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Commissioner	:	<u>M. Picker</u>
ALJ	:	<u>S. Roscow</u>
Witness	:	<u>S. Chia</u>



OFFICE OF RATEPAYER ADVOCATES
CALIFORNIA PUBLIC UTILITIES COMMISSION

**Report on the Results of Operations
for
Pacific Gas and Electric Company
Test Year 2017
General Rate Case**

**Gas Distribution Expenses
Part 1 of 2**

San Francisco, California
April 8, 2016

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1 **GAS DISTRIBUTION EXPENSES**
2 **Part 1 of 2**

3 **I. INTRODUCTION**

4 This exhibit presents the analyses and recommendations of the Office of
5 Ratepayer Advocates (ORA) regarding Pacific Gas and Electric Company's (PG&E)
6 forecasts of Gas Distribution operations and maintenance (O&M) expenses for Test
7 Year (TY) 2017. This exhibit addresses expenses listed above, including Corrosion
8 Control and Leak Management. Exhibit (Ex.) ORA-7 (Gas Distribution Expenses,
9 Part 2 of 2) will address PG&E Asset Family – Distribution Mains & Services and
10 Asset Families – Measurement and Control, and Compressed Natural Gas Facilities.

11 Gas distribution O&M expenses are for work activities related to operation
12 labor and expenses, storage, operation supervision and engineering, main and
13 service expenses, measurement and regulator storage expenses, other gas
14 distribution expenses, maintenance supervision and engineering, maintenance of
15 mains and services, measurement and regulator station expenses, maintenance of
16 meters and house regulators, and maintenance of other equipment. Some specific
17 work activities include leakage surveys, leak repairs, application of corrosion control
18 measures, valve maintenance, monitoring meter accuracy, odorant, and locating and
19 marking buried pipes to avoid damage caused from digging by others.

20 **II. SUMMARY OF RECOMMENDATIONS**

21 The following summarizes ORA's recommendations regarding Gas
22 Distribution expenses for 2017 which are addressed in this exhibit:

- 23 • ORA is recommending that PG&E continue the current 5-year leak
24 survey cycle in contrast to PG&E's proposal to transition to a 4-year
25 leak survey cycle.
- 26 • ORA is recommending \$194 million for PG&E's Distribution
27 Operations as compared to PG&E's forecast of \$201 million.
- 28 • ORA is recommending \$52 million for PG&E's Corrosion Control
29 Program as compared to PG&E's forecast of \$63 million.

- 1 • ORA is recommending \$111 million for PG&E's Leak Management
2 Program as compared to PG&E's forecast of \$130 million.
- 3 • ORA is recommending \$26 million for PG&E's Gas System
4 Operations as compared to PG&E's forecast of \$29 million.
- 5 • ORA does not take issue with PG&E's forecast of \$6.281 million for
6 PG&E's New Business and Work at the Request of Others.
- 7 • ORA is recommending \$1.043 million for MWC GZ-RD&D Non-
8 Balancing Account as compared to PG&E's request of \$2.5 million.
- 9 • ORA is recommending \$7.0 million for MWC JV-Maintain IT
10 Applications and Infrastructure as compared to PG&E's request of
11 \$35 million.
- 12 • ORA recommends no addition funding for the As-Built Record
13 Consolidation Project in 2017 in MWC JV.

14 Table 6-1 compares ORA's and PG&E's 2017 forecasts of Gas Distribution
15 expenses addressed in this exhibit:
16

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**Table 6-1
Gas Distribution
2017 Expense Forecast
(In Thousands of Nominal Dollars)**

Description (a)	ORA Recommended (b)	PG&E Proposed¹ (c)	Amount PG&E>ORA (d=c-b)	Percentage PG&E>ORA (e=d/b)
MWC DD-Provide Field Service (Chapter 6A)	\$108,539	\$108,539	\$0	0%
MWC DF-F&E T&D Locate & Mark (Chapter 6A)	40,546	40,546	0	0%
MWC FH-GD Preventive Main (Chapter 6A)	18,460	20,169	1,709	9.3%
MWC FI-GD Corrective Main (Chapter 6A)	21,983	27,469	5,486	25%
MWC HY-Change/Maint Used Gas Meters (Ch. 6A)	4,280	4,280	0	0%
MWC DG-Corrosion Control (Chapter 6B)	29,394	29,394	0	0%
MWC FH (Chapter 6B)	2,730	5,246	2,516	9.2%
MWC FI (Chapter 6B)	20,275	28,301	9,889	53%
MWC DE-Leak Survey (Chapter 6C)	34,870	40,122	5,252	15%
MWC FI-Leak Repair (Chapter 6C)	75,764	90,150	14,386	19%
MWC FG-GD Operate System (Chapter 7)	15,557	17,109	1,552	10%
MWC GG-Gas Trans & Dist Sys Model (Chap. 7)	10,902	12,274	1,372	12.6%
MWC LK-Gas WRO (Ch. 8)	6,281	6,281	0	0%
MWC GZ-R&D Non-Bal Acct (Chapter 9)	1,043	2,500	1,457	140%
MWC JV-Maintain IT Apps & Infrastructure (Ch. 9)	7,000	35,438	28,438	406%
MWC GF-Mapping Support (Chapter 10)	6,358	6,358	0	0%
MWC DN-Training Curriculum Develop (Ch. 10)	4,078	4,078	0	0%
MWC AB-Quality Management (Chapter 10)	3,751	3,751	0	0%
MWC AB-Miscellan (Ch. 10)	857	857	0	0%
Total	\$412,668	\$482,862	\$70,194	17%

¹ Ex. PG&E-3, Workpapers, pp. WP 6A-1, WP 6B-1. Ex. PG&E-3, pp. 6C-37, 6C-42, 7-44, 8-24, 9-42, and 10-30. Small differences between Ex. PG&E-3 testimony and RO Model is due to PG&E's labor escalation update in Ex. PG&E-19.

1 **III. DISTRIBUTION OPERATIONS AND MAINTENANCE**

2 In Ex. PG&E-3, Chapter 6A, PG&E addresses its Distribution O&M expense
 3 forecasts for Locate and Mark, Field Services, and Preventative and Corrective
 4 Maintenance activities which include expenses for MWCs DD, DF, FH, FI and HY.
 5 ORA addresses the MWC associated with Exhibit PG&E-3, Chapter 6A in this
 6 section.

7 **A. Overview of PG&E’s and ORA’s Forecasts**

8 The following table summarizes PG&E’s request and ORA’s recommendation
 9 for Distribution Operations and Maintenance expenses.

10 **Table 6-2**
 11 **Distribution Operations & Maintenance**
 12 **2010-2014 Recorded and 2017 Expense Forecast**
 13 **(In Thousands of Nominal Dollars)**

Description	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
MWC DD-Provide Field Service	\$63,703	\$77,026	\$96,432	\$98,295	\$104,564	\$108,539	\$108,539
MWC DF-F&E T&D Locate & Mark	27,404	27,227	35,261	43,696	37,689	40,546	40,546
MWC FH-GD Preventive Main	17,680	15,356	18,865	21,508	16,691	20,169	18,460
MWC FI-GD Corrective Main	3,517	3,958	12,633	16,588	11,497	27,469	21,983
MWC HY-Change/Maint Used Gas Meters	0	0	848	2,533	5,211	4,280	4,280
JU-GD Leak Srvy & Repair (See Note)	0	0	0	0	2,270	0	0
Total	\$112,304	\$123,567	\$164,039	\$182,620	\$177,922	\$201,003	\$193,808

14 Source: 2010-2014 data from Ex. PG&E-3, p. 6A-39. Note: Costs in MWC JU contain the portion of
 15 the costs in MAT FIS that are above the cost cap established in D. 14-08-032. The total costs for
 16 work in MWC FI are \$13.767M in 2014.

17 **B. ORA’s Analysis**

18 PG&E is forecasting \$201.003 million in expenses in 2017 for Distribution
 19 O&M which is \$23.081 million above or 13 percent above 2014 recorded expenses
 20 of \$177.992 million. ORA is recommending \$193.808 million in expenses in 2017 for
 21 Distribution O&M which is \$15.886 million or 9 percent above 2014 recorded
 22 expenses.

1 **1. MWC DD: Provide Field Service**

2 PG&E is requesting \$108.539 million in expenses for MWC DD-Provide Field
3 Service in TY 2017 or an increase of \$3.975 million or 4 percent above 2014
4 recorded. ORA does not take issue with PG&E’s request for MWC DD.

5 PG&E includes costs for work performed responding to gas odor calls, carbon
6 monoxide monitoring, customer requests for starts and stops of gas service,
7 appliance pilot relights, fumigation, and appliance safety checks in MWC DD. The
8 Gas Service Representatives (GSRs) also perform maintenance work including
9 Atmospheric Corrosion (AC) remediation and regulator replacements. In some
10 situations, the GSRs respond to emergency situations as first responders.² The test
11 year increase is based primarily on PG&E’s plan of treating all gas odor calls as
12 immediate response by removing the Immediate Response (IR) Filter³ by the middle
13 of 2015. PG&E says it will hire 35 Gas Service Representatives (GSRs) in 2015 and
14 will fully train them to perform GSR duties starting in 2016. PG&E says that the
15 removal of the IR Filter will increase overall costs in MWC DD, as well as the work in
16 MATs HYI and FIS which are also performed by GSRs.⁴

17 **2. MWC DF: Locate and Mark**

18 PG&E is requesting \$40.546 million in expenses in TY 2017 which is \$2.857
19 million or 7.6 percent above 2014 recorded expenses for MWC DF. ORA does not
20 take issue with PG&E’s request for MWC DF.

21 **3. MWC FH: Preventive Maintenance**

22 PG&E is requesting \$20.169 million in expenses in 2017 which is \$3.478
23 million or 21 percent above 2014 recorded expenses for MWC FH.⁵ ORA is

² Ex. PG&E-3, p. 6A-29

³ PG&E refers to the Immediate Response Filter as the differentiation of customer calls into immediate response and same day response. (Workpapers to Ex. PG&E-3, p. WP 6A-78)

⁴ Ex. PG&E-3, pp. 6A-30 and 6A-31

⁵ Ex. PG&E-3, p. 6A-39

1 recommending \$18.460 million in expenses in TY 2017 which is \$1.769 million or 11
 2 percent above 2014 recorded expenses for MWC FH.

3 MWC FH includes maintenance and inspection of Supervisory Control and
 4 Data Acquisition (SCADA) equipment, regulator stations, farm taps, valves,
 5 miscellaneous maintenance on mains and services, and special projects.⁶ The
 6 following provides the 2010 to 2014 recorded expenses and 2017 forecast expenses
 7 for MWC FH.

8 **Table 6-3**
 9 **MWC FH – Preventative Maintenance**
 10 **2010-2014 Recorded and 2017 Expense Forecast**⁷
 11 **(In Thousands of Nominal Dollars)**

MAT Code	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
FHA-Maint-Prev-G Mains	\$1,215	\$1,316	\$2,389	\$2,882	\$1,552	\$1,172	\$1,172
FHB-Maint-Prev-G Regulator Station	4,692	6,051	6,266	5,817	4,936	5,414	5,414
FHC-Maint-Prev- Gas Farm Tap	0	0	0	306	546	422	422
FHE-Maint-Prev- Gas Services	1,726	3,011	3,506	4,801	3,375	2,606	2,606
FHG-Maint-Prev-G Main Valves	1,301	1,210	1,059	1,356	1,275	1,893	1,893
FHI-Maint-Corr G Service Valves	1,706	1,902	2,447	2,413	2,003	3,172	2,071
FHJ-Gas Non- Recurring Projects	5,275	966	1,590	795	290	900	290
FHO-PM SCADA	0	0	0	0	0	591	591
FHP-CM SCADA	0	0	0	0	0	1,075	1,075
FH_NA-No MAT Code	1,765	900	1,610	3,138	2,714	2,926	2,926
Total	\$17,680	\$15,356	\$18,867	\$21,508	\$16,691	\$20,169	\$18,460

12 ORA does not take issue with PG&E's forecast for MAT Codes FHA, FHB,
 13 FHC, FHE, FHG, FHO, FHP and FH_NA. However, ORA forecasts lower expenses
 14 for MAT Codes FHI and FHJ which are discussed in the following sections.

⁶ Ex. PG&E-3, p. 6A-10

⁷ Ex. PG&E-3, Workpapers, pp. WP 6A-18 and WP 6A-19. (Minor differences are due to rounding)

1 **a. MAT Code FHI: Service Valves Replaced**

2 PG&E is forecasting \$3.172 million in 2017 which is \$1.169 million or 58
3 percent higher than 2014 recorded expenses for service valves replacements.⁸

4 ORA is recommending \$2.071 million in 2017 based on a lower unit cost for service
5 valves replacements than PG&E's request.

6 PG&E says the increase in the 2017 forecast reflects work that was originally
7 planned in 2016, but re-prioritized to 2017 and an increase in unit costs from 2014 to
8 2015. PG&E forecasts to complete 18,659 units of work at a unit cost of \$169.99 in
9 2017. PG&E says that the 2015 unit cost is based on historical unit costs including
10 2014 data. PG&E then escalates the 2015 unit cost to 2016 and 2017 using
11 standard escalation and reduced for identified efficiencies.⁹

12 ORA accepts PG&E's 2017 forecast of 18,659 units of work, but takes issue
13 with PG&E's 2017 unit cost forecast of \$169.99. The recorded unit cost is \$135 in
14 2014 and \$111 in 2015. ORA recommends using PG&E's 2015 unit cost of \$111
15 for 2017 as this is the most recent recorded unit cost. The unit costs for MAT Code
16 FHI have been declining from \$214 in 2011 to \$111 in 2015.¹⁰ As a result, ORA
17 recommends \$2.071 million for MAT Code FHI in 2017.

18 **b. MAT Code FHJ: Gas Non-Recurring Projects**

19 PG&E is forecasting \$900,000 in 2017 which is \$610,000 or 210 percent
20 above 2014 recorded for MAT Code FHJ.¹¹ ORA is recommending \$290,000 in
21 2017 based on 2104 recorded data. This MAT Code includes costs for gas
22 distribution non-recurring projects.

⁸ Ex. PG&E-3, p. 6A-28

⁹ Ex. PG&E-3, Workpapers, p. WP 6A-54

¹⁰ PG&E's response to ORA-PG&E-155, Q. 1

¹¹ Ex. PG&E-3, p. 6A-28

1 PG&E's forecast is based on an imputed \$50,000 needed for each of PG&E's
2 18 divisions to perform various activities.¹² PG&E states, "PG&E records costs in
3 this MAT code for maintenance activities on non-gas carrying facilities where there is
4 no specified maintenance cycle....This work is in most cases, emergent work for
5 which PG&E has only a few months' notice to perform. As such, PG&E has not yet
6 identified specific projects to be completed in 2017."¹³

7 In Table 6-3, the 2010 to 2014 recorded expenses show that expenses have
8 been declining from \$1.590 million in 2012 to \$290,000 in 2014. The 2015 recorded
9 expenses continue to decline to \$199,000 which is below 2014 recorded
10 expenses.¹⁴ ORA recommends using 2014 recorded expenses of \$290,000 to
11 forecast the 2017 expenses. PG&E does not have specific projects forecasted for
12 this MWC. The expenses recorded in this MAT Code are for emergent work or
13 funding for contingencies. The historical recorded expenses show that expenses in
14 this MAT Code are on a decline. ORA recommends \$290,000 for 2017 for MAT
15 Code FHJ.

16 **4. MWC FI: Corrective Maintenance**

17 PG&E is requesting \$27.469 million in expenses in 2017 which is \$15.972
18 million or 139 percent above 2014 recorded expenses for MWC FI.¹⁵ ORA is
19 recommending \$21.983 million in expenses in TY 2017 for MWC FI. ORA's forecast
20 is about \$8.216 million above (or 60 percent higher) than the 2014 recorded
21 expense level.

22 MWC FI includes repair and replacement of Supervisory Control and Data
23 Acquisition (SCADA) equipment, regulator stations, farm taps, valves, miscellaneous

¹² Ex. PG&E-3, p. 6A-28

¹³ PG&E's response to ORA-PG&E-038, Q. 12

¹⁴ PG&E's response to ORA-PG&E-155, Q. 1

¹⁵ Ex. PG&E-3, p. 6A-39

1 maintenance on mains and services, and special projects.¹⁶ The following provides
 2 the 2010 to 2014 recorded expenses and 2017 forecast expenses for MWC FI.

3 **Table 6-4**
 4 **MWC FI – Corrective Maintenance**
 5 **2010-2014 Recorded and 2017 Expense Forecast¹⁷**
 6 **(In Thousands of Nominal Dollars)**

MAT Code	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
FIB-Maint-Corr-G Reg General	\$2,540	\$3,215	\$2,745	\$3,244	\$3,444	\$4,281	\$4,281
FIC-Maint-Corr-C Farm Tap	2	0	0	116	263	318	318
FIF-Maint-Corr-G Main Valves	788	743	1,296	634	790	1,384	1,384
FIS-Leak Survey Meter Repair	0	0	8,592	12,595	7,000	21,487	16,000
FI_NA	186	0	0	0	0	0	0
JU-GD Leak Srvy & Repair ¹⁸	0	0	0	0	2,270	0	0
Total	\$3,517	\$3,958	\$12,633	\$16,588	\$13,767	\$27,469	\$21,983

7 ORA does not take issue with PG&E's request for MAT Code FIB, FIC, and
 8 FIF. ORA takes issue with PG&E's forecast for MAT Code FIS which is discussed in
 9 the following section.

10 **a. MAT Code FIS: Leak Survey Meter Repair**

11 PG&E is requesting \$21.487 million in expenses in 2017 which is \$14.487
 12 million or 207 percent above 2014 recorded expenses for MAT Code FIS. The full
 13 2014 cost for Leak Survey Meter Repair is \$9.270 million of which \$2.270 million is
 14 recorded in MAT JU for the cost for the meter set leak repairs that are above the

¹⁶ Ex. PG&E-3, p. 6A-10

¹⁷ Ex. PG&E-3, Workpapers, pp. WP 6A-18 and WP 6A-20. 2015 data from PG&E's response to ORA-PG&E-155, Q. 1. (Minor differences are due to rounding)

¹⁸ Costs in MWC JU contain the portion of the costs in MAT FIS that are above the cost cap and not recoverable in rates. (Ex. PG&E-3, Workpapers, p. WP 6A-76)

1 cost cap established in D. 14-08-032 and not recoverable in rates, and \$7.0 million is
2 in MAT Code FIS.¹⁹

3 ORA is recommending \$16 million in expenses in 2017 forecast for MAT
4 Code FIS which is \$6.730 million or 73 percent above 2014 recorded expenses for
5 meter set leak repairs.

6 MAT Code FIS records expenses for repairing the non-gradable and non-
7 hazardous meter set leaks identified during the leak survey process. These non-
8 hazardous meter set leaks are repaired or remediated by GSRs. There is no
9 regulatory requirement that non-hazardous meter set leaks be repaired.²⁰

10 At the end of 2011, PG&E had approximately 152,000 repair orders for non-
11 hazardous leaks at the meter. PG&E received funding in the 2014 GRC to eliminate
12 the previously identified 152,000 repair work in 2012 and 2013 and repair 48,400
13 new meter set leaks annually starting in 2014. However, PG&E did not eliminate
14 this previously identified work.²¹

15 PG&E is forecasting a unit cost of \$193.15 and repairing 111,244 units of
16 non-hazardous meter set leaks in 2017. PG&E says the increase is a result of an
17 increase in the number of leaks to be repaired, including repair work identified in
18 prior years. PG&E says the increased is also from the expanded use of the Picarro
19 technology and its proposed 4-year leak survey cycle in 2017.²² PG&E used the
20 average of its 2017 to 2019 forecasts of meter set leak repairs to forecast the
21 111,244 units for 2017.²³

¹⁹ Ex. PG&E-3, Workpapers, p. WP 6A-61; see Table 6-4

²⁰ Ex. PG&E-3, p. 6A-15

²¹ Ex. PG&E-3, p. 6A-16

²² Ex. PG&E-3, p. 6A-28

²³ Ex. PG&E-3, Workpapers, pp. WP 6A-61 and WP 6A-85

1 In 2015, PG&E identified 54,348 meter set leaks. At the end of 2015, PG&E
2 has 62,536 non-hazardous leaks at the meter pending repair.²⁴ The following table
3 provides the number of non-hazardous meter set leaks that PG&E repaired during
4 2010 to 2015.

5 **Table 6-5**
6 **PG&E's Recorded Units for MAT Code FIS²⁵**
7 **2010 to 2015**

2010	2011	2012	2013	2014	2015
12,297	15,063	84,761	77,480	50,732	36,307

8 ORA does not take issue with PG&E's unit cost forecast of \$193.15 for MAT
9 Code FIS. ORA is recommending a forecast of repairing 83,000 units of non-
10 hazardous meter set leaks in 2017 compared to PG&E's forecast of repairing
11 111,244 units.

12 On a 5-year leak survey cycle, ORA forecasts performing 494,900 leak
13 surveys using the Picarro Surveyor and 446,333 leak surveys using traditional foot
14 surveyors. Using PG&E's Picarro's leak meter set leak find rate of 10 percent and
15 PG&E's traditional foot surveyors' leak meter set find rate of 7.5 percent,²⁶ ORA
16 forecast 49,490 meter set leaks with Picarro and 33,475 meter set leaks with
17 traditional foot surveyors which totals approximately 83,000 units. ORA's
18 recommendation to repair 83,000 units at a unit cost of \$193.15 is \$16 million.

19 PG&E recorded expenses of \$9.270 million in 2014 and \$6.697 million in
20 2015 to repair non-hazardous meter set leaks which averages to \$8.135 million over
21 these two years. ORA's recommendation provides PG&E with \$3.902 million or 48
22 percent above the two-year average of PG&E's 2014 and 2015 recorded expenses
23 of \$8.135 million to address non-hazardous meter set leaks.

²⁴ PG&E's response to ORA-PG&E-196, Q. 1

²⁵ PG&E's responses to ORA-PG&E-038, Q. 16 and ORA-PG&E-155, Q. 1

²⁶ Ex. PG&E-3, p. WP 6A-85

1 These non-hazardous meter set leaks are remediated or repaired by GSRs.
2 ORA did not take issue with PG&E’s funding request for 35 additional GSRs in MWC
3 DD. Therefore, the additional funding for 35 additional GSRs in MWC DD and
4 ORA’s recommendation of \$16 million in MAT Code FIS provides PG&E sufficient
5 funding to remediate non-hazardous meter set leaks in 2017.

6 **IV. CORROSION CONTROL**

7 In Ex. PG&E-3, Chapter 6B, PG&E addresses PG&E’s corrosion control
8 activities, other than atmospheric corrosion on meter sets. PG&E’s Corrosion
9 Control program addresses its natural gas distribution assets that may be at risk for
10 corrosion threats, excluding mitigation of distribution customer meter set corrosion
11 issues.²⁷ Corrosion is a naturally occurring process that reduces the effectiveness
12 of steel to contain pressurized natural gas. Steel gas pipelines are particularly
13 susceptible to corrosion because they are exposed to potentially corrosive agents
14 such as the soil, air, and the natural gas being transported. Distribution steel
15 pipelines are susceptible to underground external corrosion and atmospheric
16 corrosion (AC).²⁸

17 External corrosion is a loss of metal that starts on the outside of the pipeline
18 or appurtenance for buried facilities. To protect against external corrosion, pipelines
19 are required to be well coated and have adequate cathodic protection (CP).
20 Mitigation methods for addressing external corrosion include re-coating the pipeline,
21 replacing/installing CP systems, isolating the system from foreign objects, identifying
22 and correcting influence from foreign currents, and replacing steel pipe with plastic
23 pipe.²⁹

²⁷ Ex. PG&E-3, Chapter 6A addresses cost of atmospheric corrosion mitigation on meter sets covered under MWC HY.

²⁸ Ex. PG&E-3, p. 6B-1

²⁹ Ex. PG&E-3, p. 6B-2

1 Atmospheric corrosion involves metal loss on the external surfaces of the
2 appurtenances when exposed to moisture in the air. Identification is made through
3 visual examination combined with analysis of the effect of the metal loss on the
4 integrity of the span, vessel, or structure. Mitigation can include sanding, and
5 repainting or if the corrosion is severe, replacement.³⁰ This section discusses
6 PG&E's and ORA's 2017 forecasts for PG&E's Corrosion Control program.

7 **A. Overview of PG&E's and ORA's Forecasts**

8 PG&E is requesting \$62.941 million in expenses in 2017 which is \$26.350
9 million or 72 percent above 2014 recorded expenses for its Corrosion Control
10 program.

11 ORA is recommending \$52.399 million in expenses in 2017 which is \$15.808
12 million or 43 percent above 2014 recorded expenses for PG&E's Corrosion Control
13 Program. The following table summarizes 2010 to 2014 recorded expenses and
14 PG&E's request and ORA's recommendation for Corrosion Control Program
15 expenses.

³⁰ Ex. PG&E-3, p. 6B-2

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**Table 6-6
Corrosion Control
2010-2014 Recorded and 2017 Expense Forecast
(In Thousands of Dollars)**

Description	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
MWC DG- GD Cathodic Protection	\$9,822	\$13,972	\$33,211	\$13,576	\$10,495	\$29,394	\$29,394
MWC FH- GD Preventive Maint	7	43	38	149	1,349	5,246	2,730
MWC FI- GD Corrective Maint	4,161	4,253	7,197	14,477	9,919	28,301	20,275
MWC JU-GD Leak Survey & Repair ³¹	0	0	0	0	14,828	0	0
Total	\$13,990	\$18,269	\$40,446	\$28,203	\$36,591	\$62,941	\$52,399

6 Source: 2010-2014 data from Ex. PG&E-3, Workpapers, p. WP 6B-1 and Ex. PG&E-18, p.18-38

7 **B. ORA's Analysis**

8 **1. MWC DG-Gas Distribution Cathodic Protection**

9 PG&E is requesting \$29.394 million in expenses in 2017 which is \$18.899
10 million or 1,380 percent above 2014 recorded expenses for MWC DG. ORA does
11 not take issue with PG&E's request for MWC DG. The following table provides 2010
12 to 2014 recorded expenses and 2017 forecast expenses for MWC DG.

13

³¹ Costs in MWC JU contain the portion of the costs in MAT FIQ that are above the cost cap. The total cost for work in MWC FI is \$24.757 million in 2014. (Ex. PG&E-3, Workpapers, p. WP 6B-1)

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Table 6-7
MWC DG – Gas Distribution Cathodic Protection
2010-2014 Recorded and 2017 Expense Forecast
(In Thousands of Nominal Dollars)

MAT Code	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
DGA-Cath Protec Monitoring	\$3,522	\$3,575	\$3,267	\$3,215	\$2,791	\$3,983	\$3,983
DGB-Cath Protec Troubleshooting	3,807	4,623	5,093	6,731	5,483	8,160	8,160
DGC-Cath Protec Rectifier Maint	0	41	760	785	728	798	798
DGD-Cath Protec Resurvey	1,177	1,875	1,668	1,465	1,026	5,533	5,533
DGE-G-Isolated Steel Svc Evaluat	128	3,018	20,973	1,172	88	0	0
DGF-G Unprotect Steel Main Evalu	0	0	0	0	0	1,221	1,221
NA-No Mat Code	1,188	841	1,449	209	379	9,699	9,699
Total	\$9,822	\$13,972	\$33,211	\$13,576	\$10,495	\$29,394	\$29,394

6

Source: 2010-2014 data from Ex. PG&E-3, Workpapers, pp. WP 6B-11and WP 6B-12 and Ex.

7

PG&E-18, p.18-40

8

a. MAT Code DGB-Cathodic Protection Trouble Shooting

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PG&E is requesting \$8.160 million in expenses in 2017 which is \$2.677

11

million or 49 percent above 2014 recorded expenses for MAT Code DGB.³² ORA

12

does not take issue with PG&E’s forecast.

13

PG&E’s CP troubleshooting program identifies, locates and plans corrective action for deficiencies detected during the CP Monitoring program. PG&E says that maintenance personnel or corrosion mechanics troubleshoot the issue by identifying and locating the problem such as “low reads,” which are often an indication of a CP system failure, shorting or bypassing of meter insulators.³³

18

³² Ex. PG&E-3, p. 6B-40

³³ Ex. PG&E-3, Workpapers, p. WP 6B-35

1 **b. MAT Code DGD-CP Resurvey**

2 PG&E is requesting \$5.533 million in expenses in 2017 which is \$4.507
3 million or 4.4 percent above 2014 recorded expenses for MAT Code DGD.³⁴ ORA
4 does not take issue with PG&E's forecast.

5 PG&E plans to replace its existing CP Resurvey program and implement a
6 one-time enhanced CP resurvey of the distribution system over a five-year period.
7 PG&E says the new program will go beyond just performing a paper review of the
8 records and involve confirming the Cathodic Protection Area (CPA) boundaries of all
9 steel distribution pipe, identifying appropriate locations for monitoring points,
10 confirming and identifying any additional locations of unprotected pipe, confirming
11 and identifying any additional casing locations, clearing all electrical grounds and
12 contacts from the pipe, performing current requirement testing when necessary, and
13 identifying the need for additional CP systems amongst other tasks. PG&E plans to
14 start the CP Resurvey program in 2017.³⁵

15 **c. MAT Code DG_NA – No Mat Code**

16 PG&E is requesting \$9.699 million in expenses in 2017 for MAT Code
17 DG_NA. ORA does not take issue with PG&E's forecast.

18 **2. MWC FH – Gas Distribution Preventative**
19 **Maintenance**

20 PG&E is requesting \$5.246 million in expenses in 2017 which is \$3.897
21 million or 289 percent above 2014 recorded expenses for MWC FH. ORA is
22 recommending \$2.730 million in expenses in 2017 which is \$1.381 million or 102
23 percent above 2014 recorded expenses for MWC FH. The following table is the
24 2010 to 2015 recorded expenses and 2017 forecast expenses for MWC FH.
25

³⁴ Ex. PG&E-3, Workpapers, p. WP 6B-48 and WP 6B-49; Ex. PG&E-18, p. 18-45

³⁵ Ex. PG&E-3, p. 6B-23 and Workpapers, p. WP 6B-49

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Table 6-9
MWC FH – Gas Distribution Preventative Maintenance
2010-2015 Recorded and 2017 Expense Forecast
(In Thousands of Nominal Dollars)

MAT Code	2010	2011	2012	2013	2014	2015	PG&E 2017	ORA 2017
FHL-AC Main Repairs	\$0	\$0	\$1	\$21	\$924	\$194	\$5,246	\$2,730
FHM-AT Service Repairs	6	0	3	24	230	278	0	0
FHN-AC Reg Station Repairs	1	43	34	104	195	450	0	0
Total	\$7	\$43	\$38	\$149	\$1,349	\$922	\$5,246	\$2,730

6 Source: 2010-2014 data from Ex. PG&E-3, Workpapers, pp. WP 6B-11 and WP 6B-12.

7 PG&E says that federal regulations do not specify a time in which identified
8 atmospheric corrosion must be mitigated. However, PG&E claims it wants to
9 maintain alignment with PHMSA Guidance for AC mitigation timelines which PHMSA
10 suggests AC should be mitigated within three years of identification.³⁶

11 PG&E says that it has been historical practice to use regular field personnel
12 to perform AC mitigation activities in connection with performing other tasks. In the
13 2014 GRC, the Commission authorized PG&E’s request for \$3.1 million to create
14 five dedicated three-person AC mitigation crews to paint distribution assets.³⁷

15 PG&E did not implement the five dedicated AC mitigation crews in 2014 because it
16 stated it needed to complete a manual field inspection record collection prior to
17 initiating additional field activities.³⁸ PG&E did not explain why its need to complete
18 a manual field inspection record collection prior to initiating additional field activities
19 was not taken into account in its 2014 GRC forecast. PG&E only spent \$1.3 million
20 of the authorized \$3.1 million funds in 2014.

³⁶ Ex. PG&E-3, p. 6B-28

³⁷ D.14-08-032, pp. 60 and 61

³⁸ Ex. PG&E-3, p. 6B-28 and Ex. PG&E-13, p. 18-35

1 In 2017, PG&E is requesting \$5.246 million to create five dedicated AC
2 mitigation crews of three team members in each crew. PG&E forecasts each crew
3 of three painters to cost \$1.05 million, which equates to \$350,000 per painter. In
4 developing the forecast for each crew, PG&E used a blended average of hourly
5 rates of different job functions (such as Corrosion Engineering, Project Managers,
6 Estimating, SAP Analysts, and Gas Construction personnel) to arrive at a rate of
7 \$164.73 per hour.³⁹

8 PG&E has the option to get bids for third party contractors to perform some of
9 the AC mitigation work. ORA asked PG&E whether it performed any analyses/cost
10 benefit studies comparing the use of third party contractors or PG&E employees
11 (painting crews) to perform AC mitigation work. PG&E responded, "PG&E is
12 currently investigating the distribution spans that could require mitigation. PG&E will
13 not know the true scope of the projects until the investigation is complete. For spans
14 that will not involve extensive scaffolding, PG&E employees can perform the work.
15 However, due to the nature of span crossings, many will involve extensive
16 scaffolding in order to have a safe working environment and will most likely be
17 contracted out to PG&E approved vendors. These job specific contracts have not
18 yet been created due to a lack of scope. ... Due to a lack of specific scope, PG&E
19 has not performed a detailed analysis comparing the use of third party contractors to
20 PG&E employees for AC mitigation work."⁴⁰

21 ORA does not take issue with PG&E's request to create dedicated AC
22 mitigation crews, but ORA takes issue with PG&E's use of the hourly rates of
23 Corrosion Engineering, Project Managers, Estimating and SAP Analysts to forecast
24 the hourly rates of a painter. The salaries of painters should not be based on
25 Corrosion Engineering employees, Project Managers, and General Construction
26 personnel whose jobs require different knowledge and skills, and thus should be
27 other duties.

³⁹ PG&E's response to ORA-PG&E-050, Q. 9.

⁴⁰ PG&E's response to ORA-PG&E-050, Q. 9.

1 ORA recommends using the salary of a GSR to forecast the hourly rate for a
 2 painter dedicated to AC mitigation. One of the various responsibilities of a GSR is
 3 AC remediation which is the duty of the dedicated AC mitigation painting crews.⁴¹
 4 PG&E's average cost for a GSR is \$182,065.⁴² With 15 painters at an annual rate
 5 of \$182,065 per painter, ORA's recommendation is \$2.730 million for MWC FH.
 6 ORA's recommendation provides sufficient funding for PG&E to hire third party
 7 contractors or employees to perform the AC mitigation work. Furthermore, PG&E
 8 plans to hire an additional 35 GSRs under MWC DD which will provide more GSRs
 9 to perform AC mitigation work, if necessary.

10 **3. MWC FI**

11 PG&E is requesting \$28.301 million in expenses in 2017 for MWC FI.⁴³ ORA
 12 is recommending \$20.275 million in expenses in 2017 for MWC FI. The following
 13 table provides 2010 to 2014 recorded expenses and PG&E's and ORA's 2017
 14 forecast for MWC FI.

15 **Table 6-10**
 16 **MWC FI – Gas Distribution Corrective Maintenance**
 17 **2010-2014 Recorded and 2017 Expense Forecast**
 18 **(In Thousands of Nominal Dollars)**

MAT Code	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
FII-Maint-Corr-G Cath Protection	\$2,692	\$2,771	\$3,147	\$4,655	\$5,181	\$7,072	\$7,072
FIQ/JU-AC Monitorg	1,201	1,483	4,051	9,822	7,360	21,229	13,203
_NA-No MAT Code	269	0	0	0	(2,621)	0	0
Subtotal	\$4,161	\$4,253	\$7,197	\$14,477	\$9,919	\$28,301	\$20,275
JU-GD Leak Srvy & Repair	0	0	0	0	14,800	0	0
Total	\$4,161	\$4,253	\$7,197	\$14,477	\$36,591	\$28,301	\$20,275

19 Source: 2010-2014 data from Ex. PG&E-3, Workpapers, pp. WP 6B-11 and WP 6B-12. Note: MAT
 20 FIQ/JU includes the total costs for AC meter inspections (MAT FIQ, FI_NA, JU), including amounts
 21 that exceed the cost cap established in D. 14-08-032. The amounts that exceed the cost cap are
 22 included in MWC JU and included here to show the full cost of the work performed.

⁴¹ Ex. PG&E-3, p. 6A-17

⁴² Ex. PG&E-3, Workpapers, p. WP 6A-96

⁴³ Ex. PG&E-3, Workpapers, p. 6B-12

1 **a. MAT Code FII-Cathodic Protection Corrective**
2 **Maintenance**

3 PG&E is requesting \$7.072 million in expenses in 2017 which is \$1.891
4 million or 37 percent above 2014 recorded expenses for MAT Code FII-Cathodic
5 Protection Corrective Maintenance. ORA does not take issue with PG&E's forecast.

6 PG&E's CP Corrective Maintenance program represents the expense
7 associated with restoring the CP system to satisfactory protection levels. PG&E
8 says typically this step consists of repairing rectifiers not identified in the CP Rectifier
9 Maintenance program, splicing/repairing wire connections, excavating and clearing
10 underground contacts, recoating degraded pipeline coating, repairing/replacing
11 insulating flanges, and installation or replacement of anodes or rectifiers.⁴⁴

12 **b. MAT Code FIQ-AC Meter Inspections/Can't-Get-**
13 **Ins**

14 PG&E is requesting \$21.229 million in expenses in 2017 for MAT Code FIQ
15 (Atmospheric Corrosion Inspections and CGIs).⁴⁵ ORA is recommending \$13.203
16 million in expenses in 2017 for MAT Code FIQ.

17 The AC Meter Inspection Program is a routine maintenance activity designed
18 to improve safety by reducing the likelihood of failure due to atmospheric corrosion
19 and to provide service reliability by minimizing service interruptions that may occur in
20 the case of failure as a result of atmospheric corrosion. PG&E says that the two
21 types of inspections are involved with this program, meter inspections and Can't-
22 Get-Ins (CGI). PG&E says that typical meter inspections are performed by contract
23 labor over three to five months. CGIs require additional notifications and follow-up to
24 complete the inspection from PG&E's inability to inspect exposed assets due to
25 various external reasons.⁴⁶

⁴⁴ Ex. PG&E-3, Workpapers, p. WP 6B-39

⁴⁵ Ex. PG&E-3, Workpapers, p. WP 6B-61

⁴⁶ Ex. PG&E-3, Workpapers, p. WP 6B-57

1 PG&E says that the overall objective of the AC Meter Inspection Program is
2 to comply with 49 CFR 192.482 stipulating “each operator must inspect each
3 pipeline or portion of pipeline that is exposed to the atmosphere for evidence of
4 atmospheric corrosion at least once every 3 calendar years, but with intervals not
5 exceeding 39 months” by providing a reliable inspection plan ensuring accurate
6 inspection and records of each customer meter set at least once every 3 calendar
7 years.⁴⁷

8 PG&E claims that it underestimated the cost of inspections which resulted in
9 costs for AC meter inspections in 2014 exceeding the cost cap established in the
10 2014 GRC. PG&E says the reason for the increased cost of inspections was due to
11 a change in inspection procedure scope. PG&E says that previous to 2014,
12 inspectors checked each meter set for AC and abnormal operating conditions and
13 when AC was identified; the location and the condition were recorded in a hand-held
14 tablet. In 2014, the procedure was revised to include a separate condition
15 assessment for the meter body and riser; assessing condition on a scale of 0 to 6,
16 rather than a binary yes or no condition assessment; and identification of additional
17 equipment including Powell kits, Perfection risers, and service regulator make and
18 model. PG&E says that this increased inspection scope significantly impacted
19 productivity and resulted in a higher than initially forecast unit cost.⁴⁸

20 PG&E’s total meter population system wide is approximately 4.4 million
21 meters. PG&E inspected approximately 50 percent of its meter population in
22 2014.⁴⁹ PG&E forecasts to inspect:

- 23 • approximately 25% of the total meter population in 2015
- 24 • approximately 25% of the total meter population in 2016
- 25 • approximately 50% of the total meter population in 2017.

⁴⁷ Ex. PG&E-3, Workpapers, p. WP 6B-57

⁴⁸ Ex. PG&E-3, Workpapers, p. WP 6B-59

⁴⁹ PG&E’s response to ORA-PG&E-050, Q. 8

1 PG&E says that it considered leveling the AC inspection work over a three
2 year period but this would require a significant ramp up in 2016 and an addition of up
3 to 40 FTEs. PG&E says that it will continue the current schedule for inspections and
4 revisit the leveling of the program in future rate cases.⁵⁰ PG&E states that if PG&E
5 were only to inspect 33.3% of the system in 2017, the remaining 16.7% would need
6 to be inspected in 2016 in order to meet the compliance requirements of 49 CFR
7 192.481(a).⁵¹

8 PG&E no longer follows the 2014 revised procedure discussed in its
9 testimony “to include a separate condition assessment for the meter body and riser;
10 assessing condition on a scale of 0 to 6, rather than a binary yes or no condition
11 assessment; and identification of additional equipment including Powell kits,
12 Perfection risers, and service regulator make and model.”⁵² In response to a data
13 request, PG&E says, “Since the contractors were going into the field and would have
14 direct access to the assets, they were initially asked to document additional
15 information including the presence of Powell kits and Perfection risers and
16 information about the regulators (including the number of service regulators, the
17 service regulator inlet size, service regulator outlet size, service regulator
18 manufacturer, and service regulator model) on their tablet. However, the process
19 proved time consuming and the scope of the regulator information was reduced to
20 collecting information only on Reliance Type H and Type K regulators.”⁵³

21 ORA does not take issue with PG&E’s unit cost forecast of \$9 per AC
22 inspection.⁵⁴ PG&E’s unit cost is generous as the unit cost includes the increased
23 inspection scope to document additional information that PG&E no longer collects or

⁵⁰ Ex. PG&E-3, Workpapers, p. WP 6B-60

⁵¹ PG&E’s response to ORA-PG&E-050, Q. 8

⁵² PG&E’s response to ORA-PG&E-218, Q. 2

⁵³ PG&E’s response to ORA-PG&E-218, Q. 2

⁵⁴ Ex. PG&E-3, Workpapers, p. WP 6B-61

1 will be completed in the full atmospheric cycle. In response to a data request, PG&E
2 states, “The additional data collected is to improve asset knowledge in support of the
3 DIMP. The collection of most of this data will not be necessary once a full
4 atmospheric inspection cycle has been completed. However, additional data needs
5 may be identified based on future requirements. Therefore, the incremental costs
6 associated with data collection activities (other than just grading the degree of
7 corrosion) have not been removed from the forecast for 2017.”⁵⁵

8 ORA recommends leveling the AC inspection work over a three year period
9 which equals to approximately 1.467 million meters per year. Ramping up the AC
10 inspection work in 2016 should not be a problem as PG&E claims. PG&E used
11 different third party contractors for the AC inspections in 2014 and 2015 and plans to
12 use contract labor again in 2016 for the AC inspections.⁵⁶ PG&E states that the
13 current and planned practice involves a compressed, intensive effort conducted over
14 3 to 5 months.⁵⁷ If necessary, PG&E can contract with multiple third party vendors
15 to ramp up AC inspections in 2016 and/or stretch the timeframe of the work beyond
16 the 3 to 5 months.

17 ORA recommends providing funding for the inspection of 1.467 million meters
18 (one-third of the 4.4 million meters) for atmospheric corrosion at a unit cost of \$9
19 which totals \$13.203 million in 2017. ORA recommends normalizing the funding of
20 the total cost for AC inspection of PG&E’s meters over the three-year GRC cycle.
21 To perform AC inspections on the total meter population of 4.4 million meters at a
22 unit cost of \$9 would cost a total of \$39.60 million which, normalized over 3 years,
23 equals \$13.203 million beginning in 2017.

24 If PG&E were authorized \$21.229 million in 2017, it would be collecting
25 \$63.687 million in revenues over the three-year GRC cycle, or \$24.087 million or 61
26 percent more than the total cost of \$39.60 million to complete the AC inspections on

⁵⁵ PG&E’s response to ORA-PG&E-218, Q. 2

⁵⁶ PG&E’s response to ORA-PG&E-050, Q. 8

⁵⁷ Ex. PG&E-3, p. 6B-16

1 PG&E's total meter population system wide. The percentage of the 4.4 million
2 meters that PG&E chooses to inspect during 2017 to 2019 should not change the
3 funding to inspect the 4.4 million meters for atmospheric corrosion over a three year
4 period.

5 **V. LEAK MANAGEMENT**

6 In Ex. PG&E-3, Chapter 6C, PG&E addresses PG&E's leak management
7 activities, other than meter set leak repair. PG&E's O&M expenses for its leak
8 management program to find and fix leaks on its natural gas distribution system are
9 recorded in MWC DE (Leak Survey) and MWC FI (Leak Repair and Repair due to
10 Dig-Ins).

11 **A. Overview of PG&E's and ORA's Forecasts**

12 PG&E is requesting a total of \$130.272 million in expenses in 2017 which is
13 \$41.843 million or 47 percent above 2014 recorded expenses for its Leak
14 Management Program on its gas distribution system. The \$130.272 million
15 comprises \$40.122 million for leak surveys (MWC DE) and \$90.150 million for leak
16 repairs (MWC FI).

17 ORA is recommending a total of \$110.634 million in expenses in 2017 for
18 PG&E's Leak Management Program on its gas distribution system, comprising
19 \$34.870 million for leak surveys (MWC DE) and \$75.764 million for leak repairs
20 (MWC FI). ORA's recommendation for 2017 is \$22.205 million or 25 percent above
21 PG&E's 2014 recorded expenses for its Leak Management Program.

22 The following table summarizes PG&E's request and ORA's recommendation
23 for Leak Management expenses.

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Table 6-11
Leak Management
2010-2014 Recorded and 2017 Expense Forecast
(In Thousands of Dollars)

Description	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
MWC DE-GD Leak Survey	\$29,244	\$20,115	\$26,275	\$31,325	\$35,268	\$40,122	\$34,870
MWC FI-GD Corrective Maint	38,486	29,762	52,245	65,691	53,161	90,150	\$75,764
Total	\$67,730	\$49,877	\$78,520	\$97,015	\$88,429	\$130,272	\$110,634

6 Source: 2010-2014 data from Ex. PG&E-3, Workpapers, p. WP 6C-1 and Ex. PG&E-18, p. 18-71.

7

B. ORA's Analysis

8

PG&E says that the primary drivers for the increase in leak management

9

expenses between 2014 and 2017 are:⁵⁸

10

- Transitioning to a Maximum 4-year Leak Survey Cycle

11

- Expanded use of the Picarro Surveyor Technology

12

- Increased Number of Identified Business Districts

13

- New Can't Get In (CGI) Policy

14

- Repairing Grade 3 Leaks.

15

1. Primary Drivers for Leak Management

16

The primary drivers for the increase in expenses between 2014 and 2017 are

17

discussed in the following sections.

18

a. Expanded Use of the Picarro Surveyor Technology

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20

PG&E conducted leak surveys using the Picarro Surveyor on 50 percent of its

21

system in 2015, and plans to increase usage to 70 percent in 2016 and 100 percent

⁵⁸ Ex. PG&E-3, pp. 6C-4 to 6C-5

1 in 2017. PG&E forecasts finding 1.7 times as many leaks using the Picarro than it
2 would find using other equipment.⁵⁹

3 ORA does not take issue with PG&E’s expanded use of Picarro or the 1.7
4 times leak find rate.

5 **b. Increased Number of Identified Business Districts**

6 PG&E changed its definition of “business district” to include small commercial
7 areas within residential areas. Starting in 2016, PG&E forecasts surveying an
8 additional 115,996 services annually rather than on a five-year leak survey cycle as
9 a result of the new definition of a business district.⁶⁰

10 ORA does not take issue with PG&E’s revised definition of a business district
11 to include commercial areas within residential areas. In response to ORA’s data
12 request regarding the validation of the additional business districts, PG&E states,

13 “PG&E has not changed the estimated number of additional services to
14 be surveyed annually. However, PG&E did realize that it incorrectly
15 listed the number of additional annual business district services at
16 115,995 in testimony, as the number should be 115,996. PG&E will
17 make this correction through an erratum filing. Additionally, PG&E
18 inadvertently did not remove the found services of which will be added
19 as business districts from the number of compliance services required
20 to be surveyed on a 5-year, 4-year or 3-year leak survey cycle in its
21 Leak Management Forecast Model. A total of 23,199 (115,995
22 divided by 5) services were removed annually from the total
23 compliance services to survey in Exhibit (PG&E-3), WP 6C-66 Lines 1
24 and 2. PG&E will make this correction through an erratum filing.”⁶¹

25 PG&E performed 97,928 leak surveys in 2014 and 137,661 leak surveys in
26 2015 that are categorized as business district and public assembly.⁶²

27

⁵⁹ Ex. PG&E-3, pp. 6C-21 and 6C-22

⁶⁰ Ex. PG&E-3, p. 6C-14

⁶¹ PG&E’s response to ORA-PG&E-131, Q. 13

⁶² PG&E’s response to ORA-PG&E-183, Q. 5

1 **c. New Can't Get In (CGI) Policy**

2 On December 31, 2014, PG&E implemented a new inside meter set
3 requirement that requires an operator-qualified technician to physically gain access
4 to the meter set to perform survey for leaks. Inside meter set access may require
5 multiple visits to a location, proactive outreach to customers and coordination of
6 schedules for appointments all of which PG&E says will increase unit cost.⁶³ PG&E
7 handled approximately 12,000 and 44,000 CGIs in 2014 and 2015 respectively.⁶⁴
8 PG&E's 2014 recorded unit cost was \$23. The unit cost for MAT Code DEA was
9 \$25 as of year-to-date November 2015.⁶⁵ PG&E's 2015 unit cost for MAT Code
10 DEA already incorporates some of the additional costs to implement PG&E's new
11 CGI Policy as shown by the increased number of CGIs recorded for 2015 compared
12 to 2014.

13 PG&E forecasts 2017 unit cost to be \$33 with the efficiencies for MAT DEA.⁶⁶
14 ORA does not take issue with PG&E's 2017 unit cost of \$33 for MAT Code DEA.

15 **d. Repairing Grade 3 Leaks**

16 Grade 3 leaks are non-hazardous at the time of detection and can reasonably
17 be expected to remain non-hazardous. Regulation requires that they be re-surveyed
18 every five years. PG&E standards require that they be re-surveyed and monitored
19 annually, or no later than 15 months, but historically not scheduled for repair (unless
20 they become a Grade 1, 2+ or 2 leak). PG&E now repairs, rather than rechecks,
21 above-ground 3 leaks, and has begun repairing a percentage of below-ground
22 Grade 3 leaks.⁶⁷

⁶³ Ex. PG&E-3, p. 6C-5

⁶⁴ PG&E's response to ORA-PG&E-131, Q. 12

⁶⁵ PG&E's response to ORA-PG&E-131, Q. 16

⁶⁶ Ex. PG&E-3, Workpapers, p. WP 6C-12

⁶⁷ Ex. PG&E-3, p. 6C-11

1 In 2014, PG&E did not repair below-ground Grade 3 leaks. Starting in 2015,
2 PG&E plans to bring the number of Grade 3 open leaks down to a forecast number
3 of less than 19,000 and forecasts to repair all Grade 3 leaks found each year to keep
4 the total open Grade 3 leak number constant.⁶⁸

5 ORA does not take issue with PG&E’s plan to repair Grade 3 leaks.

6 **e. Transitioning to Maximum 4-Year Leak Survey**
7 **Cycle**

8 PG&E is proposing to transition to a 4-year leak survey cycle in 2017.⁶⁹ ORA
9 recommends that PG&E continue its current 5-year leak cycle in 2017.

10 Currently, approximately 94% of PG&E’s gas distribution system is surveyed
11 on a 5-year cycle. PG&E proposed to transition from a maximum 5-year leak survey
12 cycle to maximum 3-year leak survey cycle in its 2014 GRC. PG&E stayed on the 5-
13 year leak survey cycle while expanding the use of the Picarro Surveyor. PG&E
14 states that it continues to believe that it is appropriate and ultimately cost effective to
15 eventually move to a 3-year leak survey cycle.⁷⁰

16 PG&E proposes to transition to a 4-year leak survey cycle in 2017.⁷¹ PG&E
17 says that the risk reduction associated with leak management manifests both in
18 terms of how many leaks an operator fixes and how many leaks an operator allows
19 to remain open.⁷²

20 Decision (D.) 14-08-032, from the PG&E 2014 GRC, states, “Regarding the
21 controversy over whether PG&E should conduct routine leak surveys on a specific
22 cycle frequency, we consider the choice of a specific leak cycle frequency is
23 ultimately a management decision that is PG&E’s responsibility. We adopt a funding

⁶⁸ Ex. PG&E-3, p. 6C-27

⁶⁹ Ex. PG&E-3, Workpapers, p. WP 6C-66

⁷⁰ Ex. PG&E-3, p. 6C-24

⁷¹ Ex. PG&E-3, p. 6C-26

⁷² Ex. PG&E-3, p. 6C-24

1 level sufficient to enable PG&E to achieve an overall performance results in leak
2 cycle detection and repair consistent with best industry practice.”⁷³

3 ORA is recommending that funding for the leak survey cycle continue at the
4 current 5-year leak survey cycle. PG&E is in compliance with the Federal Code, 49
5 CFR Section 192.723, which requires PG&E to survey business districts annually,
6 unprotected distribution lines once every three years, and non-business (or
7 residential areas) once every five years.⁷⁴

8 The Commission initiated a proceeding in 2011 to review the General Order
9 (GO) 112 rules for California’s natural gas transmission and distribution system
10 operators in Order Instituting Rulemaking (R.) 11-02-019.⁷⁵ GO 112-F was adopted
11 in D.15-06-044, where the Commission established a new rule requiring semi-annual
12 surveys of the gas transmission system.⁷⁶ That decision did not adopt a change in
13 the leak survey cycle for the gas distribution system.

14 GO 112 supplements the requirements of Federal Code, 49CFR Section
15 192.723. GO 112-F, Section 143.1(a) expands the definition of business districts
16 and requires “a gas leak survey, using leak detecting equipment, must be conducted
17 in business districts and in the vicinity of schools, hospitals and churches, including
18 tests of the atmosphere in gas, electric, telephone, sewer and water system
19 manholes, at cracks in pavement, and sidewalks, and at other locations providing an
20 opportunity for finding gas leaks, at intervals not exceeding 15 months, but at least
21 once each calendar year.”

22 ORA does not take issue with PG&E’s incorporation of a broader definition of
23 a business district into its leak survey program which will increase the volume of
24 PG&E’s annual leak surveys. PG&E is already inspecting the most critical parts of

⁷³ D. 14-08-032, p. 74

⁷⁴ Ex. PG&E-3, p. 6C-7

⁷⁵ D. 15-06-044, Attachment GO 112-F, p. 14, Section 143.1(a).

⁷⁶ Ex. PG&E-3, p. 6C-27

1 its system more frequently than once every five years. Furthermore, R.11-02-019
2 did not (outside of the expanded coverage for schools, hospitals, and churches)
3 increase the frequency of leak surveys, and the Commission already has open
4 Rulemaking 15-01-008 to consider natural gas leak abatement.

5 In R.15-01-008 on Natural Gas Leak Abatement, the July 2015 Scoping
6 Memo asks:

- 7 • How should utilities manage expanded leak surveys and/or more
8 frequent surveys to include their entire gas system including all
9 equipment and facilities (e.g., compressor stations, terminal vents)?
- 10 • Should there be a new category of leaks to identify intentional, non-
11 hazardous leaks associated with safe operation of natural gas
12 system (i.e. “emission sources”)?⁷⁷

13 The final decision on R.15-01-008 should provide additional guidance on leak
14 survey cycles for gas distribution systems. Any changes to the leak survey cycles
15 should be implemented subsequent to the Commission’s directive in that
16 rulemaking. The proposed change to a maximum 4-year leak survey cycle in
17 PG&E’s 2017 GRC is premature.

18 **2. MWC DE-Gas Distribution Leak Survey**

19 PG&E is requesting \$40.122 million in expenses in 2017 which is \$4.854
20 million or 14 percent above 2014 recorded expenses for MWC DE (Traditional Leak
21 Survey, Picarro/Super Crew Leak Survey, Special Survey, Downgrade No Repair,
22 Rechecks, Customer Calls, and Other-Quality Assurance and Quality Control).

23 ORA is recommending \$34.870 million in expenses in 2017 for MWC DE.
24 The difference between PG&E’s and ORA’s forecasts for MWC DE is due to ORA’s
25 recommendation that PG&E continue its current 5-year leak survey cycle consistent
26 with the Commission policy in PG&E’s last GRC instead of PG&E’s proposal to
27 transition to a 4-year leak survey cycle.

28 ORA used PG&E’s Leak Management Forecast Model to derive the forecasts
29 for MWC DE based on the current 5-year leak survey cycle. PG&E is forecasting

⁷⁷ R.15-01-008, Scoping Memo, July 24, 2015, p. 7

1 808,351 leak surveys on a 4-year leak survey cycle in 2017. ORA is forecasting
 2 616,579 leak surveys on the current 5-year leak survey cycle in 2017 based on
 3 PG&E's forecast of leak surveys on a 5-year leak survey cycle of 639,778 units and
 4 removing the additional 23,199 identified as business district units that changed to
 5 an annual leak survey cycle.⁷⁸ The following table provides 2010 to 2014 recorded
 6 expenses and 2017 forecast expenses for MWC DE.⁷⁹

7 **Table 6-12**
 8 **MWC DE – Gas Distribution Cathodic Protection**
 9 **2010-2014 Recorded and 2017 Expense Forecast**
 10 **(In Thousands of Nominal Dollars)**

MAT Code	2010	2011	2012	2013	2014	PG&E 2017 ⁸⁰	ORA 2017
DEA-Leak Survey	\$12,200	\$12,871	\$16,282	\$19,721	\$19,287	\$16,524	\$14,730
DEB-Special Leak Svy	1,067	366	1,158	786	689	136	130
DEC-Downgrade No Repair	0	40	3,727	4,997	1,479	3,768	3,160
DED-Rechecks	5,737	4,669	1,422	1,359	2,939	948	870
DEE-Customer Calls	2,447	1,813	2,160	1,711	1,518	1,428	1,430
DEF-Picarro Rollout	0	0	0	0	4,425	13,177	10,390
DEG-Picarro Special Survey	0	0	0	(1)	623	754	770
NA-No MAT Code	7,793	(7)	1,526	2,751	4,308	3,386	3,390
Total	\$29,244	\$20,115	\$26,275	\$31,325	\$35,268	\$40,122	\$34,870

11 Source: 2010-2014 data from Ex. PG&E-3, p. 6C-37 and Ex. PG&E-18, p. 18-64

12

⁷⁸ Ex. PG&E-3, Workpapers, p. WP 6C-66, (639,778 units minus 23,199 identified business district units)

⁷⁹ Ex. PG&E-3, Workpapers, p. WP-6C-63

⁸⁰ Ex. PG&E-3, p. 6C-37

1 PG&E's current leak survey practice is to survey on the following cycles:⁸¹

Six Month Survey	Stations
Annual Survey	(1) Business Districts; (2) High public Assembly Areas (e.g., schools); (3) Atmospheric Exposed Mains; and (4) Bare Steel Mains
3-Year Survey	(1) Copper Services and (2) Unprotected Steel Mains
5-Year Survey	Everything else (approximately 94% of Distribution System)

2 PG&E is required by Federal code, 49 CFR Section 192.723 to conduct
3 periodic leak surveys on its distribution system to find gas leaks.⁸² PG&E is
4 required to survey business districts annually, unprotected distribution lines once
5 every three years, and non-business (or residential areas) once every five years.
6 Approximately 94% of PG&E's gas distribution system is surveyed on a 5-year cycle.

7 PG&E says that until recently, it only used foot and traditional mobile type
8 methods to survey its gas distribution pipeline system for gas leaks. Foot survey
9 requires a leak surveyor to physically walk over/inspect subsurface and above-
10 ground facilities such as gas meter assemblies with a hand-held leak detection
11 instrument and leak detection soap solution. The traditional mobile type survey is
12 performed by an operator who slowly drives a vehicle equipped with multiple
13 sensors down a street to survey gas pipe located under the roadway. Unlike the
14 Picarro Surveyor, the traditional mobile type survey cannot be used to leak survey
15 facilities not directly under the vehicle's sensors.

16 The Picarro Surveyor (Picarro) is a new technology that is mounted on a
17 vehicle and can detect leaks, depending on wind and other factors, hundreds of feet
18 away from the vehicle. PG&E says that Picarro is 1,000 times more sensitive than
19 other leak detection equipment and enables PG&E to find significantly more leaks
20 than with other leak detection equipment. PG&E says that based on its experience

⁸¹ Ex. PG&E-3, p. 6C-8

⁸² Ex. PG&E-3, p. 6C-7

1 to-date, Picarro can survey 75 percent of the system and the remaining 25 percent
2 will be surveyed by foot surveyors.

3 When Picarro identifies a possible leak, PG&E dispatches foot surveyors to
4 pinpoint and grade the leak. PG&E has determined that due to obstructions and
5 other physical conditions, Picarro does not adequately survey meter sets in all
6 cases. Foot surveyors are sent to survey all meter sets and the area within five feet
7 of the meter set to look for abnormal conditions such as overbuilds and to perform
8 atmospheric corrosion inspections.⁸³

9 **3. MWC FI-Gas Distribution Corrective Maintenance**

10 PG&E is requesting \$90.150 million in expenses in 2017 which is \$36.989
11 million or 70 percent above 2014 recorded expenses for MWC FI.

12 ORA is recommending \$75.764 million in expenses in 2017 for MWC FI which
13 is \$22.603 million or 43 percent above 2014 recorded expenses. The difference
14 between PG&E's and ORA's forecasts for MWC FI is due to ORA's recommendation
15 that PG&E continue the current 5-year leak survey cycle instead of PG&E's proposal
16 to transition to a 4-year leak survey cycle.

17 PG&E is forecasting 808,351 leak surveys on a 4-year leak survey cycle in
18 2017. ORA is forecasting 616,579 leak surveys on the current 5-year leak survey
19 cycle in 2017 based on PG&E's forecast of leak surveys on a 5-year leak survey
20 cycle of 639,778 units and removing the additional 23,199 identified as business
21 district units.⁸⁴

22 ORA used PG&E's Leak Management Forecast Model to derive the forecasts
23 for MAT Codes FIH, FIP, and FIG based on the current 5-year leak survey cycle at
24 616,579 units. ORA does not take issue with PG&E's unit cost forecasts for MAT

⁸³ Ex. PG&E-3, pp. 6C-8 to 6C-10

⁸⁴ Ex. PG&E-3, Workpapers, p. WP 6C-66, (639,778 units minus 23,199 identified business district units)

1 Codes FIH, FIP, and FIG. The following table provides 2010 to 2014 recorded
 2 expenses and 2017 forecast expenses for MWC FI.⁸⁵

3 **Table 6-13**
 4 **MWC FI – Gas Distribution Leak Survey**
 5 **2010-2014 Recorded and 2017 Expense Forecast**
 6 **(In Thousands of Nominal Dollars)**

MAT Code	2010	2011	2012	2013	2014	PG&E 2017 ⁸⁶	ORA 2017
FIH-Service Leak Repair-Above Ground	\$22,930	\$16,960	\$8,939	\$8,546	\$8,330	\$11,807	\$9,990
FIP-Service Leak Repair-Below Ground	87	278	19,709	22,594	17,351	35,919	30,290
FIG-Main Leak Repair	11,135	12,213	20,628	29,432	20,711	40,031	33,090
FIM-Major Event-Distrib Gas	0	0	0	0	425	0	0
FIJ-Main Dig-In Repair	469	58	831	301	1,167	183	183
FIK-Service Dig In Repair	551	(243)	578	511	1,427	330	330
FI#-Other	3,314	497	1,559	4,306	3,749	1,881	1,881
FI Total	\$38,486	\$29,762	\$52,245	\$65,691	\$53,161	\$90,150	\$75,764

7 Source: 2010-2014 data from Ex. PG&E-3, p. 6C-42, Ex. PG&E-3, Workpapers, pp. WP 6C-11, and
 8 Ex. PG&E-18, p. 18-68.

9 MWC FI consists of repairing damaged or failed facilities. Gas facilities
 10 requiring repair are mostly identified through leak surveying activities, while a small
 11 percentage of leaks are identified through customer odor complaints, employees
 12 performing other maintenance, and third-party dig-ins.⁸⁷

13

⁸⁵ Ex. PG&E-3, Workpapers, p. WP-6C-63

⁸⁶ Ex. PG&E-3, p. 6C-42

⁸⁷ Ex. PG&E-3, p. 6C-38

1 **a. MAT Code FIH-Service Leak Repair-Above Ground**

2 PG&E is requesting \$11.8 million in expenses in 2017 for MAT Code FIH.
3 PG&E forecasts to perform 41,210 units of above-ground service repairs at an
4 average unit cost of \$287 in 2017.⁸⁸

5 ORA is forecasting \$9.990 million in expenses in 2017 for MAT Code FIH
6 based on 34,811 units of above-ground service repairs (based on a 5-year leak
7 survey cycle) at an average unit cost of \$287 in 2017.

8 **b. MAT Code FIP-Service Leak Repair-Below Ground**

9 PG&E is requesting \$35.9 million in expenses in 2017 for MAT Code FIP.
10 PG&E forecasts to perform 13,820 units of below-ground service repairs at an
11 average unit cost of \$2,599 in 2017.

12 ORA is forecasting \$30.290 million in expenses in 2017 for MAT Code FIP
13 based on 11,654 units (based on a 5-year leak survey cycle) of below-ground
14 service repairs at an average unit cost of \$2,599 in 2017.

15 **c. MAT Code FIG-Main Leak Repair**

16 PG&E is requesting \$40 million in expenses in 2017 for MAT Code FIG.
17 PG&E forecasts to perform 6,609 units of main repairs at an average unit cost of
18 \$6,057 in 2017.

19 ORA is forecasting \$33.090 million in expenses in 2017 for MAT Code FIP
20 based on 5,463 units (based on a 5-year leak survey cycle) of below-ground service
21 repairs at an average unit cost of \$6,057 in 2017.

22 **d. MAT Code FI#- Leak Repair-Support**

23 PG&E is requesting \$1.9 million in expenses in 2017 for MAT Code FI#.
24 PG&E forecast was based on an average of recorded amounts for Quality
25 Assurance/Quality Control, and Sand & Gravel and Spoilage associated with leak
26 repair.

27 ORA does not take issue with PG&E's forecast for MAT Code FI#.

⁸⁸ Ex. PG&E-3, pp. 6C-38 and 6C-39

1 **e. MAT Code FIJ and FIK-Service and Main Dig-in**
2 **Repair**

3 PG&E is requesting \$0.2 million in expenses for MAT Code FIJ and \$0.3
4 million for MAT Code FIK in 2017.

5 ORA does not take issue with PG&E's forecasts for MAT Codes FIJ and MAT
6 Code FIK.

7 **4. Balancing Account**

8 PG&E proposes closing the Gas Leak Survey and Repair Balancing Account
9 (GLSRBA). The GLSRBA tracks and adjusts for the difference between adopted
10 and actual expenses for the following cost categories: (1) Natural Gas Distribution
11 Leak Survey; (2) Leak Repair; (3) Meter Set Leak Repair; (4) Atmospheric Corrosion
12 Inspection; and (5) Tee Cap Repair. PG&E says that the uncertainty associated with
13 previously unknown factors no longer exists due to PG&E's experience and the
14 maturity of the redefined leak management program. PG&E explains the costs and
15 activities associated with this work can now be reasonably forecast, and adjustments
16 have been made to the forecast that are reasonable and appropriate.⁸⁹

17 ORA does not take issue with PG&E's proposal to close the GLSRBA in
18 2017.

19 **VI. GAS SYSTEM OPERATIONS**

20 PG&E's Gas System Operations include expenses to plan, operate, and
21 maintain sufficient design day capacity on its gas distribution system.

22 **A. Overview of PG&E's and ORA's Forecasts**

23 PG&E is requesting \$29.382 million in expenses in 2017 which is \$8.153
24 million or 38 percent above 2014 recorded expenses for Gas System Operations.

⁸⁹ Ex. PG&E-3, p. 6C-3

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Table 6-15
MWC FG – Gas Distribution Operate System
2010-2014 Recorded and 2017 Expense Forecast⁹⁰
(In Thousands of Nominal Dollars)

MAT Code	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
FGA-GD Control & Operation	\$277	\$248	\$405	\$3,469	\$8,446	\$14,358	\$12,816
FGB-Op Distr-Gas Mains & Services	2,451	2,727	2,826	2,982	3,385	2,467	2,467
FGC-Op Distr-Gas Reg Station	590	583	1,107	1,530	458	274	274
FG#-FG Misc	743	558	644	552	(16)	0	0
Total	\$4,060	\$4,118	\$4,981	\$8,534	\$12,273	\$17,109	\$15,557

5 PG&E is requesting \$14.358 million in expenses in 2017 which is \$5.912
6 million or 70 percent above 2014 recorded expenses for MAT FGA. ORA is
7 recommending \$12.816 million in expenses in 2017 which is \$4.4 million or 52
8 percent above 2014 recorded expenses for MAT FGA.

9 PG&E records expenses to staff and operate the Gas Distribution Control
10 Center (GDCC) in MAT FGA. The GDCC operates 24 hours a day, 7 days a week,
11 to monitor regulators, valves, and other equipment remotely.⁹¹ PG&E forecasts 54
12 employees or 49 FTEs will be required to fully staff the GDCC in 2017. PG&E says
13 the increased staff levels are needed for the ongoing increase in the number of
14 Remote Terminal Units (RTU) and Electronic Recorders (ERX) being deployed and
15 the anticipated seven-fold increase in gas distribution clearances. PG&E says the
16 recorded costs in 2014 reflect 30 FTEs rather than the 46 FTEs that PG&E
17 forecasted for the GDCC in the 2014 GRC and approved by D.14-08-032.⁹²

18 PG&E's forecast of \$14.358 million for MAT FGA is broken down by
19 \$12.190 million for 49 FTEs to fully staff the GDCC in 2017 and \$2.168 million for

⁹⁰ Ex. PG&E-3, Workpapers, p. WP 7-5

⁹¹ Ex. PG&E-3, p. 7-10

⁹² Ex. PG&E-3, p. 7-25

1 training, wireless phone service, and other costs. PG&E's forecast is a unit cost of
2 approximately \$248,776 per FTE.

3 ORA is recommending \$12.816 million in 2017 for MAT FGA. ORA is using a
4 unit cost of \$217,303 per FTE based on PG&E's 2015 recorded expenses for MAT
5 FGA-Personnel. The 2015 unit cost represents the most current historical annual
6 costs associated with GDCC personnel. PG&E recorded \$9.105 million in 2015 for
7 MAT FGA-Personnel with a staff of 41.9 FTEs at 2015 year-end.⁹³ ORA
8 recommends \$10.648 million for the 49 FTEs at the \$217,303 per FTE rate. ORA
9 did not remove from ORA's calculation of the unit cost for FTEs PG&E's recorded
10 expenses of \$727,132 in overtime labor expenses in 2015.⁹⁴ With the additional
11 FTEs to staff the GDCC, PG&E should have minimal overtime labor costs in 2017.

12 ORA does not take issue with PG&E's forecast of \$2.168 million for training,
13 wireless phone service, and other costs in addition to the labor cost of \$10.648
14 million. ORA's recommendation for MAT FGA is a total of \$12.816 million.

15 **2. MWC GG: Gas System Planning & Engineering**

16 PG&E is requesting \$12.274 million in expenses in 2017 or \$3.317 million or
17 37 percent above 2014 recorded expenses for MWC GG. ORA is recommending
18 \$10.902 million in expenses in 2017 which is \$2.0 million or 22 percent above 2014
19 recorded expenses for MWC GG. ORA accepts PG&E's 2017 forecasts for MAT
20 Code GGA, which is equal to \$9.846 million. ORA takes issue with PG&E's 2017
21 forecasts for MAT Code GG# which is discussed below.

⁹³ PG&E's response to ORA-PG&E-146, Q. 4 and 5

⁹⁴ PG&E's response to ORA-PG&E-146, Q. 3

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Table 6-16
MWC GG – Gas Distribution Operate System
2010-2014 Recorded and 2017 Expense Forecast⁹⁵
(In Thousands of Nominal Dollars)

MAT Code	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
GGA-Gas Sys Planning	\$334	(\$392)	\$75	\$1,691	\$8,363	\$9,846	\$9,846
GG#-GD Eng & Design	2,604	3,397	6,747	7,566	593	2,428	1,056
Total	\$2,938	\$3,005	\$6,822	\$9,256	\$8,957	\$12,274	\$10,902

5 PG&E is requesting \$2.428 million in 2017 which is \$1.835 million or 309
6 percent above 2014 recorded expenses for MAT Code GG#. PG&E says it used its
7 2015 forecast of \$2.4 million to forecast the 2017 expenses for MAT Code GG#.
8 ORA recommends using the 2015 recorded expenses of \$1.056 million to forecast
9 2017 expenses for MAT Code GG#. ⁹⁶

10 **VII. NEW BUSINESS and WORK AT THE REQUEST OF OTHERS**

11 PG&E records expenses for New Business (NB) and Work at the Request of
12 Others (WRO) in MWC LK. PG&E must perform the work in the NB/WRO Program
13 at the request of its customers or governmental agencies which includes customer
14 contact, design and engineering, job cost estimation, contract preparation,
15 construction, inspection of third-party work, and facility mapping.

16 **A. Overview of PG&E’s and ORA’s Forecasts**

17 PG&E is requesting \$6.281 million in expenses in 2017 for MWC LK. The
18 following table summarizes PG&E’s request and ORA’s recommendation for New
19 Business and Work at the Request of Others (WRO) expenses.
20

⁹⁵ Ex. PG&E-3, Workpapers, p. WP 7-5

⁹⁶ PG&E’s response to ORA-PG&E-146, Q. 2

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**Table 6-17
New Business and Work at the Request of Others
2010-2014 Recorded and 2017 Expense Forecast
(In Thousands of Dollars)**

Description	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
MWC LK-Gas WRO	\$6,122	\$6,265	\$7,375	\$9,074	\$6,363	\$6,281	\$6,281
Total	\$6,122	\$6,265	\$7,375	\$9,074	\$6,363	\$6,281	\$6,281

5 Source: 2010-2014 data from Ex. PG&E-3, p. 8-24.

6 **B. ORA's Analysis**

7 ORA reviewed PG&E's testimony and workpapers, in this area, and does not
8 take issue with PG&E's forecast for MWC LK.

9 **VIII. GAS OPERATIONS TECHNOLOGY**

10 The Gas Operations Technology records expenses to maintain Information
11 Technology (IT) applications and infrastructure in MWC JV and to fund Research
12 and Development (R&D) in MWC GZ.

13 **A. Overview of PG&E's and ORA's Forecasts**

14 PG&E is requesting \$37.938 million in expenses in 2017 which is \$19.387
15 million or 105 percent above 2014 recorded expenses for Gas Operations
16 Technology. ORA is recommending \$8.043 million in expenses in 2017 for Gas
17 Operations Technology. The following table summarizes PG&E's request and
18 ORA's recommendation for Gas Operations Technology expenses.

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**Table 6-18
Gas Operations Technology
2010-2014 Recorded and 2017 Expense Forecast
(In Thousands of Dollars)**

Description	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
MWC GZ-RD&D Non-Balancing	\$101	\$6	\$1,110	\$1,158	\$860	\$2,500	\$1,043
MWC JV-Maintain IT Apps and Infrast	384	314	6,839	15,639	17,691	35,438	7,000
Total	\$484	\$321	\$7,948	\$16,797	\$18,551	\$37,938	\$8,043

23 Source: 2010-2014 data from Ex. PG&E-3, p. 9-42

1 **B. ORA's Analysis**

2 PG&E is forecasting expenses of \$2.5 million for MWC GZ and \$35.438
3 million for MWC JV in 2017. ORA is recommending expenses of \$1.043 million for
4 MWC GZ and \$7.0 million in MWC JV. The following sections provide a discussion
5 of PG&E's and ORA's forecast for MWC GZ and MWC JV.

6 **1. MWC GZ: Research & Development**

7 PG&E is requesting \$2.500 million in expenses in 2017 which is \$1.640
8 million or 191 percent above 2014 recorded expenses for MWC GZ. ORA is
9 recommending \$1.043 million in expenses in 2017 for MWC GZ. ORA recommends
10 using the three-year average (2012 to 2014) of R&D expenses to forecast 2017
11 expenses. PG&E recorded minimal expenses during 2010 and 2011 for R&D.

12 PG&E says the purpose of the R&D and Innovation program is to detect,
13 develop, test and introduce new methods and technologies in PG&E's Gas
14 Operations to improve safety, reliability, and efficiency. PG&E says that it
15 collaborates with other utilities and pipeline operators through national and
16 international R&D leading consortia such as Pipeline Research Council International;
17 NYSEARCH; and the Operation Technology Development (OTD) group of the Gas
18 Technology Institute, or through ad-hoc co-funded initiatives called Joint Industry
19 Projects to keep costs down.⁹⁷

20 PG&E has recorded expenses for contribution to various R&D collaborations
21 and consortia since 2012.⁹⁸ PG&E's funding of R&D collaborations and consortia is
22 already embedded in recorded expenses. PG&E's testimony provides discussions
23 of a general program planning process for R&D such as: (1) Ideation, Assessment
24 and Prioritization; (2) Development, Test and Demonstration; (3) Pilots and
25 Deployment; and (4) General Management.⁹⁹ PG&E does not provide any specific

⁹⁷ Ex. PG&E-3, p. 9-12

⁹⁸ PG&E's response to ORA-PG&E-065, Q. 1

⁹⁹ Ex. PG&E-3, pp. 9-13 to 9-14

1 projects requiring additional R&D funding in 2017 in addition to the R&D
2 collaborations and consortia.

3 D.14-08-032 authorized funding of \$2.5 million in R&D.¹⁰⁰ PG&E recorded
4 \$860,000 in 2014 and \$1.20 million in 2015 for R&D which is less than the \$2.50
5 million authorized. Given PG&E's underspending in this area, ORA concludes that
6 PG&E's historical expenses for R&D provide a reasonable method to forecast future
7 expenses. ORA's recommendation of \$1.043 million will provide PG&E with
8 continued funding of R&D collaborations and consortia and other R&D projects.

9 **2. MWC JV: Maintain IT Applications and** 10 **Infrastructure**

11 PG&E is requesting \$35.438 million in expenses in 2017 which is \$34.288
12 million or 2,982 percent above 2014 recorded expenses for MWC JV. Of the
13 \$35.438 million that PG&E is requesting for MWC JV, PG&E is requesting \$14.20
14 million for its As-Built Record Consolidation Project in 2017.

15 ORA is recommending \$7.0 million in expenses in 2017 for MWC JV. As
16 discussed below, ORA is recommending no additional funding for PG&E's As-Built
17 Record Consolidation Project and \$7.0 million for other IT Projects in 2017.

18 **a. As-Built Record Consolidation Project**

19 PG&E is requesting \$14.200 million in expenses for the As-Built Record
20 Consolidation Project in 2017. ORA is recommending no additional funding for
21 PG&E's As-Built Record Consolidation Project in 2017. The mapping effort is one of
22 the most important tasks PG&E needs to complete and after being awarded its full
23 request in the last GRC; PG&E cannot credibly request additional funding by
24 explaining that the project did not start on time and is now of larger scope.

25 In PG&E's 2014 GRC, the Commission authorized \$14.9 million in expenses
26 for the Gas Distribution Mapping and Records (MWC GF) which sought funding to
27 collect, transport, standardize, and electronically archive over 15,000 linear feet of
28 gas distribution paper as-built records and gas service records into the enterprise

¹⁰⁰ Decision 14-08-032, p. 109

1 wide records center over a 3.5 year period between 2013 and 2016.¹⁰¹ ORA
2 opposed this funding level due to a lack of credible supporting documentation for the
3 amount of documents offered, and the lack of any records and poor estimating
4 techniques for several regional offices. Despite this lack of support, and perhaps
5 because of the importance of PG&E’s mapping efforts, the Commission granted
6 PG&E its full request. It is disconcerting that under these circumstances PG&E
7 failed to produce the requested product, improperly blaming what at most was a few
8 month’s delay on a Commission decision whose timing was not unforeseeably late
9 and now requests additional money to provide what it claims is a bigger project.

10 The Gas Distribution Mapping Records is now called the As-Built Record
11 Consolidation Project in this GRC. PG&E states, “Due to postponement of the final
12 decision of the 2014 GRC and requirement interdependencies with the Pathfinder
13 Project, the kickoff of this effort was delayed until 2015 and a new completion date is
14 planned for 2017.”¹⁰² PG&E excludes the 2017 expense of \$14.2 million associated
15 with this consolidation project from PG&E’s 2018 and 2019 revenue requirement
16 forecast as discussed in Ex. PG&E-11 (Post-Test Year Ratemaking).¹⁰³

17 PG&E’s assertion that the August 2014 issuance of its 2014 GRC decision is
18 the cause of a “postponement” of the project is not a valid reason for delaying a
19 proposed program from 2013 to 2015. Nonetheless, PG&E requests further,
20 additional funding for 2017, claiming that “in addition to the original 2014 scope, the
21 initiative will collect, standardize and index historical gas distribution regulator station
22 as built records to be archived in a document management system.”¹⁰⁴

23 ORA recommends no additional funding for the As-Built Record Consolidation
24 Project in 2017. ORA takes issue with PG&E’s statement above that any additional

¹⁰¹ D.14-08-032, pp. 38 - 43.

¹⁰² Ex. PG&E-3, p. 9-22

¹⁰³ Ex. PG&E-3, p. 9-22

¹⁰⁴ Ex. PG&E-3, p. 9-22

1 funding is needed for the As-Built Record Consolidation Project in 2017 than was
2 authorized and not spent in 2014 because the scope is expanded. PG&E’s 2014
3 GRC request to “collect, transport, standardize, and electronically archive over
4 15,000 linear feet of gas service records into the enterprise wide records center”¹⁰⁵
5 already encompasses funding for PG&E’s claim of expanded scope of “historical gas
6 distribution regulator station as build records to be archived in a document
7 management system” in the original 2014 GRC scope. The Commission has already
8 provided funding for PG&E to collect, transport, standardize, and electronically
9 archive gas distribution paper as-built records and gas service records in D.14-08-
10 032. The Commission authorized \$14.9 million per year or \$44.7 million over the
11 three-year, 2014 to 2016 GRC cycle. PG&E spent none of the \$14.9 million in 2014
12 due to postponement of the project. Ratepayers should not provide additional
13 funding for a project for which PG&E already received funding but then delayed the
14 starting date from 2013 to 2015.

15 **b. Other MWC JV Projects**

16 PG&E is requesting \$21.238 million in expenses in 2017 for other IT
17 applications and infrastructure projects excluding the As-Built Record Consolidation
18 Project in MWC JV. PG&E’s testimony does not show any additional expenses
19 forecasted for IT applications and infrastructure projects for 2018 and 2019. PG&E’s
20 request would result in approximately \$21 million excluding the As-Built
21 Consolidation Project during the 2018 and 2019 attrition years for IT applications
22 and infrastructure projects.

23 ORA is recommending \$7.0 million in expenses in 2017 in MWC JV. The
24 following table provides PG&E’s forecasts of expenses for MWC JV projects during
25 2017 to 2019.

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¹⁰⁵ D.14-08-032, p. 38

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Table 6-19
MWC JV Projects
PG&E's 2017-2019 Forecast and ORA's 2017 Forecast¹⁰⁶
(In Thousands of Dollars)

Description	PG&E's 2017 Forecast	PG&E's 2018 Forecast	PG&E's 2019 Forecast	ORA's 2017 Forecast
GD GIS Asset Data Visibility Project	\$4,520	\$0	\$0	
SAP Asset	250	0	0	
SAP Enhancements Project	1,600	0	0	
As-Built Record Consolidation Project	14,200	0	0	
Leak Survey Project	3,500	0	0	
Short-Cycle Work Phase 2 Project	325	0	0	
Long-Cycle Corrective Work Project	825	0	0	
Work Scheduling & Dispatch Project	650	0	0	
Job Package Work Design & Management	300	0	0	
Field As-Built Drawing Project	1,000	0	0	
Inspection Mobilization Project	1,100	0	0	
Project Management & Reporting Toolset	300	0	0	
Real Time Monitoring & Event Response	2,518	0	0	
Emergency Response Work Scheduling & Dispatch	400	0	0	
Cybersecurity Project	3,950	0	0	
PG&E's 2017 Forecast for MWC JV	\$35,438	\$0	\$0	\$35,438
Less As-Built Record Consolidation Project	N/A	N/A	N/A	(14,200)
PG&E's Forecast for MWC JV less As-Built Consolidation Project	N/A	N/A	N/A	\$21,238
Normalize MWC JV Forecast w/o As-Built Consolidation Project Over 3 Years (\$21.238 million over 3 years)	N/A	N/A	N/A	\$7,000
2017 to 2019 Forecasts	\$35,438	\$0	\$0	\$7,000

6 During 2012 to 2014, PG&E recorded the majority of the expenses in MWC
7 JV for the Pathfinder Project which will be completed by the end of 2015.¹⁰⁷ PG&E
8 recorded expenses of \$4.468 million in 2012, \$12.766 million in 2013, and \$16.223
9 million in 2014 for the Pathfinder Project. By excluding the 2012 to 2014 recorded
10 expenses for the Pathfinder Project from the 2012 to 2014 recorded expenses for
11 MWC JV, PG&E recorded expenses of \$2.371 million in 2012, \$2.873 million in

¹⁰⁶ Ex. PG&E-3, pp. 9-17 to 9-40

¹⁰⁷ PG&E's response to ORA-PG&E-083, Q. 1

1 2013, and \$1.468 million in 2014 in MWC JV for other IT applications and
 2 infrastructure projects. The three year average of 2012 to 2014 recorded expenses
 3 is \$2.237 million for MWC JV excluding the expenses for the Pathfinder Project. The
 4 following table provides the 2010 to 2014 recorded expenses and 2017 forecast
 5 expenses for MWC JV.

6 **Table 6-20**
 7 **MWC JV¹⁰⁸**
 8 **2010-2014 Recorded Expenses**
 9 **(In Thousands of Dollars)**

Description	2010 Recorded	2011 Recorded	2012 Recorded	2013 Recorded	2014 Recorded	3-Year Average (2012- 2014)
MWC JV-Maintain IT Apps and Infrastructure	\$384	\$314	\$6,839	\$15,639	\$17,691	\$13,390
Less Pathfinder Project	0	0	(4,468)	(12,766)	(16,223)	(11,152)
MWV JV Total excluding Pathfinder Project	\$384	\$314	\$2,371	\$2,873	\$1,468	\$2,237

10 ORA is recommending \$7.0 million in 2017 expenses for MWV JV. ORA
 11 normalized the remaining balance of PG&E's request of \$21.238 million for MWC JV
 12 excluding the As-Built Record Consolidation Project cost over the three-year GRC
 13 cycle to forecast the \$7.0 million in expenses in 2017. ORA's recommendation is
 14 more than triple the three-year average of the 2012 to 2014 recorded expenses of
 15 \$2.237 million for MWC JV excluding the Pathfinder Project expenses that ends in
 16 2015.
 17

¹⁰⁸ PG&E's response to ORA-PG&E-083, Q. 1

1 **IX. OTHER DISTRIBUTION SUPPORT PLANS**

2 PG&E’s Other Distribution Support Plans includes expenses for work
3 activities for Mapping Support (MWC GF); Training Curriculum Development (MWC
4 DN); and Quality Management and Other Miscellaneous Support (MWC AB).¹⁰⁹

5 **A. Overview of PG&E’s and ORA’s Forecasts**

6 PG&E is requesting \$15.044 million in 2017 which is \$1.904 million or 11
7 percent less than 2014 recorded expenses for Other Distribution Support Plans.
8 The following table summarizes PG&E’s request and ORA’s recommendation for
9 Other Distribution Support Plans expenses.

10 **Table 6-21**
11 **Other Distribution Support Plans**
12 **2010-2014 Recorded and 2017 Expense Forecast**
13 **(In Thousands of Dollars)**

Description	2010	2011	2012	2013	2014	PG&E 2017	ORA 2017
MWC GF-Mapping Support	\$770	\$970	\$2,138	\$3,851	\$6,396	\$6,358	\$6,358
MWC DN-Training Curriculum Develop	0	0	3,549	6,366	3,836	4,078	4,078
MWC AB-Quality Management	0	0	192	926	2,307	3,751	3,751
MWC AB-Miscell	(3)	(2,357)	14,340	594	4,406	857	857
Total	\$767	(\$1,387)	\$20,219	\$11,737	\$16,948	\$15,044	\$15,044

14 Source: 2010-2014 data from Ex. PG&E-3, p. 10-30.

15 **B. ORA’s Analysis**

16 ORA reviewed PG&E’s testimony, workpapers, and discovery responses in
17 this area, and does not take issue with PG&E’s forecasts for this area.

¹⁰⁹ Ex. PG&E-3, p. 10-1

1 **X. WITNESS QUALIFICATIONS**

2 My name is Sophie Chia. My business address is 505 Van Ness Avenue,
3 San Francisco, California. I am employed by the California Public Utilities
4 Commission as a Public Utility Financial Examiner IV in the Office of Ratepayer
5 Advocates Energy Cost of Service and Natural Gas Branch.

6 I received a Bachelor of Science degree in Business Administration /
7 Accounting from California State University, San Francisco. I was employed by the
8 Commission from 1985 to 1995, during which I performed audits and analyses of
9 utility operations, prepared testimony, and testified in telecommunications
10 proceedings. Since rejoining the Commission in January 2003, I have been an ORA
11 witness on Customer Service expenses, Other Operating Revenues, Operations
12 Support expenses, Transmission & Distribution expenses, and capital expenditures
13 for General Rate Cases of various electric and gas utilities.

14 This completes my prepared testimony.