activities required to enable CS-F
20 to provide services to customers.

21 Explanation of all adjustments to BY 2016 adjusted-recorded costs are provided in the
22 workpapers supporting this testimony, Exhibit SDG&E-17-WP-R - CS - Field.

1 **TABLE GRM-8**

2 **O&M Summary of Costs by CS-F Cost Category**

CUSTOMER SERVICES - FIELD			
In 2016 \$ (000s)			
CS-F Cost Category	BY 2016 Adjusted Recorded	TY 2019 Estimated	Change
CS-F - Operations	\$ 13,212	\$ 15,888	\$ 2,676
CS-F - Supervision	\$ 1,237	\$ 1,422	\$ 185
CS-F - Dispatch	\$ 4,335	\$ 3,906	\$ (429)
CS-F - Support	\$ 2,655	\$ 2,517	\$ (138)
Total CS-F Costs	\$ 21,439	\$ 23,733	\$ 2,294

3 **A. CS-F Operations**

4 **1. Description of Costs and Underlying Activities**

5 The CS-F Operations cost category consists of labor and non-labor expenses for field
6 technicians to provide service at customer premises, including both customer and company-
7 generated work orders. Examples of customer-generated work orders include requests to
8 establish/remove gas and electric service, light gas pilots, check gas appliances, shut off and
9 restore gas service for fumigation, investigate the potential causes of high bills, respond to
10 emergency incidents, investigate potential gas leaks, and other services. Examples of company-
11 generated work include meter and regulator changes, and other meter work necessary to maintain
12 company assets, and collecting customer payments for delinquent bills. Non-labor costs include
13 items such as uniform expenses, small tools and miscellaneous supplies used on the job.

14 RAMP-related costs for CS-F operations include the costs for the following mitigation
15 activities: (1) customer orders relative to public safety; (2) job observations and Behavior Based
16 Safety; and (3) employee technical training.

17 Table GRM-9 summarizes total labor and non-labor expenses requested for the CS-F
18 Operations cost category.

1 **TABLE GRM-9**

2 **O&M Summary for CS-F Operations Cost Category**

CS-F OPERATIONS			
In 2016 \$ (000s)			
Expense Item	BY 2016 Adjusted Recorded	TY 2019 Estimated*	Change
Labor	\$ 12,566	\$ 14,889	\$ 2,323
Non-Labor	\$ 646	\$ 999	\$ 353
Total*	\$ 13,212	\$ 15,888	\$ 2,676

3 *Of the \$15,888,000 total TY 2019 estimated costs, approximately \$4,772,000 or 30%
4 are RAMP-related costs (refer to Section II for additional details on RAMP mitigation
5 activities).

6 **2. Forecast Method**

7 CS-F Operations costs are primarily driven by work order volumes. Work order
8 volumes, in turn, are largely driven by factors outside of SDG&E's control, including customer
9 growth, weather, the state of the economy, customer turnover, the level of natural gas and
10 electric prices, customer appliances/equipment choices, emergency incidents such as fires and
11 earthquakes, and changes to applicable laws and regulations. To forecast TY 2019 expenses as
12 accurately as possible, SDG&E utilized a three-year average (2014 – 2016) for most order types
13 (47 of 54 order types), excluding those incremental funding requests discussed in Section III.A.5.
14 A description of each of order type is provided in Appendix B. A three-year average was chosen
15 because 2014 – 2016 are the most recent historical years in which the full effects of smart meter
16 implementation are reflected in work order volumes. A table showing actual historical volume
17 by order type from 2012 through BY 2016 and estimated volume by order type for 2017 through
18 TY 2019 are provided in Appendix C.

19 Table GRM-10 below provides a summary of the seven order types that used forecasting
20 assumptions other than a three-year average.

TABLE GRM-10

Forecasting Assumptions Different from 3-Year Average by CS-F Work Order Type

Order Type	Forecasting Assumptions
1 Collections – First Call	Forecast is based on a two-year average of 2015 and 2016 (orders to active meters). In 2014, except for notices for vulnerable customers ³ , SDG&E began mailing the first notice to the customer when a customer's payment became past due, instead of sending a field collector to customer premises to deliver the first collection notice.
2 Meter Work - O & M - Customer/Company Change - Gas	Forecast is based on the following: 1) 2014 - 2016 average (orders to active meters) associated with routine meter changes; and 2) planned meter changes in accordance to SDG&E's Gas Meter Performance Control Program (refer to Section III.A.5.a.).
3 Meter Work - O & M - Customer/Company Test (Change) - Gas	
4 Meter Work - O & M - Miscellaneous Company Work	
5 Meter Work - O & M - Periodic Test/Change - Gas	
6 CSF - Incomplete	Forecast is based on 2015 actual data (orders to active meters) since FOF savings for CS-F Operations includes savings associated with the reduction in incomplete orders which were started in 2016. Using 2016 order volume would have duplicated the savings.

As explained by Ms. Payan (Ex. SDG&E-37), SDG&E gas meter growth is expected to increase by a total of 1.9% from 875,462 in BY 2016 to 892,419 in TY 2019. As explained by Mr. Schiermeyer (Ex. SDG&E-38), the number of electric meters is expected to grow by 2.7% from 1,430,175 in BY 2016 to 1,468,391 in TY 2019. In almost all cases, CS-F work order volumes are forecasted on a number-of-orders-per-active meter basis, by order type. The TY 2019 forecasted order volumes for each order type are the product of the forecasted number of orders per meter and the number of forecasted meters in TY 2019.

³ Vulnerable customers include Medical Baseline, Life Support, and customers who self-certify that they have a serious illness or condition that could become life threatening if service is disconnected. See D.14-06-036, Attachment A, pp 6-7.

1 **3. Cost Drivers**

2 In addition to order volumes and customer growth, CS-F field technician costs are driven
3 by the length of time it takes to travel to customer premises (drive time); the length of time it
4 takes to complete each type of work order (on premises time); the amount of (non-job) time (e.g.
5 for start of day and end of day non-order work, breaks, one-on-one discussions with supervisors,
6 and other non-order activities); training time; and vacation and sick time.

7 **a. Drive Time**

8 Each CS-F order has an associated average drive time per order to allow the field
9 technician time to travel to the customer’s premise (between orders). Historical and forecast
10 average drive times per order are summarized in Table GRM-11 below. Forecasted 2017-2019
11 average drive times per order assume a 1% increase per year due to increased traffic congestion,
12 which is based on a five-year average, resulting in a 23.4 second increase in average drive time
13 per order by TY 2019.

14 **TABLE GRM-11**
15 **Average Drive Time per CS-F Order (In Minutes)**

Historical Average Drive Time Per Order					Forecast Average Drive Time Per Order		
2012	2013	2014	2015	2016	2017	2018	2019
13.3	13.1	12.9	12.4	13.0	13.1	13.3	13.4

16 **b. On Premises Time**

17 Each C-SF order type has an associated on premises average order completion time. On
18 premises times can change over time to the extent changes in procedures or new safety
19 requirements are implemented for a particular order type. BY 2016 average on premises time
20 per order type was used to forecast on premises time in 2017-2019 because the most current
21 procedures and safety requirements are reflected in BY 2016 on premises times. Refer to
22 SDG&E-17-WP – 1FC001 CS – Field Operations Supplemental Workpaper 1, Exhibit SDG&E-
23 17-WP-R, for BY 2016 average on premises time per order type.

24 **c. Non-Job Time, Training Time, Vacation and Sick, Wage Rate,**
25 **and Non-Labor Expense**

26 In addition to drive time and on premises time being converted to hours and then full-
27 time equivalents (FTEs), the appropriate non-job time; meetings/training time; and the SDG&E

1 vacation and sick factors were applied to compute forecasted FTEs by year. BY 2016 non-job
2 time was used to determine the forecast non-job time per FTE on the basis that BY 2016 is most
3 indicative of current experience. Time dedicated to training was computed using a three-year
4 average because training time fluctuates from year to year, largely due to variations in the level
5 of workforce turnover each year.

6 Table GRM-12 below provides a summary of the applicable non-work factors applied to
7 determine the total number of FTEs required for completing the forecast order volumes.

8 **Table GRM-12**

9 **Non-Work Factors Used to Determine FTE Requirements**

Non-Work Factor Type	Factor %
Non-job time (e.g., start and end of day non-order work, breaks, etc.)	34.75%
Training (meetings/classes)	8.18%
Vacation and Sick	18.16%

10 A blended wage rate for the various CS-F job classifications is used to compute total
11 labor expense. An associated non-labor expense per FTE for related small tools, uniforms, and
12 miscellaneous supplies is also added to compute total non-labor expenses for TY 2019. The non-
13 labor expense per FTE is based on a three-year average (2014–2016) to be consistent with the
14 order volume forecast.

15 **4. Summary of CS-F Operations Costs**

16 SDG&E TY 2019 funding request of \$15.888 million for the CS-F Operations cost
17 category (an increase of \$2.676 million to BY 2016 adjusted-recorded costs) consists of the
18 elements summarized in Table-GRM-13 below:

1 **TABLE GRM-13**

2 **Summary of TY 2019 Incremental O&M Expenses for CS-F Operations**

CS-F OPERATIONS	TY 2019 Estimated		
	In 2016 \$ (000s)		
Activity	Labor	Non-labor	Total
BY 2016 Adjusted Recorded	\$ 12,566	\$ 646	\$ 13,212
Increase due to the Order Forecast methodology	\$ 920	\$ 49	\$ 969
TY 2019 1% Increase in Drive Time Due to Increasing Traffic Congestion	\$ 147	\$ 8	\$ 155
Incremental Funding Request from III.A.5			
Planned Meter Changes	\$ 700	\$ 36	\$ 736
Perform Bi-monthly Opt-Out Reads	\$ 318	\$ 22	\$ 340
Field Parts Replacement Service Program	\$ 153	\$ 70	\$ 223
Underset Regulator Remediation Program	\$ 120	\$ 6	\$ 126
Five-minute Clock Test	\$ 92	\$ 4	\$ 96
Non-labor for Multi-Gas Detector tool and Cell Phone Costs for Call Ahead Program		\$ 136	\$ 136
Sub-Total	\$ 15,016	\$ 977	\$ 15,993
FOF Savings	\$ (127)	\$ 22	\$ (105)
TY 2019 Estimated	\$ 14,889	\$ 999	\$ 15,888

3 **5. Incremental Funding Requests**

4 In addition to the order volume forecast based on the three-year average (2014–2016) and
5 projected meter growth forecasts, SDG&E is requesting incremental funding for the activities
6 listed below. Refer to SDG&E-17-WP - 1FC001 CS - Field Operations Supplemental
7 Workpaper 1, Exhibit 17-WP-R SDG&E/Marelli for detailed calculations of the TY 2019
8 forecast.

1 **a. Planned Meter Changes (PMCs)**

2 Pursuant to CPUC Resolution No. G-1426 approved in 1968, SDG&E established a Gas
3 Meter Performance Control Program (GMPCP). The objective of the program is to evaluate the
4 accuracy of SDGE’s meter population based on performance rather than length of time in service
5 and identify meter families that should be removed in accordance with the GMPCP. As part of
6 the GMPCP, meters are separated into “meter families” based on the set year, manufacturer, case
7 type, diaphragm type and repair. The accuracy of each meter family is monitored each year
8 through statistical sampling. This methodology ensures that SDG&E complies with the
9 requirements of CPUC General Order 58-A Rule 13.

10 As described in my testimony for SoCalGas’ Meter Performance Control Program,
11 several meter families have been identified as subject to removal in SoCalGas’ service territory.⁴
12 Similarly, meters from the same manufacturer family and vintage are in service in SDG&E’s
13 service territory and initial sampling indicates that these SDG&E meters may fail the parameters
14 prescribed in SDG&E’s GMPCP. Consequently, to maintain safe and reliable service, SDG&E
15 is undertaking further evaluations to determine whether SDG&E’s meter families will fail to
16 meet the criteria of the GMPCP program. To address potential meter replacements, SDG&E is
17 requesting \$0.736 million.⁵

18 Table GRM-14 shows the number of potential meter replacements SDG&E plans to
19 complete each year (2019–2021):

20 **TABLE GRM-14**
21 **Proposed Annual PMC Plan for Potential Meter Replacements**

	2019	2020	2021	Total
Annual PMC Count	18,000	18,000	18,000	54,000

22 **b. Perform Bi-monthly Opt-Out Reads**

23 Beginning with the TY 2019 GRC, SDG&E has included estimates for opt-out manual
24 meter reading costs and revenues in the GRC (refer to Section IV for background and additional
25 details on SDGE’s Smart Meter Opt-Out Program). SDG&E is requesting \$0.340 million to

⁴ Refer to Ex. 18 SCG/Marelli, at Section III.B.1.e, item (1)

⁵ If the four year GRC cycle is adopted, as proposed in the testimony of Kenneth Deremer (Exhibit SDG&E-43), then this calculation will need to be revised to reflect such adoption..

1 perform bi-monthly manual meter reading for residential customers participating in the Opt-Out
2 Program. The estimate for opt-out manual meter reading was based on BY 2016 since it reflects
3 the first full year of bi-monthly meter reading activity for customers enrolled in SDG&E's Opt-
4 Out Program. The revenue forecast for the Opt-Out Program is covered by Mr. Dalton (Ex.
5 SDG&E-40).

6 **c. Field Parts Replacement Services (FPRS) Program**

7 SDG&E's FPRS program was authorized on a non-tariffed basis by CPUC Resolution G-
8 3500 on July 23, 2015. An FPRS pilot program was launched in April 2016 and was well
9 received by the customers who have participated in it. The FPRS program allows SDG&E to
10 provide certain value added services directly to customers that adds to the customer's
11 convenience and safety, including on-the-spot repairs and reduced instances where gas service
12 needs to be shut off due to an unsafe condition. Implementing the FPRS program increases the
13 on-premises time for entered orders where the customer is present. The additional on premises
14 time is needed to inform the customer about the service offered and explain the charges, as well
15 as perform the part replacement if the customer so requests.

16 SDG&E is requesting \$0.223 million to expand the FPRS pilot program into an offering
17 for all SDG&E customers. Revenue from the program will be included in the miscellaneous
18 revenue forecast which is covered by Mr. Dalton (Ex. SDG&E-40).

19 **d. Underset Regulator Remediation Program**

20 Typically, most regulators are located outdoors. However, some regulators are in
21 confined spaces, i.e., undersets, which are installed under homes with raised foundations, in
22 basements and parking garages. Over the years, customer changes to facilities or other external
23 factors could affect the proper venting of underset regulators. These inadequate venting
24 conditions are identified by the Leakage Mitigation field employees who inspect the MSA for
25 atmospheric corrosion during their leakage survey inspections. The remediation for inadequately
26 vented regulators falls under three types of underset regulator work: (1) some regulators will
27 need to be replaced with a slam-shut regulator; (2) some regulators will need to have the
28 regulators relocated from the underside to the outside of the house, basement or parking garage;
29 and (3) some regulators will need to have venting reinstalled through an existing hole or screen.

30 This is a new program to address the remediation of inadequately vented regulators on
31 meter set assemblies (MSA's) in underset (under house, in basements or parking garages)

1 locations due to the June 2017 implementation of the Occupational Safety and Health
2 Administration (OSHA) Regulation 29 Code of Federal Regulations (CFR) § 1926.1153,
3 Crystalline Silica Standard for Construction. This new OSHA regulation sets standards for
4 drilling in concrete to limit silica exposure and impacts SDG&E's ability to remediate
5 inadequately vented regulators where drilling through stucco would be required. As part of the
6 preparation to respond to the new requirements of this regulation, SDG&E realized that the
7 building industry incorporated asbestos in stucco products produced from the 1920's to the
8 1980's to increase fire resistance, reducing options to drill through stucco to provide proper
9 regulator vent extensions.

10 With new OSHA regulations for drilling in concrete due to the silica exposure and the
11 potential for stucco to contain asbestos, a new method of regulation is required. Slam shut
12 regulators work in a similar manner to regulators currently in service, stopping the flow of gas
13 until the pressure condition is corrected. Unlike the existing regulators in service, slam shut
14 regulators do not require a large vent opening, and are not susceptible to vibration when used
15 with extended vent lengths. Up to 40 feet of one-fourth inch tubing can be used to operate the
16 slam shut regulator without detriment, which would be adequate to reach foundation vent screens
17 typically found on raised foundation homes. This allows for venting the slam-shut regulator
18 without drilling in stucco or concrete.

19 Between now and TY 2019, SDG&E will be evaluating and testing slam-shut regulators
20 from vendors to determine the optimal regulator of this type for our service territory. SDG&E
21 will conduct a vendor selection process, create installation procedures and program framework
22 and finally, hire and train employees to do this work. Thus, SDG&E is requesting funding to
23 support this program, beginning in TY 2019, to remediate regulators in underset locations which
24 are identified as having inadequately installed vent extensions.

25 The Underset Regulator Remediation Program costs are driven by the following: (1) the
26 estimated number of underset MSA locations across the SDG&E's service territory, and (2)
27 change-out costs associated with the estimated labor time for a field technician including on
28 premises time to complete the replacement, drive time, non-job time, meetings/training time,
29 vacation and sick time, and associated non-labor expense.

30 SDG&E is requesting \$0.126 million labor and associated non-labor to perform this
31 underset regulator work. The new Underset Regulator Remediation Program costs are primarily

1 driven by inadequately vented regulator conditions identified by the Leakage Mitigation Team.
2 There are approximately 873 MSA's with inadequate venting conditions annually. Of these
3 underset installations, SDG&E estimates that approximately 42% or 367 will need to be replaced
4 with the slam-shut regulator, 48% or 419 will need to have the regulators relocated from the
5 underside to the outside of the house, garage or basement, and 10% or 87 will need to have
6 venting reinstalled through an existing hole or screen. In most cases, SDG&E can complete the
7 remediation on the first field visit. However, in certain instances, additional attempts after the
8 first field visit are required for all "Can't Get In" (CGI) facilities. The average CGI rate for
9 customer services field work during BY 2016 was 6.1%. Consequently, SDG&E estimates an
10 additional 53 annual field visits will be required over the 873 first field visits annually to replace
11 all the underset regulators.

12 The capital equipment which is the cost for the slam shut regulators is covered in the
13 testimony of Ms. Orozco-Mejia (Ex. SDG&E-04).

14 **e. Five Minute Clock Test**

15 With the added smart meter modules on gas meters, accurate low flow can be hard to
16 detect using the test dials during SDG&E's standard two-minute clock test. Consequently,
17 SDG&E updated its policy and procedures to extend the clock test time from two minutes to five
18 minutes to address the low flow detection and align with the industry standards.⁶ Utilizing the
19 five-minute clock test increases the on-premises time for orders requiring a houseline leak test,
20 such as a new occupant turn-on or initial gas turn-on orders for new construction or houseline
21 leak investigations. SDG&E is requesting \$0.096 million for the incremental on-premises time
22 associated with the industry standard five-minute clock test performed on orders requiring a
23 houseline leak test.

24 **f. Incremental Non-Labor**

25 SDG&E is requesting \$0.136 million in non-labor for the following: (1) \$0.102 million to
26 replace the multi-gas detector tool which is a handheld device that detects multiple gases and is
27 used by CS-F technicians for gas leaks investigations, carbon monoxide investigations and purge
28 jobs. The tools were purchased in 2013 and have a useful life of approximately five years so it

⁶ Industry Standards are based on NFPA54 National Fuel Gas Code, Annex C, Table C.2 Observation Times for Various Meter Dials and American Gas Association (AGA) survey performed with Gas and Gas/Electric Utilities, October 2014.

1 will be due for replacement in TY 2019. The total cost of replacement is \$0.307 million so the
 2 funding requested represents one-third of the total cost;⁷ and (2) \$0.034 million for cell phone
 3 costs associated with the implementation of the call ahead program whereby customers are
 4 contacted by CS-F technicians to inform customers of an estimated time of arrival at the
 5 premises.

6 **g. FOF Savings**

7 A net FOF benefit of (\$0.105) million is included in the TY 2019 request for the CS-F
 8 Operations cost category.

9 **h. Vehicles**

10 Field technicians and associated field supervisors are provided with company fleet
 11 vehicles to perform their jobs. The incremental costs for these vehicles as reflected in TY 2019
 12 are covered in the Fleet Services testimony of Ms. Herrera (Ex. SDG&E-21) and are not
 13 included in the costs set forth in my testimony.

14 **B. CS-F Supervision**

15 Table GRM-15 below summarizes SDG&E’s requested TY 2019 expenses for the CS-F
 16 Supervision cost category.

17 **TABLE GRM-15**
 18 **O&M Summary for CS-F Supervision Cost Category**

CS-F SUPERVISION			
In 2016 \$ (000s)			
Expense Item	BY 2016 Adjusted Recorded	TY 2019 Estimated	Change
Labor	\$ 1,186	\$ 1,366	\$ 180
Non-Labor	\$ 51	\$ 56	\$ 5
Total	\$ 1,237	\$ 1,422	\$ 185

19 **1. Description of Costs and Underlying Activities**

20 Organizationally, CS-F Operations field employees report to field supervisors. Like field
 21 technicians and collectors, field supervisors are geographically dispersed across SDG&E’s five

⁷ If the four year GRC cycle is adopted, as proposed in the testimony of Kenneth Deremer (Exhibit SDG&E-43, then this calculation will need to be revised to reflect such adoption.

1 operating bases. Field supervisors hire and coach employees, conduct safety and job
2 observations, coordinate with dispatch and others to address and resolve field issues, respond to
3 emergency incidents to provide on-site leadership, and manage the overall performance of CS-F
4 employees who work at each of the operating bases.

5 **2. Forecast Method**

6 The estimated number of field supervisors in TY 2019 is based on maintaining the three
7 year (2014–2016) average employee-to-supervisor ratio of 12:1. A ratio of 12:1 is appropriate
8 given the geographic areas covered by each operating base; the variety of work performed and
9 conditions encountered at customer premises; and the expectation that supervisors spend as much
10 time as possible in the field performing safety and job observations, coaching employees, and
11 managing employee performance. A zero-based forecast is the only method that appropriately
12 maintains the desired employee-to-supervisor ratio.

13 Non-labor expenses include cell phones, office supplies and other miscellaneous
14 expenses. The non-labor cost estimate is based on the three-year (2014–2016) average of
15 historical non-labor expense per supervisor, multiplied by the forecasted number of supervisors.
16 Because non-labor costs are driven by the number of supervisors, historical averaging or trending
17 of expenses alone would not be appropriate because expenses would not be aligned with the
18 forecasted workforce levels.

19 **3. Cost Drivers**

20 Costs are driven by the number of supervisors, applicable salary levels, and associated
21 non-labor expenses for supervisory employees. The number of supervisors is driven by the
22 number of field employees, maintaining an employee to supervisor ratio of 12:1, and the
23 geographic coverage needed to provide adequate supervision for all geographic areas at all time.

24 **4. FOF Savings**

25 A net FOF savings of (\$0.093) million is included in the TY 2019 request for the CS-F
26 Supervision cost category.

27 **5. Summary of CS-F Supervision Costs**

28 SDG&E TY 2019 funding request of \$1.422 million for the CS-F Supervision cost
29 category (an increase of \$0.185 million compared to BY 2016 adjusted-recorded costs) consists
30 of the elements summarized in Table-GRM-16 below. See Ex. 17-WP-R SDG&E/Marelli
31 (SDG&E-17-WP - 1FC002 CS - Field Supervision Supplemental Workpaper 1).

1 **TABLE GRM-16**

2 **Summary of TY 2019 Incremental O&M Expenses for CS-F Supervision**

CS-F SUPERVISION	TY 2019 Estimated In 2016 \$ (000s)		
	Labor	Non-labor	Total
BY 2016 Adjusted Recorded	\$ 1,186	\$ 51	\$ 1,237
Incremental Supervisors (2.7 FTEs) based on zero-based forecast to maintain 12:1 employee to supervisor ratio	\$ 273	\$ 5	\$ 278
Sub-Total	\$ 1,459	\$ 56	\$ 1,515
FOF Savings	\$ (93)		\$ (93)
TY 2019 Estimated	\$ 1,366	\$ 56	\$ 1,422

3 **C. CS-F Dispatch**

4 Table GRM-17 below summarizes SDG&E’s requested TY 2019 expenses for the CS-F
5 Dispatch cost category.

6 **TABLE GRM-17**

7 **O&M Summary for CS-F Dispatch Cost Category**

CS-F DISPATCH In 2016 \$ (000s)			
Expense Item	BY 2016 Adjusted Recorded	TY 2019 Estimated*	Change
Labor	\$ 4,261	\$ 3,816	\$ (445)
Non-Labor	\$ 74	\$ 90	\$ 16
Total*	\$ 4,335	\$ 3,906	\$ (429)

8 *Of the \$3,906,000 total TY 2019 estimated costs, approximately \$1,000 or 0.03% are
9 RAMP-related costs (refer to Section II for additional details on RAMP mitigation
10 activities).

11 **1. Description of Costs and Underlying Activities**

12 Dispatch personnel route and dispatch work orders to CS-F employees, electric
13 troubleshooters, electric crews and Gas Distribution field employees on a day before and same
14 day basis, 24 hours a day, 365 days a year. Dispatchers handle all matters that arise during the

1 day, including dispatch of emergency orders real time as they are received; redistribution of
 2 work when employees call in sick or otherwise are unavailable; redistribution of work orders
 3 when employees are not able to complete all work that has been assigned for the day;
 4 coordination of logistics such as material an equipment ordering, no park sign, traffic control,
 5 etc.; and employee availability and schedule of field employees.

6 Non-labor expenses include cell phones, office supplies, and other miscellaneous
 7 expenses.

8 RAMP-related costs for CS-F Dispatch include the costs for job observations.

9 **2. Forecast Method**

10 A three-year average was used because SDG&E believes this methodology best reflects
 11 the effects of Smart Meter implementation.

12 Table GRM-18 below summarizes the three-year average for CS-F Dispatch costs.

13 **TABLE GRM-18**
 14 **CS-F Dispatch 3-Year Average**

CS-F Dispatch	2014 - 2016 Adjusted Recorded		
	In 2016 \$ (000s)		
Year	Labor	Non-labor	Total*
2014 Adjusted Recorded	\$ 3,737	\$ 92	\$ 3,830
2015 Adjusted Recorded	\$ 3,889	\$ 104	\$ 3,992
2016 Adjusted Recorded	\$ 4,261	\$ 74	\$ 4,335
3 Year Average	\$ 3,962	\$ 90	\$ 4,052

15 *Total includes rounding differences.

16 **3. Cost Drivers**

17 Costs are primarily driven by the numbers of dispatchers needed to provide 24/7, 365
 18 days per year coverage, including the need to immediately respond to all emergency orders, as
 19 well as applicable wage rates. Unlike CS-F Operations costs, CS-F Dispatch costs are not driven
 20 by the order volume.

21 **4. FOF Savings**

22 FOF net savings of (\$146) is included in the TY 2019 forecast as shown in Table GRM-
 23 19 in the summary below.

1 **5. Summary of CS-F Dispatch Costs**

2 SDG&E TY 2019 funding request of \$3.906 million for the C-SF Dispatch cost category
 3 (a decrease of \$0.429 million compared to BY 2016 adjusted-recorded costs) consists of the
 4 elements summarized in Table-GRM-19 below:

5 **TABLE GRM-19**

6 **Summary of TY 2019 O&M Expenses for CS-F Dispatch**

CS-F DISPATCH	TY 2019 Estimated In 2016 \$ (000s)		
	Labor	Non-labor	Total
BY 2016 Adjusted Recorded	\$ 4,261	\$ 74	\$ 4,335
Decrease in labor and increase in non-labor as a result of using the 3-year average	\$ (299)	\$ 16	\$ (283)
Sub-Total: 3-Year Average (see Table GRM-18)	\$ 3,962	\$ 90	\$ 4,052
FOF Net Savings	\$ (146)		\$ (146)
TY 2019 Estimated	\$ 3,816	\$ 90	\$ 3,906

7 **D. CS-F Support**

8 Table GRM-20 below summarizes SDG&E's requested TY 2019 expenses for the CS-F
 9 Support cost category.

10 **TABLE GRM-20**

11 **O&M Summary for CS-F Support Cost Category**

CS-F SUPPORT In 2016 \$ (000s)			
Expense Item	BY 2016 Adjusted Recorded	TY 2019 Estimated*	Change
Labor	\$ 2,244	\$ 2,165	\$ (79)
Non-Labor	\$ 411	\$ 352	\$ (59)
Total*	\$ 2,655	\$ 2,517	\$ (138)

12 *Of the \$2,517,000 total TY 2019 estimated costs, approximately \$74,000 or 2.9% are
 13 RAMP-related costs (refer to Section II for additional details on RAMP mitigation
 14 activities).

1 **1. Description of Costs and Underlying Activities**

2 The CS-F Support cost category includes: (1) centralized training (classroom instructors
3 and training manager located at SDG&E’s skills training center); (2) field instructors who
4 accompany new field employees immediately following their formal training; (3) QA inspectors
5 and QA supervisor who inspect the work of technicians; (4) district operations clerks who are
6 located at the field operating bases; (5) District Operations Managers who oversee the day to day
7 operations of each field operating base; (6) a Meter Access group that resolves any difficulty
8 field technicians might be experiencing in gaining safe access to meters at customer premises;
9 (7) a safety group that fosters safe work practices among CS-F employees; and (8) field
10 technology support personnel who maintain the field Mobile Data terminals (MDTs), work
11 management, routing and reporting systems used for CS-F operations.

12 Non-labor costs include cell phones, office supplies and other miscellaneous expenses.

13 RAMP-related costs for CS-F Support include costs associated with Behavior Based
14 Safety.

15 **2. Forecast Method**

16 Forecasted TY 2019 expenses for both labor and non-labor are based on a three-year
17 average. A three-year average was used because SDG&E believes this methodology best reflects
18 the effects of Smart Meter implementation.

19 Table GRM-21 below summarizes the three-year average for CS-F Support costs.

20 **TABLE GRM-21**
21 **CS-F Support 3-Year Average**

CS-F Support	2014 - 2016 Adjusted Recorded		
	In 2016 \$ (000s)		
Year	Labor	Non-labor	Total
2014 Adjusted Recorded	\$ 2,010	\$ 385	\$ 2,395
2015 Adjusted Recorded	\$ 2,240	\$ 373	\$ 2,613
2016 Adjusted Recorded	\$ 2,244	\$ 411	\$ 2,655
3 Year Average*	\$ 2,165	\$ 389	\$ 2,554

22 *Average includes rounding differences.

1 **3. Cost Drivers**

2 Costs are primarily driven by the need to: (1) train new employees; (2) maintain a
3 technically proficient workforce; and (3) validate that work is performed in a manner that meets
4 SDG&E’s quality standards.

5 **4. Summary of CS-F Support Costs**

6 SDG&E TY 2019 funding request of \$2.517 million for the CS-F Support category (a
7 decrease of \$0.138 million compared to BY 2016 adjusted-recorded costs) consists of the
8 elements summarized in Table-GRM-22 below:

9 **TABLE GRM-22**

10 **Summary of TY 2019 O&M Expenses for CS-F Support**

CS-F SUPPORT	TY 2019 Estimated In 2016 \$ (000s)		
	Labor	Non-labor	Total
BY 2016 Adjusted Recorded	\$ 2,244	\$ 411	\$ 2,655
Decrease in costs as a result of using the 3-year average	\$ (79)	\$ (22)	\$ (101)
Sub-Total: 3-Year Average (see Table GRM-21)	\$ 2,165	\$ 389	\$ 2,554
Reduction in SORT maintenance costs ⁸		\$ (37)	\$ (37)
TY 2019 Estimated	\$ 2,165	\$ 352	\$ 2,517

11 **IV. SMART METER OPT-OUT PROGRAM**

12 **A. Background and Program Implementation**

13 In D. 12-04-019 and D.14-12-078, the Commission modified SDG&E’s Smart Meter
14 Program to include an analog meter option (Opt-Out Program) for residential customers who do
15 not wish to have a smart meter installed.

16 Pursuant to the Opt-Out Decisions, SDG&E implemented modifications to its billing
17 system to begin charging opt-out fees to customers who enroll in the Opt-Out Program.

18 SDG&E’s Opt-Out program implementation costs included the following components:

⁸ With the implementation of the SORT Extension project discussed in Section V.B, there will be a reduction in maintenance costs of \$0.37 million in TY 2019 non-labor expenses.

- 1 • Costs to enhance the billing system to enable the implementation of the approved
- 2 fees and monthly charges for residential customers who enroll in the Opt-Out
- 3 program per the tariffs filed with the Commission;
- 4 • Costs to design, test and implement necessary IT changes for bi-monthly manual
- 5 meter reading;
- 6 • Field costs to manually read meters for customers enrolled in the Opt-Out
- 7 program;
- 8 • Field costs to replace smart meters with analog meters and/or mark existing
- 9 analog devices as “opt-out” for customers who select the Opt-Out option;
- 10 • Field costs to replace analog meters with smart meters for customers who exit the
- 11 Opt-Out program;
- 12 • Costs to communicate Opt-Out program information to customers as required by
- 13 D. 12-04-19 and back-office support to implement the program; and
- 14 • Cost for the purchase of additional analog devices. This excludes the \$27,934
- 15 attributable to the purchase of analog electric meters which was disallowed in
- 16 D.14-12-078.

17 **B. Smart Meter Opt-Out Balancing Account (SMOBA)**

18 D.14-12-078 adopted a balancing account (i.e., recorded cost) approach to setting the
19 revenue requirement for opt-out service until SDG&E’s next GRC. This Decision authorized
20 SDG&E to recover actual costs associated with providing the opt-out option up to \$1.447
21 million. It also authorized SDG&E to transfer the amounts recorded in the Smart Meter Opt-
22 Out Memorandum Account (SMOMA) authorized in D.12-04-019 to a new balancing account,
23 Smart Meter Opt-Out Balancing Account (SMOBA). Since D.14-12-078 was issued on
24 December 2014, the Smart Meter Opt-Out was not included in SDG&E’s TY 2016 GRC. The
25 first opportunity to integrate opt-out forecasts is in SDG&E’s TY 2019 GRC filing. SDG&E is
26 requesting the true up and close out of the Smart Meter Opt-Out Balancing Accounts (SMOBA)
27 in this TY 2019 GRC which is covered in the testimony of Ms. Jasso (Ex. SDG&E-41).
28 Beginning with the TY 2019 GRC, SDG&E has included estimates for opt-out manual meter
29 reading costs and revenues in the GRC. Manual meter reading costs for residential customers
30 participating in the Opt-Out Program are included in my testimony. The Opt-Out Program
31 revenue forecast is covered in the testimony of Mr. Dalton (Ex. SDG&E-40).

1 Table GRM-23 summarizes the Opt-Out Program recorded revenues and expenses in
 2 SMOBA from 2012 through June 2017 for electric and gas.

3 **TABLE GRM – 23**
 4 **Summary of Recorded Revenues and Expenses in SMOBA**
 5 **From 2012 – June 2017**

SMOBA – ELECTRIC				
(000s)				
Year	Revenues	Expenses	Interest	Account Balance
2010	\$0.0	\$0.0	\$0.0	\$0.0
2011	\$0.0	\$0.0	\$0.0	\$0.0
2012*	(\$102.0)	\$314.2	\$0.1	\$212.4
2013*	(\$165.8)	\$271.0	\$0.3	\$317.9
2014*	(\$186.3)	\$278.6	\$0.4	\$410.6
2015*	(\$157.5)	\$226.9	\$0.7	\$480.7
2016	(\$92.3)	\$146.0	\$2.5	\$536.8
2017 (Jan – Jun)	(\$36.2)	\$70.3	\$2.3	\$573.3
SMOBA – GAS				
(000s)				
Year	Revenues	Expenses	Interest	Account Balance
2010	\$0.0	\$0.0	\$0.0	\$0.0
2011	\$0.0	\$0.0	\$0.0	\$0.0
2012*	(\$54.9)	\$177.5	\$0.1	\$122.7
2013*	(\$89.3)	\$151.9	\$0.2	\$185.5
2014*	(\$100.3)	\$141.8	\$0.2	\$227.2
2015*	(\$84.8)	\$130.6	\$0.4	\$273.4
2016	(\$49.7)	\$84.9	\$1.4	\$310.0
2017 (Jan – Jun)	(\$19.5)	\$40.3	\$1.4	\$332.1

6 *Costs for 2012 through March 2015 were recorded in SMOMA. D.14-12-078
 7 authorized SDG&E to transfer the amounts recorded in the SMOMA to a new
 8 balancing account, SMOBA.

1 **V. CAPITAL**

2 Capital costs for the forecast years 2017, 2018 and 2019 for information technology
3 systems that support CS-F operations (Table GRM-24 below), are sponsored by Mr. Olmsted
4 (Ex. SDG&E-24). The purpose of this section of my testimony is to describe the business
5 justification for these costs. Refer to Mr. Olmsted’s workpapers, Exhibit SDG&E-24-CWP-
6 Information Technology, for the basis for the costs.

7 **TABLE GRM – 24**
8 **Summary of Capital Expenditures**

CUSTOMER SERVICES – FIELD CAPITAL COSTS In 2016 \$ (000s)				
IT Capital Workpaper Group	Project Name	2017 Estimated	2018 Estimated	2019 Estimated
00811E – T16042	Field Parts Replacement Service Program	\$ 589	\$0	\$0
00833B – T16040	SORT ⁹ Extension	\$ 1,661	\$0	\$0
	Total	\$ 2,250	\$0	\$0

9 **A. 00811E – T16042: CS-F Field Parts Replacement Service Program**

10 SDG&E is requesting \$0.589 million for 2017 capital expenses associated with the
11 implementation of CS-F’s FPRS Program, as discussed in Section III.A.5.c. of my testimony.
12 The forecast method developed for this cost category is presented in the capital workpapers of
13 Mr. Olmsted (Exhibit SDG&E-24-CWP).

14 **B. 00833B – T16040: SORT Extension Project**

15 SORT is SDG&E’s CS-F work order management system and is used by SDG&E’s CS-F
16 Operations and Dispatch work groups to issue and manage customer- and company- generated
17 work. SORT is essential to maintain CS-F operations across its entire service territory as it
18 schedules, routes and dispatches work to CS-F field technicians.

19 SDG&E is requesting \$1.661 million for 2017 capital expenses related to SORT
20 enhancements. The SORT system has several key components which have reached end-of-life
21 for vendor support. Without vendor support, there is a high risk of an extended or unrecoverable

⁹ SORT refers to Service Order Routing Tool

1 outage of the SORT system. An outage of this magnitude would disrupt CS-F's ability to send
2 orders to field technicians and increase response time to emergency orders. The upgrade will
3 extend the service life of the SORT systems through 2021, add enhanced capability such as turn
4 by turn directions, and reduce server maintenance costs.

5 The forecast method developed for this cost category is presented in the capital
6 workpapers of Mr. Olmsted (Exhibit SDG&E-24-CWP). The underlying cost drivers for this
7 project are the need to replace: (1) physical application servers, (2) database servers, and (3)
8 upgrade software to the latest version.

9 **VI. CONCLUSION**

10 My O&M and capital forecasts were carefully developed and scrutinized by CS-F staff
11 members and me as representing a reasonable and prudent level of funding for SDG&E CS-F
12 operations. The expense forecasts are based on diligent, thorough and transparent consideration
13 of the myriad of factors influencing costs associated with providing CS-F services. The funding
14 requested in my testimony is critical to providing safe, reliable, efficient services at customer
15 premises, and reflects SDG&E's efforts to continuously improve its operations.

16 This concludes my prepared direct testimony.

17 **VII. WITNESS QUALIFICATIONS**

18 My name is Gwen R. Marelli. My business address is 555 West Fifth Street, Los
19 Angeles, California 90013. I am employed by SoCalGas as the Director of Customer Services
20 Staff for the Southern California Gas Company. I am responsible for leading and overseeing the
21 policies and procedures, training, quality assurance, technology and other staff functions that
22 support CS-F operations, including CS-F shared service functions performed on behalf of
23 SDG&E. I have held this position since January 2017.

24 I received a Master of Business Administration degree from Pepperdine University's
25 Graziadio School of Business and Management in 1990 and a Bachelor of Science degree in
26 Mechanical Engineering from the University of California, San Diego in 1986. I have been
27 employed by SoCalGas since 1991 and have held roles of increasing responsibility in Marketing,
28 Communications, Strategy, Operations, Energy Markets and Capacity Products. Prior to joining
29 SoCalGas, I held engineering positions at Bechtel Western Power Company and McDonnell
30 Douglas Corporation.

31 I have previously testified before the California Public Utilities Commission.

APPENDIX A
List of Acronyms

Line No.	Acronym	Definition
1	ACOR	Atmospheric Corrosion
2	BBS	Behavior Based Safety
3	BY	Base Year
4	CGI	Can't Get In
5	CO	Carbon Monoxide
6	CFR	Code of Federal Regulations
7	CPUC	California Public Utilities Commission
8	CS-F	Customer Services Field
9	CSO	Customer Service Order
10	D	Decision
11	DOT	Department of Transportation
12	FOF	Fueling our Future
13	FPRS	Field Parts Replacement Service
14	FTE	Full-time Equivalent
15	GMPCP	Gas Meter Performance Control Program
16	GRC	General Rate Case
17	HBI	High Bill Investigation
18	IT	Information Technology
19	MDT	Mobile Data Terminal
17	MSA	Meter Set Assembly
20	O&M	Operations and Maintenance
21	OSHA	Occupational Safety and Health Administration
22	PMC	Planned Meter Change

APPENDIX A (Continued)

List of Acronyms

Line No.	Acronym	Definition
23	QA	Quality Assurance
24	RAMP	Risk Assessment Mitigation Phase
25	SDG&E	San Diego Gas and Electric
26	SMOBA	Smart Meter Opt-Out Balancing Account
27	SMOMA	Smart Meter Opt-Out Memorandum Account
28	SORT	Service Order Routing Tool
29	TY	Test Year

APPENDIX B

Order Type - Description of Activity Performed

Line No.	ORDER TYPE	DESCRIPTION OF ACTIVITY PERFORMED
1	CHANGE OF ACCOUNT - CA ELEC	This order type is used for field work performed to establish a new customer's account for electric service. No appliance work is performed.
2	CHANGE OF ACCOUNT - CA GAS	This order type is used for field work performed to establish a new customer's account for gas service. These orders are issued when the gas meter is already on.
3	CHANGE OF ACCOUNT - CA GAS & ELEC	This order type is used for field work performed to establish a new customer's account for gas and electric service. These orders are issued when the electricity cannot be turned on remotely and the gas meter is already on.
4	CHANGE OF ACCOUNT - GIVE NOTICE	This order type is used when a field technician was going to shut off gas service but, while at the premises, determines that a new occupant has moved in. The new occupant is given a 24-hour notice of the requirement to establish an account. The gas is left on.
5	CHANGE OF ACCOUNT - RTO	This order type is used when a tenant moves out. Responsibility for the account is moved to the property owner and a field technician restores service. RTO refers to "Return to Owner".
6	COLLECTIONS - CREDIT SHUT OFF	This order type is used when a customer's service is manually shut off for non-payment.
7	COLLECTIONS - FIRST CALL	This order type is used when the customer account is past due and the field employee makes a first attempt to collect. A 48-hour notice is left informing the customer the meter will be shut off if the outstanding balance is not paid.
8	COLLECTIONS - SECOND CALL	This order type results when the customer account is past due. The field employee makes a second attempt to collect. If the second collection attempt fails, the electric and/or gas meter is shut off and secured.
9	COLLECTIONS - THIRD CALL	This order type results when the customer account is past due. This is a third attempt to collect or close meter. If the customer is unable to pay, the meter is turned off and secured.
10	CSO - APPLIANCE ADJUSTMENTS	This order type is used when a customer requests service on a gas appliance (e.g., inoperative water heater).

APPENDIX B (Continued)

Order Type - Description of Activity Performed

Line No.	ORDER TYPE	DESCRIPTION OF ACTIVITY PERFORMED
11	CSO - APPLIANCE MECHANIC WORK	This order type is used when a field technician performs gas appliance/equipment work at a commercial/industrial facility, as well as for follow-up orders where a higher skilled technician is needed to service a customer's gas appliance.
12	CSO - CARBON MONOXIDE-EMERGENCY	This order type is used when a customer reports Carbon Monoxide (CO) symptoms or was transported for medical treatment where CO poisoning is suspected. The field technician validates the operation of the gas appliances and acts to repair or make the appliance safe, as needed.
13	CSO - CARBON MONOXIDE-NON-EMERGENCY	This is a service order for which the customer has requested that a field technician check their premises for the presence of Carbon Monoxide (CO); the customer has not experienced any CO symptoms.
14	CSO - HIGH PRESSURE	This order type is used when a customer has reported possible pressure problems at an appliance. The field technician checks the appliance for proper operation, as well as the pressure level at the meter.
15	CSO - NO GAS	This is a service order for which a customer has indicated they have no gas. The field technician investigates the source of the problem, takes corrective action and restores gas service as needed.
16	CSO - OTHER MISC GAS & ELEC CUSTOMER REQUESTS	This order type is used when a customer calls with a non-standard request. For example, they have no power in a portion of their home or want to know if an exposed pipe in their yard is a gas line. The service technician investigates the customer's concern.
17	CSO - SCHOOL LEAK SURVEYS	This order type is used when a school requests a complete survey of their gas lines to ensure the integrity of their gas system. The field technician performs an inspection, including inspecting all appliances, to validate the system is leak free and/or identify needed repairs.
18	CSO - SEASONAL OFF	This order type is used when a customer requests the gas to be shut off on a heating appliance. The field technician performs a safety check of the appliance and leaves the appliance off.
19	CSO - SEASONAL ON MULTIPLES	This order type is used when a multi-unit premise, such as an assisted living establishment, requests that a service technician light the pilots on gas space heating appliances. The appliances are also checked for safety.
20	CSO - SEASONAL ON SINGLES	This order type is used when a customer (single-unit premise) requests that the pilot on their gas space heating appliance be lit. The appliance is also checked for safety.

APPENDIX B (Continued)

Order Type - Description of Activity Performed

Line No.	ORDER TYPE	DESCRIPTION OF ACTIVITY PERFORMED
21	FUMIGATION/BUG FOGGER	This order type is used when a customer requests that the gas be shut off or restored for fumigation activity. For shut off, the meter is closed and secured. For restore, the gas is restored and appliances are serviced.
22	GAS LEAKS - EMERGENCY B&B INSIDE	This order type is used when a customer requests emergency service to address an interior gas line or connector that is broken. (B&B = broken and blowing)
23	GAS LEAKS - EMERGENCY B&B OUTSIDE	This order type is used when a customer requests emergency service to address an exterior gas line or connector that is broken. (B&B = broken and blowing)
24	GAS LEAKS - EMERGENCY AGENCY REQUEST	This order type is used when an external agency (e.g., fire department) contacts the company and a field technician responds to a gas leak, fire, etc.
25	GAS LEAKS - FIRE AND EXPLOSIONS	This order type is used when a customer requests field response to a fire or explosion.
26	GAS LEAKS - HAZARD	This order type is used when a customer reports a gas leak and, based on the information provided, it is categorized as a possible hazard. The field technician investigates, makes the condition safe, and repairs any leaks to the extent possible. The customer may be referred to an outside service provider if the repair is beyond the scope of the utility.
27	GAS LEAKS – NON-HAZARD	This order type is used when a customer reports a gas leak and, based on the information provided, it is categorized as non-hazardous. The technician investigates, makes the condition safe, and repairs any leaks to the extent possible. The customer may be referred to an outside service provider if the repair is beyond the scope of the utility.
28	HBI	This order type is used when a customer requests that a service technician inspect the facility and related appliances due to a higher than expected bill. (HBI = High Bill Investigation)
29	METER WORK O&M - ATMOSPHERIC CORROSION	This is a service order issued to remedy atmospheric corrosion or other abnormal operating conditions on an above ground meter set assembly (MSA). The field technician identifies and repairs abnormal operating conditions found on the MSA.
30	METER WORK O&M - CURB	This order type is used for DOT-required curb meter inspections. All curb meters are inspected every three years. Follow-up orders to correct conditions found that are not completed as part of the inspection are also included, e.g., replace fittings, regulator, or meter.

APPENDIX B (Continued)

Order Type - Description of Activity Performed

Line No.	ORDER TYPE	DESCRIPTION OF ACTIVITY PERFORMED
31	METER WORK O&M - CUSTOMER COMPANY CHANGE ELECTRIC	This order type is used when an electric meter is changed due to routine maintenance issues.
32	METER WORK O&M - CUSTOMER COMPANY CHANGE GAS	This order type is used when a gas meter is changed due to routine maintenance issues.
33	METER WORK O&M - CUSTOMER COMPANY TEST GAS	This order type is used when the meter is selected for replacement under SDG&E's Gas Meter Performance Control Program, or is replaced in response to a customer request during a high bill investigation (HBI).
34	METER WORK O&M - MISCELLANEOUS	This order type is used when a field technician performs routine maintenance on the gas or electric meter. Examples include installing/removing life support seals and replacing an unreadable meter index.
35	METER WORK O&M - PERIODIC TEST CHANGE GAS	This order type is used when a field technician changes a gas meter so it can be tested for accuracy. These orders are part of SDG&E's Gas Meter Performance Control Program.
36	NONPAY TURN ON - CREDIT CUT INS	This order type is used when a customer's service is turned back on after paying the balance on the account.
37	READ & VERIFY - REREADS	This order type is used when a meter is re-read for billing or other purposes.
38	TURN ON/SHUTOFF - CUST/COMPANY REMOVE/RESET - ELEC	This order type is used when a field technician removes or reinstalls an electric meter.
39	TURN ON/SHUTOFF - CUST/COMPANY REMOVE/RESET - GAS	This order type is used when a field technician removes or reinstalls a gas meter.
40	TURN ON/SHUTOFF - GIVE NOTICE CUT	This order type is used when a customer has been given 24 hours to establish an account and they have not contacted the utility. The field technician closes and secures the meter.
41	TURN ON/SHUTOFF - SHUT OFF ELECTRIC	This order type is used when a customer requests that electric service be shut off. Electric service is shut off remotely when possible.
42	TURN ON/SHUTOFF - SHUT OFF GAS	This is a service request to shut off gas service. The field technician turns off the gas service at the customer's meter.

APPENDIX B (Continued)

Order Type - Description of Activity Performed

Line No.	ORDER TYPE	DESCRIPTION OF ACTIVITY PERFORMED
43	TURN ON/SHUTOFF - SHUT OFF GAS & ELECTRIC	This order type is used when a customer requests that both their electric and gas service be shut off. The field technician closes and secures the gas meter. The electric service is shut off remotely when possible.
44	TURN ON/SHUTOFF - SHUT OFF IN ERROR	This order type is used when gas or electric service is restored after being turned off for an unknown reason.
45	TURN ON/SHUTOFF - SOFT SHUT OFF GAS & ELECTRIC	This order type is used when a customer request was initiated to shut off both the electric and gas service. The service technician does not close the meters. Information is left informing the new customer to call for service.
46	TURN ON/SHUTOFF - SOFT TURN ON GAS & ELECTRIC	This order type is used when a new customer has called for service. The gas meter is read and the electric service is turned on. No appliances are serviced.
47	TURN ON/SHUTOFF - TURN ON ELECTRIC	This order type is used when a new customer has called for service. The field technician turns on the electric service.
48	TURN ON/SHUTOFF - TURN ON GAS & ELECTRIC	This order type is used when a new customer has called for service. The gas and electric service is turned on. All gas appliances are serviced.
49	TURN ON/SHUTOFF - TURN ON GAS	This order type is used when a new customer has called for service. The field technician turns on the gas meter and all gas appliances are serviced.
50	MISCELLANEOUS - HOUSELINE TEST PURGE O&M	This order type is used when customer-owned piping for a pre-established account is tested by the field technician to ensure the gas is odorized.
51	SMART METER	This order type is used for work related to Smart Meter equipment. Examples include Opt-Out and Smart Meter device replacement.
52	CSF INCOMPLETE	This order type is used when a field technician is not able to complete an order (excluding collections orders), e.g., customer not home, cannot access meter, etc.
53	COLLECTIONS INCOMPLETE	This order type is used when a field technician is not able to complete a collections order, e.g., customer not home, etc.
54	SMART METER MODULE TROUBLESHOOTING	This is not an order type but refers to non-fielded work performed by a field technician. When meter changes are performed, the meter is returned to the base where a field technician removes the smart meter module and evaluates it for re-use or replacement. This is not driven by order volume so it is not included in order volume data in Appendix C.

APPENDIX C

**2012 – 2016 Historical Volume by Order Type &
2017 – 2019 Estimated Volume by Order Type**

Line No.	Order Types	Historical Order Volume					Estimated Order Volume		
		2012	2013	2014	2015	BY 2016	2017	2018	TY 2019
1	Change of Account - CA ELEC	1,672	603	435	375	276	304	338	374
2	Change of Account - CA GAS	1,631	1,282	729	675	860	835	804	774
3	Change of Account - CA GAS AND ELEC	697	422	175	165	170	171	173	175
4	Change of Account - GIVE NOTICE	7,136	6,902	5,146	4,365	3,954	4,144	4,383	4,626
5	Change of Account - RTO	2,389	658	304	379	329	334	341	347
6	Collections - CREDIT SHUT OFF	2,274	1,707	1,516	1,092	1,529	1,498	1,460	1,420
7	Collections - FIRST CALL	274,409	278,656	102,248	2,575	1,655	1,801	1,986	2,173
8	Collections - SECOND CALL	33,783	8,054	8,340	16,321	14,708	14,368	13,940	13,505
9	Collections - THIRD CALL	14,815	2,573	1,369	1,877	1,778	1,763	1,744	1,724
10	CSO - APPLIANCE ADJUSTMENTS	39,678	35,456	31,111	32,738	26,614	27,843	29,427	30,932
11	CSO - APPLIANCE MECHANIC WORK	816	851	725	663	532	568	613	657
12	CSO - CARBON MONOXIDE-EMERGENCY	891	973	853	947	849	865	886	906
13	CSO - CARBON MONOXIDE-NON-EMERGENCY	1,392	1,658	1,326	1,365	1,289	1,309	1,336	1,361

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APPENDIX C (Continued)
2012 – 2016 Historical Volume by Order Type &
2017 – 2019 Estimated Volume by Order Type

Line No.	Order Types	Historical Order Volume					Estimated Order Volume		
		2012	2013	2014	2015	BY 2016	2017	2018	TY 2019
14	CSO - HIGH PRESSURE	172	167	148	139	130	134	138	143
15	CSO - NO GAS	12,768	13,913	11,669	10,127	10,504	10,658	10,856	11,044
16	CSO - OTHER MISC GAS & ELEC CUSTOMER REQUESTS	10,960	11,924	10,623	9,746	9,718	9,893	10,118	10,333
17	CSO - SCHOOL LEAK SURVEYS	471	418	475	450	383	401	425	447
18	CSO - SEASONAL OFF	642	821	756	663	539	576	624	670
19	CSO - SEASONAL ON MULTIPLES	9,951	8,339	11,228	9,879	9,707	9,943	10,247	10,536
20	CSO - SEASONAL ON SINGLES	19,982	22,370	17,344	17,623	18,103	18,113	18,127	18,139
21	Fumigation - FUMIGATION/BUG FOGGER	40,597	43,376	40,833	42,763	44,639	44,408	44,110	43,827
22	Gas Leak - EMERGENCY B&B INSIDE	1,154	1,258	1,177	1,291	987	1,042	1,114	1,181
23	Gas Leak - EMERGENCY B&B OUTSIDE	185	249	265	270	341	329	314	299
24	Gas Leak - EMERGENCY- AGENCY REQUESTS	452	548	714	831	754	763	775	786
25	Gas Leak - FIRE & EXPLOSIONS	35	29	12	8	9	9	10	10
26	Gas Leak – GAS LEAKS HAZARD	25,246	21,813	24,898	31,218	24,884	25,682	26,711	27,688
27	Gas Leak - GAS LEAKS- NON-HAZARD	4,147	3,747	3,061	3,928	3,855	3,812	3,757	3,705

APPENDIX C (Continued)

**2012 – 2016 Historical Volume by Order Type &
2017 – 2019 Estimated Volume by Order Type**

Line No.	Order Types	Historical Order Volume					Estimated Order Volume		
		2012	2013	2014	2015	BY 2016	2017	2018	TY 2019
28	HBI - HBI	437	438	473	414	390	403	420	437
29	Meter Work - O & M - ACOR	55	83	38	221	28	48	74	98
30	Meter Work - O & M - CURB	615	420	447	528	394	415	442	468
31	Meter Work - O & M - CUST/COMPANY CHANGE - ELEC	72	249	480	370	136	194	269	340
32	Meter Work - O & M - CUST/COMPANY CHANGE - GAS	2,031	1,991	1,507	1,123	1,184	2,652	2,652	2,652
33	Meter Work - O & M - CUST/COMPANY TEST(CHANGE) - GAS	7,267	5,488	5,936	19	25	56	56	56
34	Meter Work - O & M - MISC COMPANY WORK	14,867	15,040	16,322	17,769	8,934	20,008	20,008	20,008
35	Meter Work - O & M - PERIODIC TEST/CHANGE- GAS	12,640	13,232	6,413	4,198	4,894	10,960	10,960	10,960
36	Nonpay Turn On - CREDIT CUT INS	17,556	2,937	2,737	3,454	3,430	3,389	3,337	3,287
37	Read/Verify - REREADS	11,470	7,788	21,527	20,090	19,912	20,232	20,644	21,036

APPENDIX C (Continued)

**2012 – 2016 Historical Volume by Order Type &
2017 – 2019 Estimated Volume by Order Type**

Line No.	Order Types	Historical Order Volume					Estimated Order Volume		
		2012	2013	2014	2015	BY 2016	2017	2018	TY 2019
38	TurnOn/ShutOff - CUST/ COMPANY REMOVE/RESET - ELEC	35	19	56	31	10	17	25	33
39	TurnOn/ShutOff - CUST/ COMPANY REMOVE/RESET - GAS	265	233	269	238	228	235	243	251
40	TurnOn/ShutOff - GIVE NOTICE CUT	4,165	3,665	2,779	2,366	1,996	2,126	2,294	2,454
41	TurnOn/ShutOff - SHUT OFF ELEC	4,966	4,423	4,354	4,020	4,001	4,075	4,171	4,261
42	TurnOn/ShutOff - SHUT OFF GAS	8,863	7,896	6,863	5,928	5,358	5,600	5,911	6,207
43	TurnOn/ShutOff - SHUT OFF GAS AND ELEC	746	629	651	590	689	681	672	663
44	TurnOn/ShutOff - SHUT OFF IN ERROR	442	238	238	205	258	253	247	241
45	TurnOn/ShutOff - SOFT SHUT OFF GAS ELEC	25,165	21,063	18,307	16,261	14,808	15,421	16,211	16,961
46	TurnOn/ShutOff - SOFT TURN ON GAS TURN ON ELEC	225	174	143	99	150	146	140	135
47	TurnOn/ShutOff - TURN ON ELEC	9,196	6,250	5,236	4,537	4,060	4,261	4,519	4,765
48	TurnOn/ShutOff - TURN ON G/E	2,976	1,394	1,017	792	654	709	779	846

APPENDIX C (Continued)

**2012 – 2016 Historical Volume by Order Type &
2017 – 2019 Estimated Volume by Order Type**

Line No.	Order Types	Historical Order Volume					Estimated Order Volume		
		2012	2013	2014	2015	BY 2016	2017	2018	TY 2019
49	TurnOn/ShutOff - TURN ON GAS	9,609	9,219	8,104	6,485	5,677	6,034	6,495	6,933
50	Miscellaneous - HOUSELINE TEST/PURGE - O&M	331	370	185	189	141	151	164	176
51	Miscellaneous - SMART METER	12,150	6,732	7,144	3,526	4,434	4,643	4,913	5,169
52	Collections - INCOMPLETE	6,442	5,555	3,340	3,950	3,377	2,522	2,513	2,504
53	CSF - INCOMPLETE	28,940	24,069	16,899	16,434	15,697	16,745	17,233	17,590
54	TOTAL	689,871	608,362	408,945	306,310	279,961	303,546	310,150	316,315

SDG&E 2019 GRC Testimony Revision Log –December 2017

Exhibit	Witness	Page	Line or Table	Revision Detail
SDG&E-17	Gwen Marelli	GRM-3	Table GRM-3	For SDG&E-3 – Employee, Contractor, Customer, and Public Safety line item: 1) changed BY 2016 Embedded Base Costs from \$4,512 to \$4,570; 2) changed TY 2019 Estimate Incremental from \$243 to \$228 and; 3) changed TY 2019 Estimate Total from \$4,755 to \$4,798. For the Total RAMP Costs line item: 1) changed BY 2016 Embedded Base Costs from \$4,512 to \$4,570; 2) changed TY 2019 Estimate Incremental from \$292 to \$277 and; 3) changed TY 2019 Estimate Total from \$4,804 to \$4,847.
SDG&E-17	Gwen Marelli	GRM-5	Table GRM-5	Changed “SCG-2” to “SDG&E-3”
SDG&E-17	Gwen Marelli	GRM-5	Table GRM-5	Changed “SCG-7” to “SDG&E-17”
SDG&E-17	Gwen Marelli	GRM-6	Table GRM-6	For the Customers Orders Relative to Public Safety line item: 1) changed BY 2016 Embedded Base Costs from \$4,262 to \$4,319; 2) changed TY 2019 Estimate Incremental from \$272 to \$256 and; 3) changed TY 2019 Estimate Total from \$4,533 to \$4,575. For the Total line item: 1) changed BY 2016 Embedded Base Costs from \$4,512 to \$4,570; 2) changed TY 2019 Estimate Incremental from \$244 to \$228 and; 3) changed TY 2019 Estimate Total from \$4,756 to \$4,798. For the Total Safety Related Risk Mitigation Costs line item: 1) changed BY 2016 Embedded Base Costs from \$4,512 to \$4,570; 2) changed TY 2019 Estimate Incremental from \$292 to \$277 and; 3) changed TY 2019 Estimate Total from \$4,804 to \$4,847.
SDG&E-17	Gwen Marelli	GRM-7	23	Changed “Exhibit SDG&E-17-WP” to “Exhibit SDG&E-17-WP-R”

SDG&E 2019 GRC Testimony Revision Log –December 2017 (Continued)

Exhibit	Witness	Page	Line or Table	Revision Detail
SDG&E-17	Table GRM-7	GRM-8	Table GRM-7	For CS-F – Operations line item: 1) changed BY 2016 Embedded Base Costs from \$4,415 to \$4,473; 2) changed TY 2019 Estimated Incremental from \$314 to \$299 and; 3) changed TY 2019 Estimated Total from \$4,729 to \$4,772. For Total line: 1) changed BY 2016 Embedded Base Costs from \$4,512 to \$4,570; 2) changed TY 2019 Estimated Incremental from \$292 to \$277 and; 3) changed TY 2019 Estimated Total from \$4,804 to \$4,847
SDG&E-17	Gwen Marelli	GRM-8	22	Changed “Exhibit SDG&E-17-WP – CS - Field” to “Exhibit SDG&E-17-WP-R – CS - Field”
SDG&E-17	Gwen Marelli	GRM-10	3	Changed \$4,729,000 to \$4,772,000
SDG&E-17	Gwen Marelli	GRM-10	4	Changed 29.8% to 30%
SDG&E-17	Gwen Marelli	GRM-11	Table GRM-10	Removed “Meter Work - Capital - Meter Sets - Gas” order type from the table.
SDG&E-17	Gwen Marelli	GRM-12	25	Changed “17-WP” to “17-WP-R”
SDG&E-17	Gwen Marelli	GRM-14	7	Changed “Exhibit-17-WP” to “Exhibit-17-WP-R”
SDG&E-17	Gwen Marelli	GRM-15	17	Added a footnote after the statement “requesting \$0.736 million.” The footnote states “If the four year GRC cycle is adopted, as proposed in the testimony of Kenneth Deremer (Exhibit SDG&E-43), then this calculation will need to be revised to reflect such adoption.”
SDG&E-17	Gwen Marelli	GRM-19	2	Added a footnote after the statement “. . . one-third of the total cost;” The footnote states “If the four year GRC cycle is adopted, as proposed in the testimony of Kenneth Deremer (Exhibit SDG&E-43), then this calculation will need to be revised to reflect such adoption. ”

SDG&E 2019 GRC Testimony Revision Log –December 2017 (Continued)

Exhibit	Witness	Page	Line or Table	Revision Detail
SDG&E-17	Gwen Marelli	GRM-20	30	Changed “Ex. 17-WP” to “Ex. 17-WP-R”
SDG&E-17	Gwen Marelli	GRM-22	23	Changed “18” to “19”
SDG&E-17	Gwen Marelli	GRM-23	Table GRM-19	In Sub-Total: 3 Year Average line, changed “GRM-17” to “GRM-18”
SDG&E-17	Gwen Marelli	GRM-24	13	Changed CS-F “operations” to “Support”
SDG&E-17	Gwen Marelli	GRM-25	Table GRM-22	In Sub-Total: 3 Year Average line, changed “GRM-20” to “GRM-21”