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Exhibit Number	:	<u>ORA-8</u>
Commissioner	:	<u>M. Picker</u>
ALJ	:	<u>S. Roscow</u>
Witness	:	<u>K. Lee</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 Capital Expenditures**

San Francisco, California  
April 8, 2016

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# **GAS DISTRIBUTION CAPITAL EXPENDITURES**

## **I. INTRODUCTION**

This exhibit presents the analyses and recommendations of the Office of Ratepayer Advocates (ORA) regarding Pacific Gas and Electric Company’s (PG&E) forecasts of Gas Distribution capital expenditures for 2015 through Test Year (TY) 2017, as presented in Exhibit (Ex.) PG&E-3.

Capital expenditures for gas distribution include plant investments to replace, repair, and protect PG&E’s gas distribution system and to construct new gas distribution facilities. Capital expenditures for new business include investments to install gas infrastructure required to connect new customers to existing PG&E’s system, and to accommodate existing customers’ demand for increased load requirements.

## **II. SUMMARY OF RECOMMENDATIONS**

The following summarizes ORA’s recommendations regarding Gas Distribution capital expenditures for 2015-2017:

- ORA’s forecast of 2015 capital expenditures is based upon PG&E’s recorded actual total capital expenditures of \$686.469 million in Gas Distribution for 2015 as compared to PG&E’s forecast of \$736.370 million for 2015
- ORA does not oppose PG&E’s proposed total capital expenditures of \$1,011.036 million for 2017
- In Measurement and Control, and Compressed Natural Gas Stations Asset Families, ORA recommends capital expenditures of \$57.160 million for 2016 instead of PG&E’s proposed \$60.751 million, for a difference of \$3.591 million, to allow for a gradual ramp up to the 2017 forecast
- In Leak Management, ORA recommends capital expenditures of \$82.763 million for 2016 instead of PG&E’s proposed \$98.702 million for a difference of \$15.939 million, a more gradual increase to the 2017 forecast to allow for more efficient resource deployment

- ORA recommends that PG&E be required to continue its annual report requirement on the Gas Pipeline Replacement Program (GPRP). In addition, ORA recommends that the Commission order PG&E to include the status of the Aldyl-A Replacement Program and the Main Replacement Reliability Program in the GPRP annual report

Table 8-1 compares ORA's and PG&E's 2015-2017 forecasts of Gas Distribution capital expenditures addressed in this exhibit. ORA's forecast of 2015 expenditures for each of the nine areas included in Gas Distribution is based on PG&E's actual adjusted-recorded data for 2015. For 2016, ORA forecasts lower capital expenditures in the Measurement and Control, and Compressed Natural Gas Stations Asset Families area and the Leak Management area based upon a gradual, more linear increase from 2015 to 2017. ORA does not oppose PG&E's forecast of capital expenditures for 2017 for each of the nine areas.

**Table 8-1  
Gas Distribution  
2015-2017 Capital Expenditure Forecast  
(In Thousands of Dollars)**

Description	ORA Recommended			PG&E Proposed <sup>1</sup>		
	2015	2016	2017	2015	2016	2017
Distr Mains & Svcs	\$335,264	\$302,057	\$507,981	\$298,537	\$302,057	\$507,981
Measurement & Control, Compr NG Stations	\$36,531	\$57,160	\$77,788	\$38,430	\$60,751	\$77,788
Distr Op & Maint	\$4,311	\$3,134	\$3,526	\$4,549	\$3,134	\$3,526
Corrosion Control	\$6,170	\$10,653	\$21,555	\$8,644	\$10,653	\$21,555
Leak Management	\$52,178	\$82,763	\$113,347	\$90,282	\$98,702	\$113,347
Gas System Ops	\$53,636	\$61,954	\$85,593	\$58,498	\$61,954	\$85,593
New Business, WRO	\$140,802	\$139,056	\$143,853	\$139,450	\$139,056	\$143,853
Gas Op Technology	\$40,791	\$39,041	\$38,120	\$40,625	\$39,041	\$38,120
Other Distr Support	\$16,784	\$20,760	\$19,274	\$57,354	\$20,760	\$19,274
<b>Total</b>	<b>\$686,469</b>	<b>\$716,578</b>	<b>1,011,036</b>	<b>\$736,370</b>	<b>\$736,108</b>	<b>1,011,036</b>

<sup>1</sup> Ex. PG&E-3, p. 2-24, and Ex. PG&E-18, Errata, p.18-8 and p.18-53.

1 **III. ASSET FAMILY – DISTRIBUTION MAINS AND SERVICES**

2 **A. Overview of PG&E’s Request and ORA’s Recommendation**

3 PG&E’s request of capital expenditures for the Distribution Mains and  
4 Services Asset Family is presented in its testimony Exhibit (Ex.) PG&E-3 Chapter 4,  
5 and Workpapers to Ex. PG&E-3. The capital expenditures are grouped into four  
6 Major Work Categories (MWC): MWC 14 Gas Distribution Pipeline Replacement  
7 Program, MWC 27 Gas Meter Protection, MWC 50 Distribution Reliability General,  
8 and MWC 2J Implement Regulatory Change.

9 The MWC with the highest expenditures is MWC 14 Gas Distribution Pipeline  
10 Replacement Program. This MWC includes priority pipe and non-cathodically  
11 protected bare steel pipe replacement, Aldyl-A plastic pipe replacement, and main  
12 replacement.

13 For the Distribution Main and Services Asset Family, PG&E forecasted capital  
14 expenditures of \$298.537 million for 2015, \$302.181 million for 2016, and \$507.992  
15 million for 2017. These forecasts and ORA’s recommendations are shown in Table  
16 8-2. The adjusted-recorded capital expenditures from 2010 to 2015 are tabulated in  
17 Table 8-3. Both PG&E’s 2015 to 2017 forecasts along with the ORA’s  
18 recommendation, and the historical 2010 to 2015 expenditures, are also displayed in  
19 the bar chart in Figure 8-1.

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**Table 8-2**  
**Asset Family – Distribution Mains & Services**  
**2015-2017 Capital Expenditure Forecast**  
**(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>2</sup>		
		2015	2016	2017	2015	2016	2017
14	G Dist Pipeline Replacement Program	\$235,633	\$228,103	\$409,221	\$210,864	\$228,103	\$409,221
27	Gas Meter Protection	\$639	\$182	\$361	\$335	\$182	\$361
2J	GT&D Impl Regulatory Changes	\$0	\$0	\$0	\$0	\$0	\$0
50	G Dist Reliability General	\$98,992	\$73,772	\$98,400	\$87,338	\$73,772	\$98,400
	<b>Total</b>	<b>\$335,264</b>	<b>\$302,057</b>	<b>\$507,981</b>	<b>\$298,537</b>	<b>\$302,057</b>	<b>\$507,981</b>

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**Table 8-3**  
**Asset Family – Distribution Mains & Services**  
**2010-2015 Recorded Capital Expenditures**  
**(In Thousands of Dollars)**

MWC	Description	2010	2011	2012	2013	2014	2015
14	G Dist Pipeline Replacement Program	\$102,063	\$126,996	\$165,528	\$202,458	\$187,786	\$235,633
27	Gas Meter Protection	\$15	\$9	\$5	\$4,199	\$1,877	\$639
2J	GT&D Impl Regulatory Changes	\$483	\$500	\$320	\$1,716	\$51	\$0
50	G Dist Reliability General	\$24,170	\$41,071	\$56,084	\$78,076	\$51,319	\$98,992
	<b>Total</b>	<b>\$126,731</b>	<b>\$168,576</b>	<b>\$221,936</b>	<b>\$286,449</b>	<b>\$241,033</b>	<b>\$335,264</b>

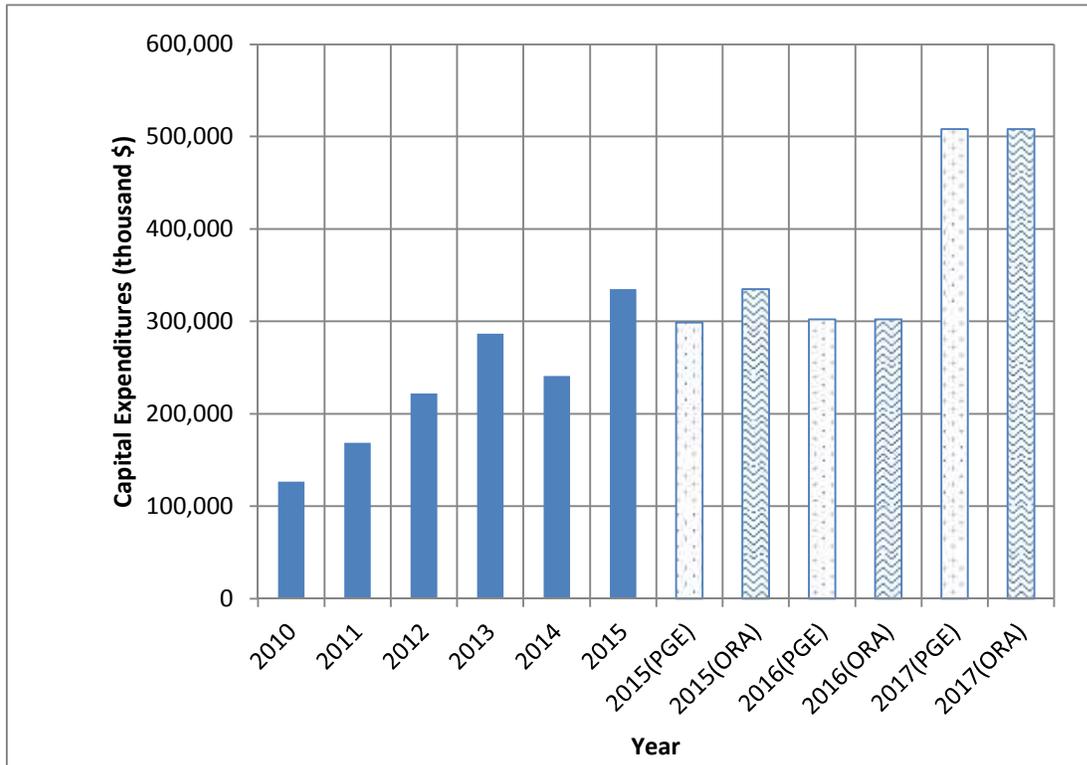
9 Source: 2010-2014 data from Ex. PG&E-3, p. 4-44. 2015 data from Attachment GRC-2017-  
10 PhI\_DR\_ORA\_Oral025\_Atch01.xlsx.

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<sup>2</sup> Ex. PG&E-18, Errata, p.18-8.

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**Figure 8-1**  
**Asset Family – Distribution Mains & Services Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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## 6 **B. ORA's Analysis**

7 ORA reviewed and analyzed PG&E's request of capital expenditures for 2015  
8 to 2017 by first comparing PG&E's forecast for 2015 with the 2015 adjusted-  
9 recorded data. PG&E forecasts \$298.537 million, and the adjusted-recorded  
10 amount is \$335.264 million. ORA recommends adopting the 2015 adjusted-  
11 recorded amount of \$335.264 million as the 2015 capital expenditures.

12 ORA does not oppose PG&E forecasts of \$302.057 million for 2016 and  
13 \$507.981 million for 2017. PG&E's forecast of \$507.981 million for 2017 includes  
14 \$160.4 million for replacement of Gas Pipeline Replacement Program (GPRP)  
15 priority pipe and non-cathodically protected bare steel pipe, \$248.6 million for

1 replacement of Aldyl-A pipe, and \$48.3 million to complete already identified main  
2 replacement projects.<sup>3</sup>

3 To summarize ORA's recommendation for the Distribution Mains and  
4 Services Asset Family capital expenditures, ORA recommends adopting the  
5 adjusted-recorded amount of \$335.264 million for 2015, and agrees with PG&E's  
6 forecasts of \$302.057 million for 2016 and \$507.981 million for 2017.

7 In its testimony, PG&E proposes to terminate its GPRP annual reporting  
8 requirement.<sup>4</sup> ORA opposes this request. The GPRP Report provides extremely  
9 vital and useful information to the Commission and other parties regarding this  
10 imperative program. PG&E has significantly increased its spending for this program  
11 as shown in Table 8-3. PG&E has requested a substantial increase in 2017 for this  
12 program to which ORA has not opposed. Therefore, it is imperative that PG&E  
13 submit a thorough summary of its progress and program through the GPRP Annual  
14 Report. Furthermore, ORA recommends that in future GPRP annual reports, PG&E  
15 should include the status of the Aldyl-A Plastic Replacement Program (MAT 14D)  
16 and the Main Replacement Reliability Program (MAT 50A).<sup>5</sup>

#### 17 **IV. ASSET FAMILIES – MEASUREMENT AND CONTROL, AND** 18 **COMPRESSED NATURAL GAS STATIONS**

##### 19 **A. Overview of PG&E's Request and ORA's Recommendation**

20 PG&E's request of capital expenditures for the Measurement and Control,  
21 and Compressed Natural Gas Stations Asset Families is presented in its testimony  
22 Ex. PG&E-3 Chapter 5 and Workpapers to Ex. PG&E-3. The capital expenditures  
23 are grouped into four MWCs: MAT 50C District Regulator Station Rebuilds, MAT 50L

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<sup>3</sup> Ex. PG&E-3, p. 4-35 and p. 4-36.

<sup>4</sup> Ex. PG&E-3, p. 4-23, lines 30 to 31.

<sup>5</sup> This type of data is likely to be invaluable to the CPUC and Safety and Enforcement Division in determining PG&E's risk reductions associated with pipe leaks and in better understanding PG&E's pipeline replacement rates.

1 Targeted Component Replacement at District Regulator Stations, MWC 2K High  
 2 Pressure Regulator Program, and MWC 31 Compressed Natural Gas Stations.

3 For the Measurement and Control, and Compressed Natural Gas Stations  
 4 Asset Families, PG&E forecasted capital expenditures of \$38.430 million for 2015,  
 5 \$60.751 million for 2016, and \$77.787 million for 2017. These forecasts and ORA's  
 6 recommendations are shown in Table 8-4. The adjusted-recorded capital  
 7 expenditures from 2010 to 2015 are tabulated in Table 8-5. Both PG&E's 2015 to  
 8 2017 forecasts along with the ORA's recommendation, and the historical 2010 to  
 9 2015 expenditures are also displayed in the bar chart in Figure 8-2.

10 **Table 8-4**  
 11 **Asset Families – Measurement & Control, and Compressed Natural Gas Stations**  
 12 **2015-2017 Capital Expenditure Forecast**  
 13 **(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>6</sup>		
		2015	2016	2017	2015	2016	2017
50C	District Reg Station Rebuild	\$7,554	\$16,225	\$24,895	\$14,881	\$17,826	\$24,895
50L	Targeted Component Replacement at Dist Reg Stations	\$7,547	\$7,658	\$7,769	\$6,723	\$7,003	\$7,769
2K	G Dist Repl/Convert Cust HPR	\$17,786	\$29,455	\$41,123	\$13,166	\$32,122	\$41,123
31	NGV-Station Infrastructure	\$3,644	\$3,822	\$4,000	\$3,660	\$3,800	\$4,000
	<b>Total</b>	<b>\$36,531</b>	<b>\$57,160</b>	<b>\$77,787</b>	<b>\$38,430</b>	<b>\$60,751</b>	<b>\$77,787</b>

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<sup>6</sup> Ex. PG&E-3, p. 5-3.

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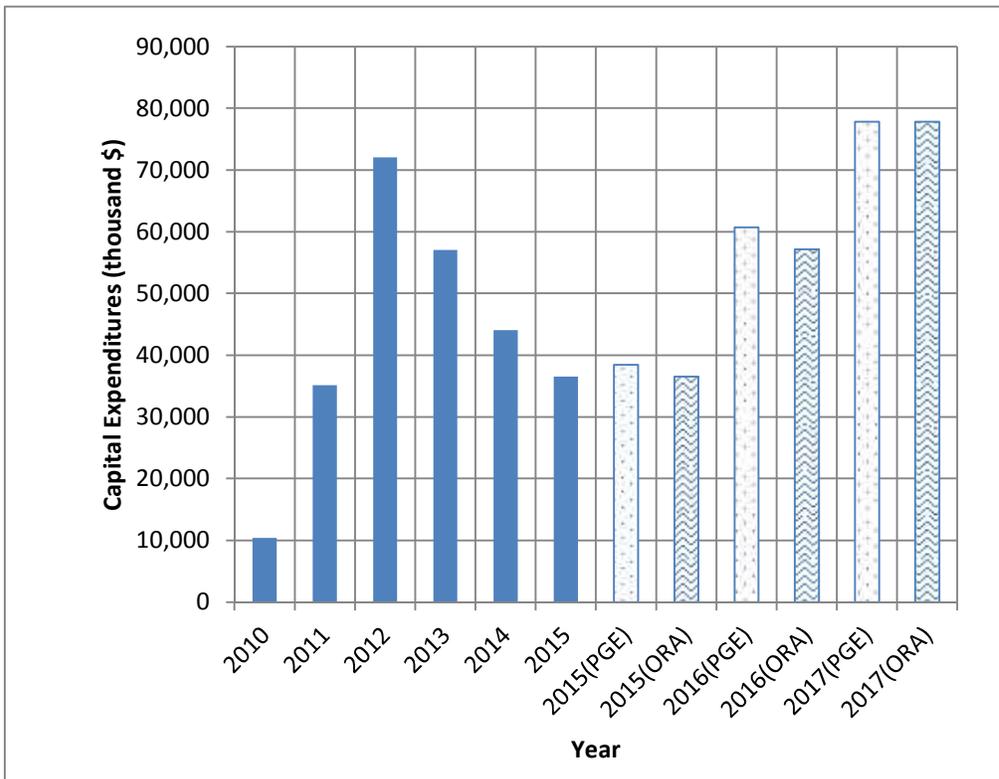
**Table 8-5**  
**Asset Families – Measurement & Control, and Compressed Natural Gas Stations**  
**2010-2015 Recorded Capital Expenditures**  
**(In Thousands of Dollars)**

MWC	Description	2010	2011	2012	2013	2014	2015
50C	District Reg Station Rebuild	\$6,629	\$14,065	\$10,544	\$13,396	\$12,121	\$7,554
50L	Targeted Component Replacement at Dist Reg Stations	\$0	\$0	\$0	\$0	\$4,028	\$7,547
2K	G Dist Repl/Convert Cust HPR	\$1,232	\$19,641	\$60,123	\$40,074	\$25,008	\$17,786
31	NGV-Station Infrastructure	\$2,547	\$1,443	\$1,354	\$3,601	\$2,901	\$3,644
	<b>Total</b>	<b>\$10,409</b>	<b>\$35,149</b>	<b>\$72,021</b>	<b>\$57,070</b>	<b>\$44,058</b>	<b>\$36,531</b>

5 Source: 2010-2014 data from Ex. PG&E-3, p. 5-27. 2015 data from Attachment GRC-2017-  
 6 Phi\_DR\_ORA\_Oral025\_Atch0.xlsx.

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**Figure 8-2**  
**Asset Families – Measurement & Control, and Compressed Natural Gas Stations**  
**Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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1           **B. ORA’s Analysis**

2           ORA reviewed and analyzed PG&E’s request of capital expenditures for 2015  
3 to 2017 by first comparing PG&E’s forecast for 2015 with the 2015 adjusted-  
4 recorded data. PG&E forecasts \$38.430 million, and the adjusted-recorded amount  
5 is \$36.351 million. The two amounts are very similar. ORA recommends adopting  
6 the actual 2015 adjusted-recorded capital expenditure of \$36.351 million as the 2015  
7 capital expenditures.

8           ORA does not oppose the PG&E forecast of \$77.787 million for 2017.  
9 However, ORA believes that PG&E should ramp up the projects gradually from the  
10 2015 spending to the forecasted 2017 expenditures to more efficiently deploy its  
11 resources, that is, to build up its workforce and other resources through a gradual  
12 more linear increase in 2016. Therefore, ORA recommends an expenditure amount  
13 of \$57.160 million for 2016, mid-way between the 2015 and 2017 spending levels.

14           To summarize ORA’s recommendation for the Measurement and Control, and  
15 Compressed Natural Gas Stations Asset Families capital expenditures, ORA  
16 recommends adopting the actual adjusted-recorded amount of \$36.361 million for  
17 2015, ORA’s forecast of \$57.160 million for 2016, and agrees with PG&E’s forecast  
18 of \$77.787 million for 2017.

19           **V. DISTRIBUTION OPERATIONS AND MAINTENANCE**

20           **A. Overview of PG&E’s Request and ORA’s Recommendation**

21           PG&E’s request of capital expenditures for Distribution Operations and  
22 Maintenance is presented in its testimony Exhibit PG&E-03 Chapter 6A and  
23 Workpapers for Exhibit PG&E-03. The capital expenditures are grouped into MWC  
24 74 Regulator Replacement.

25           For the Distribution Operations and Maintenance, PG&E forecasted capital  
26 expenditures of \$4.549 million for 2015, \$3.134 million for 2016, and \$3.526 million  
27 for 2017. These forecasts and ORA’s recommendations are shown in Table 8-6.  
28 The adjusted-recorded capital expenditures from 2010 to 2015 are tabulated in  
29 Table 8-7. Both PG&E’s 2015 to 2017 forecasts along with the ORA’s

1 recommendation, and the historical 2010 to 2015 expenditures are also displayed in  
 2 the bar chart in Figure 8-3.

3 **Table 8-6**  
 4 **Distribution Operations & Maintenance**  
 5 **2015-2017 Capital Expenditure Forecast**  
 6 **(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>7</sup>		
		2015	2016	2017	2015	2016	2017
74	Regulator Replacement	\$4,311	\$3,134	\$3,526	\$4,549	\$3,134	\$3,526
	<b>Total</b>	<b>\$4,311</b>	<b>\$3,134</b>	<b>\$3,526</b>	<b>\$4,549</b>	<b>\$3,134</b>	<b>\$3,526</b>

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8 **Table 8-7**  
 9 **Distribution Operations & Maintenance**  
 10 **2010-2015 Recorded Capital Expenditures**  
 11 **(In Thousands of Dollars)**

	Description	2010	2011	2012	2013	2014	2015
74	Regulator Replacement	\$785	\$752	\$2,576	\$1,782	\$4,849	\$4,311
	<b>Total</b>	<b>\$785</b>	<b>\$752</b>	<b>\$2,576</b>	<b>\$1,782</b>	<b>\$4,849</b>	<b>\$4,311</b>

12 Source: 2010-2014 data from Ex. PG&E-3, p. 6A-39. 2015 data from Attachment GRC-2017-  
 13 Phi\_DR\_ORA\_Oral025\_AtchX01.xlsx.

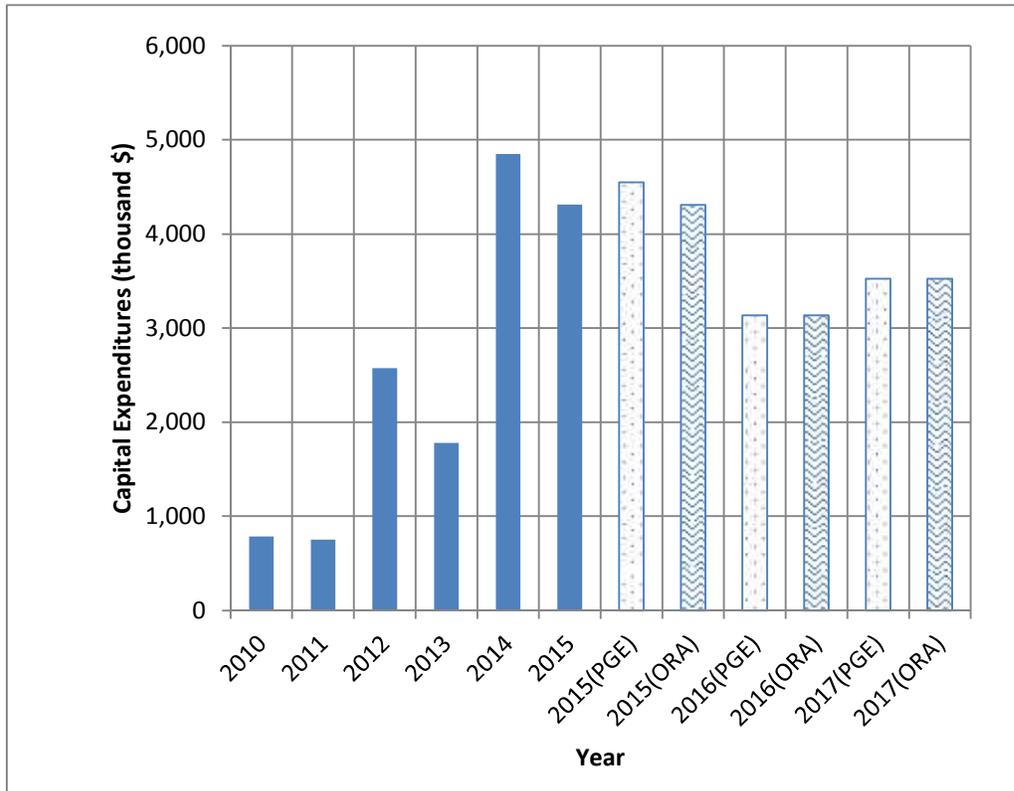
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<sup>7</sup> Ex. PG&E-3, p. 6A-3.

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**Figure 8-3**  
**Distribution Operations & Maintenance Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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### **B. ORA's Analysis**

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7 ORA reviewed and analyzed PG&E's request of capital expenditures for 2015  
8 to 2017 by first comparing PG&E's forecast for 2015 with the actual 2015 adjusted-  
9 recorded data. PG&E forecasts \$4.549 million, and the actual adjusted-recorded  
10 amount is \$4.311 million. The two amounts are very comparable. ORA  
11 recommends adopting the 2015 actual adjusted-recorded amount of \$4.311 million  
12 as the 2015 capital expenditures.

13 Based on its review and recent expenditures, ORA does not oppose PG&E  
14 forecasts of \$3.134 million for 2016 and \$3.526 million for 2017.

15 To summarize ORA's recommendation for the Distribution Operations and  
16 Maintenance capital expenditures, ORA recommends adopting the actual adjusted-

1 recorded amount of \$4.311 million for 2015, and agrees with PG&E’s forecasts of  
 2 \$3.134 million for 2016 and \$3.526 million for 2017.

3 **VI. CORROSION CONTROL**

4 **A. Overview of PG&E’s Request and ORA’s Recommendation**

5 PG&E’s request of capital expenditures for Corrosion Control is presented in  
 6 its testimony Ex. PG&E-3 Chapter 6B and Workpapers to Ex. PG&E-3. The capital  
 7 expenditures are grouped into MWC 50 Corrosion Control.

8 For Corrosion Control, PG&E forecasted capital expenditures of \$8.644  
 9 million for 2015, \$10.653 million for 2016, and \$21.555 million for 2017. These  
 10 forecasts and ORA’s recommendations are shown in Table 8-8. The adjusted-  
 11 recorded capital expenditures from 2010 to 2015 are tabulated in Table 8-9. Both  
 12 the 2015 to 2017 forecasts along with the ORA’s recommendation, and the historical  
 13 2010 to 2015 expenditures are also displayed in the bar chart in Figure 8-4.

14 **Table 8-8**  
 15 **Corrosion Control**  
 16 **2015-2017 Capital Expenditure Forecast**  
 17 **(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>8</sup>		
		2015	2016	2017	2015	2016	2017
50D	Corrosion Control	\$6,170	\$10,653	\$21,555	\$8,644	\$10,653	\$21,555
	<b>Total</b>	<b>\$6,170</b>	<b>\$10,653</b>	<b>\$21,555</b>	<b>\$8,644</b>	<b>\$10,653</b>	<b>\$21,555</b>

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 19 **Table 8-9**  
 20 **Corrosion Control**  
 21 **2010-2015 Recorded Capital Expenditures**  
 22 **(In Thousands of Dollars)**

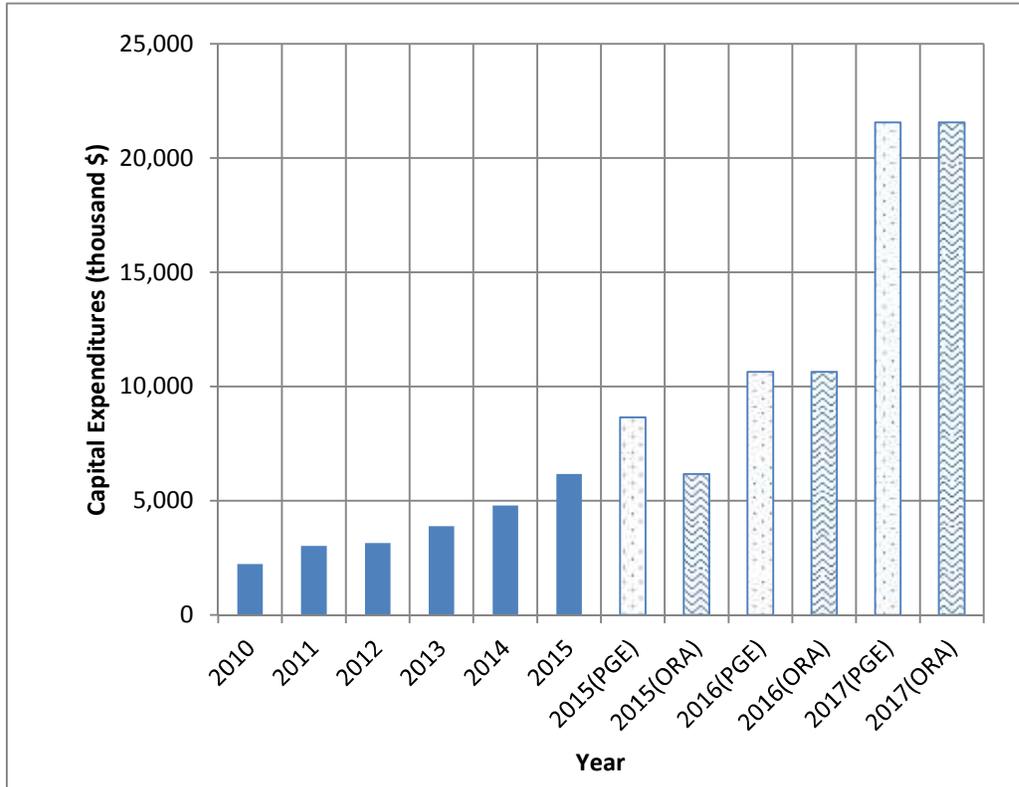
MWC	Description	2010	2011	2012	2013	2014	2015
50D	Corrosion Control	\$2,221	\$3,029	\$3,160	\$3,892	\$4,789	\$6,170
	<b>Total</b>	<b>\$2,221</b>	<b>\$3,029</b>	<b>\$3,160</b>	<b>\$3,892</b>	<b>\$4,789</b>	<b>\$6,170</b>

23 Source: 2010-2014 data from Ex. PG&E-3, p. 6B-42. 2015 data from Attachment GRC-2017-  
 24 Phi\_DR\_ORA\_Oral025\_Atch01.xlsx.

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<sup>8</sup> Ex. PG&E-3, p. 6B-3.

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**Figure 8-4**  
**Corrosion Control Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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### **B. ORA's Analysis**

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7 ORA reviewed and analyzed PG&E's request of capital expenditures for 2015  
8 to 2017 by first comparing PG&E's forecast for 2015 with the 2015 adjusted-  
9 recorded data. PG&E forecasts \$8.644 million, and the adjusted-recorded amount is  
10 \$6.170 million. ORA recommends adopting the 2015 adjusted-recorded amount of  
11 \$6.170 million as the 2015 capital expenditures.

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13 ORA does not oppose PG&E forecasts of \$10.653 million for 2016 and  
14 \$21.555 million for 2017.

14

15 To summarize ORA's recommendation for Corrosion Control capital  
16 expenditures, ORA recommends adopting the adjusted-recorded amount of \$6.170  
17 million for 2015, and agrees with PG&E's forecasts of \$10.653 million for 2016 and  
18 \$21.555 million for 2017.

1 **VII. LEAK MANAGEMENT**

2 **A. Overview of PG&E’s Request and ORA’s Recommendation**

3 PG&E’s request of capital expenditures for Leak Management is presented in  
4 its testimony Ex. PG&E-3 Chapter 6C and Workpapers to Ex. PG&E-3. The capital  
5 expenditures are grouped into two MWCs: MWC 50 Gas Distribution Reliability  
6 General and MWC 52 Gas Distribution Emergency Response.

7 For Leak Management, PG&E forecasted capital expenditures of \$90.282  
8 million for 2015, \$98.702 million for 2016, and \$113.347 million for 2017. These  
9 forecasts and ORA’s recommendations are shown in Table 8-10. The adjusted-  
10 recorded capital expenditures from 2010 to 2015 are tabulated in Table 8-11. Both  
11 the 2015 to 2017 forecasts along with the ORA’s recommendation, and the historical  
12 2010 to 2015 expenditures are also displayed in the bar chart in Figure 8-5.

13 **Table 8-10**  
14 **Leak Management**  
15 **2015-2017 Capital Expenditure Forecast**  
16 **(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>9</sup>		
		2015	2016	2017	2015	2016	2017
50	G Dist Reliability General	\$50,739	\$81,703	\$112,667	\$89,632	\$98,038	\$112,667
52	G Dist Leak Repl/Emergency	\$1,439	\$1060	\$680	\$650	\$664	\$680
	<b>Total</b>	<b>\$52,178</b>	<b>\$82,763</b>	<b>\$113,347</b>	<b>\$90,282</b>	<b>\$98,702</b>	<b>\$113,347</b>

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<sup>9</sup> Ex. PG&E-18, Errata, p.18-53.

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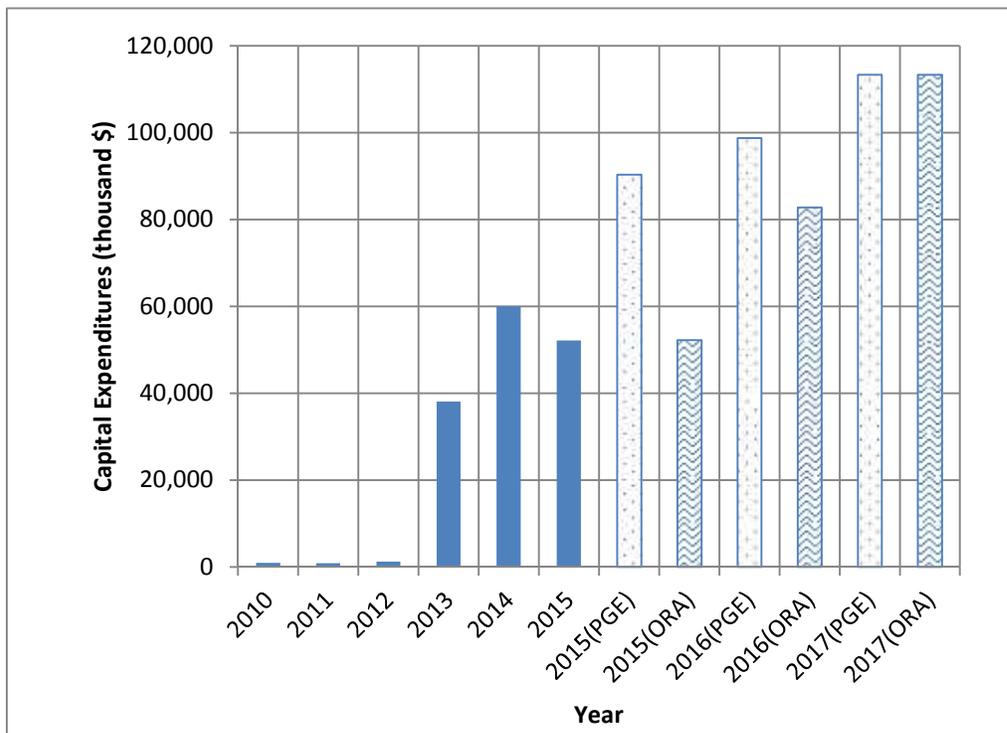
**Table 8-11  
Leak Management  
2010-2015 Recorded Capital Expenditures  
(In Thousands of Dollars)**

MWC	Description	2010	2011	2012	2013	2014	2015
50	G Dist Reliability General	\$358	\$346	\$805	\$37,510	\$51,994	\$50,739
52	G Dist Leak Repl/Emergency	\$600	\$520	\$418	\$601	\$8,007	\$1,439
	<b>Total</b>	<b>\$959</b>	<b>\$866</b>	<b>\$1,223</b>	<b>\$38,112</b>	<b>\$60,001</b>	<b>\$52,178</b>

5 Source: 2010-2014 data from Ex. PG&E-3, p. 6C-53. 2015 data from Attachment GRC-2017-  
6 Phi\_DR\_ORA\_Oral025\_Atch01.xlsx.

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**Figure 8-5  
Leak Management Capital Expenditures  
2010-2015 Recorded and 2015-2017 Forecast  
(In Thousands of Dollars)**



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**B. ORA's Analysis**

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ORA reviewed and analyzed PG&E's request of capital expenditures for 2015 to 2017 by first comparing PG&E's forecast for 2015 with the 2015 adjusted-

1 recorded data. PG&E forecasts \$90.282 million, and the adjusted-recorded amount  
2 is \$52.178 million. ORA recommends adopting the 2015 adjusted-recorded amount  
3 of \$52.178 million as the 2015 capital expenditures.

4 ORA does not oppose PG&E forecast \$113.347 million for 2017. ORA  
5 proposes that PG&E should ramp up the project spending in this area gradually from  
6 the 2015 spending to the forecasted 2017 expenditures to more efficiently deploy its  
7 resources. ORA's 2016 capital expenditure forecast is based upon a gradual, more  
8 linear trend. ORA recommends an expenditure amount of \$82.763 million for 2016,  
9 mid-way between the 2015 and 2017 spending levels. This is a sizable increase in  
10 capital expenditures in contrast to past expenditures.

11 To summarize ORA's recommendation for the Leak Management capital  
12 expenditures, ORA recommends adopting the adjusted-recorded amount of \$52.178  
13 million for 2015, a forecast of \$82.763 million for 2016, and agrees with PG&E's  
14 forecast of \$113.347 million for 2017.

## 15 **VIII. GAS SYSTEM OPERATIONS**

### 16 **A. Overview of PG&E's Request and ORA's Recommendation**

17 PG&E's request of capital expenditures for Gas System Operations is  
18 presented in its testimony Ex. PG&E-3 Chapter 7 and Workpapers to Ex. PG&E-3.  
19 The capital expenditures are grouped into two MWCs: MWC 47 Distribution Capacity  
20 and MWC 4A Distribution Control Operations Assets.

21 For Gas System Operations, PG&E forecasted capital expenditures of  
22 \$58.498 million for 2015, \$61.954 million for 2016, and \$85.593 million for 2017.  
23 These forecasts and ORA's recommendations are shown in Table 8-12. The  
24 adjusted-recorded capital expenditures from 2010 to 2015 are tabulated in Table 8-  
25 13. Both PG&E's 2015 to 2017 forecasts along with the ORA's recommendation,  
26 and the historical 2010 to 2015 expenditures are also displayed in the bar chart in  
27 Figure 8-6.

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**Table 8-12  
Gas System Operations  
2015-2017 Capital Expenditure Forecast  
(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>10</sup>		
		2015	2016	2017	2015	2016	2017
47	G Dist Capacity	\$26,960	\$35,118	\$46,176	\$27,775	\$35,118	\$46,176
4A	G Dist Ctrl Operations Assets	\$26,676	\$26,836	\$39,417	\$30,723	\$26,836	\$39,417
	<b>Total</b>	<b>\$53,636</b>	<b>\$61,954</b>	<b>\$85,593</b>	<b>\$58,498</b>	<b>\$61,954</b>	<b>\$85,593</b>

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**Table 8-13  
Gas System Operations  
2010-2015 Recorded Capital Expenditures  
(In Thousands of Dollars)**

MWC	Description	2010	2011	2012	2013	2014	2015
47	G Dist Capacity	\$14,894	\$12,544	\$14,392	\$20,068	\$25,943	\$26,960
4A	G Dist Ctrl Operations Assets	\$0	\$0	\$2,420	\$28,037	\$25,557	\$26,676
	<b>Total</b>	<b>\$14,894</b>	<b>\$12,544</b>	<b>\$16,812</b>	<b>\$48,106</b>	<b>\$51,500</b>	<b>\$53,636</b>

10 Source: 2010-2014 data from Ex. PG&E-3, p. 7-44. 2015 data from Attachment GRC-2017-  
11 Phi\_DR\_ORA\_Oral025\_Atch01.xlsx.

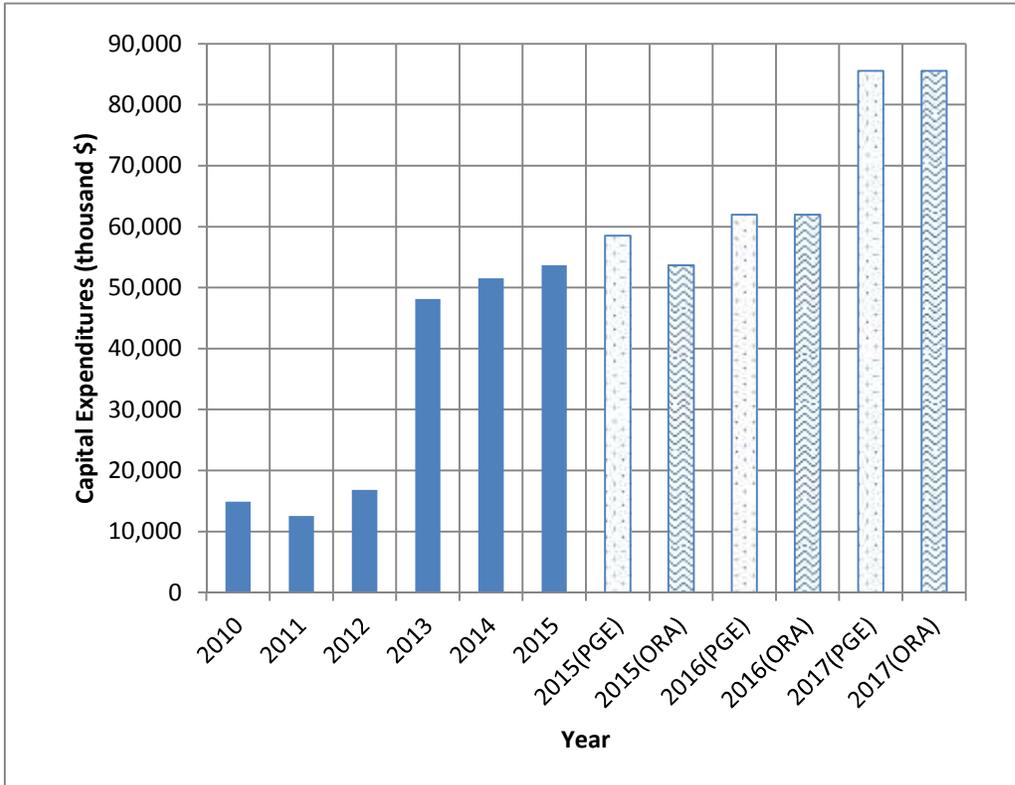
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<sup>10</sup> Ex. PG&E-3, p. 7-2.

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**Figure 8-6**  
**Gas System Operations Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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### **B. ORA's Analysis**

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ORA reviewed and analyzed PG&E's request of capital expenditures for 2015 to 2017 by first comparing PG&E's forecast for 2015 with the 2015 adjusted-recorded data. PG&E forecasts \$58.498 million, and the adjusted-recorded amount is \$53.636 million. ORA recommends adopting the 2015 adjusted-recorded amount of \$53.636 million as the 2015 capital expenditures.

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ORA does not oppose PG&E forecasts of \$61.954 million for 2016 and \$85.593 million for 2017.

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To summarize ORA's recommendation for Gas System Operations capital expenditures, ORA recommends adopting the adjusted-recorded amount of \$53.636 million for 2015, and agrees with PG&E's forecasts of \$61.954 million for 2016 and \$85.593 million for 2017.

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1 **IX. NEW BUSINESS and WORK AT THE REQUEST OF OTHERS**

2 **A. Overview of PG&E’s Request and ORA’s Recommendation**

3 PG&E’s request of capital expenditures for New Business and Work at the  
4 Request of Others (WRO) is presented in its testimony Ex. PG&E-3 Chapter 8 and  
5 Workpapers to Ex. PG&E-3. The capital expenditures are grouped into two MWCs:  
6 MWC 29 New Business and MWC 51 Gas Work at the Request of Others.

7 For New Business and Work at the Request of Others, PG&E forecasted  
8 capital expenditures of \$139.450 million for 2015, \$139.056 million for 2016, and  
9 \$143.853 million for 2017. These forecasts and ORA’s recommendations are shown  
10 in Table 8-14. The adjusted-recorded capital expenditures from 2010 to 2015 are  
11 tabulated in Table 8-15. Both the 2015 to 2017 forecasts along with the ORA’s  
12 recommendation, and the historical 2010 to 2015 expenditures are also displayed in  
13 the bar chart in Figure 8-7.

14 **Table 8-14**  
15 **New Business and Work at the Request of Others**  
16 **2015-2017 Capital Expenditure Forecast**  
17 **(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>11</sup>		
		2015	2016	2017	2015	2016	2017
29	Gas New Business	\$66,414	\$74,901	\$79,200	\$80,000	\$74,901	\$79,200
51	Gas WRO	\$74,388	\$64,155	\$64,653	\$59,450	\$64,155	\$64,653
	<b>Total</b>	<b>\$140,802</b>	<b>\$139,056</b>	<b>\$143,853</b>	<b>\$139,450</b>	<b>\$139,056</b>	<b>\$143,853</b>

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<sup>11</sup> Ex. PG&E-3, p. 8-3.

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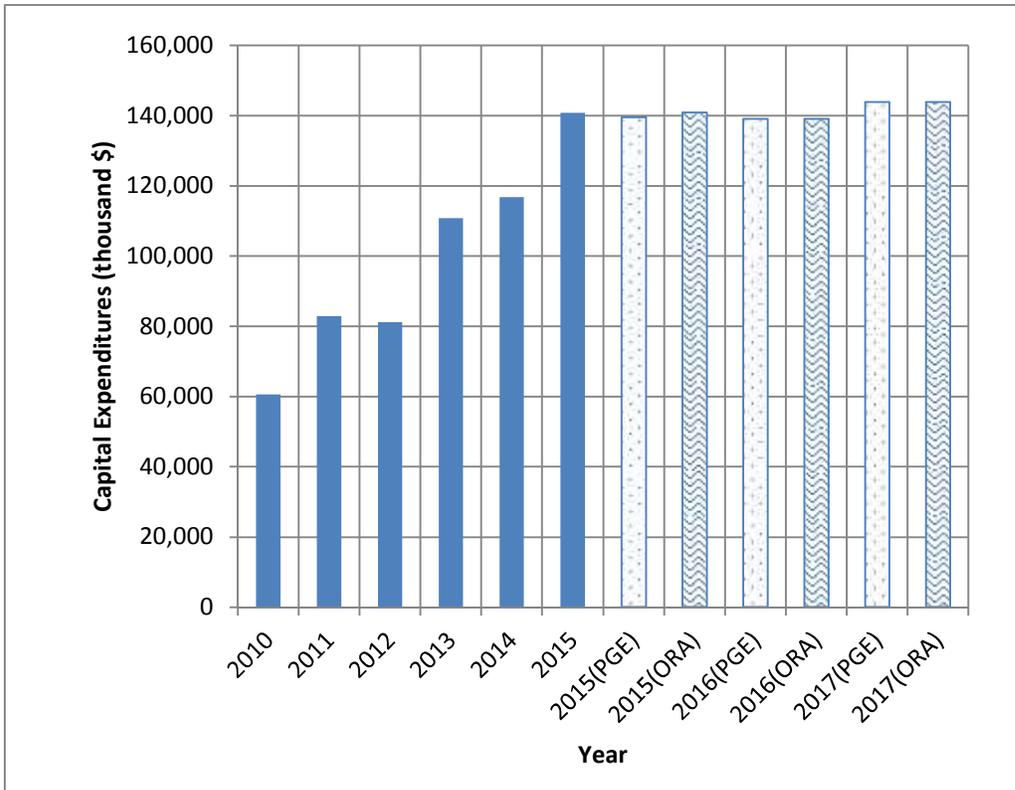
**Table 8-15**  
**New Business and Work at the Request of Others**  
**2010-2015 Recorded Capital Expenditures**  
**(In Thousands of Dollars)**

MWC	Description	2010	2011	2012	2013	2014	2015
29	Gas New Business	\$23,627	\$32,078	\$36,766	\$51,073	\$51,836	\$66,414
51	Gas WRO	\$37,063	\$50,834	\$44,390	\$59,740	\$65,018	\$74,388
	<b>Total</b>	<b>\$60,689</b>	<b>\$82,912</b>	<b>\$81,156</b>	<b>\$110,813</b>	<b>\$116,854</b>	<b>\$140,802</b>

5 Source: 2010-2014 data from Ex. PG&E-3, p. 8-24. 2015 data from Attachment GRC-2017-  
 6 Phi\_DR\_ORA\_Oral025\_Atch01.xlsx.

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**Figure 8-7**  
**New Business and Work at the Request of Others Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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1           **B. ORA’s Analysis**

2           ORA reviewed and analyzed PG&E’s request of capital expenditures for 2015  
3 to 2017 by first comparing PG&E’s forecast for 2015 with the 2015 adjusted-  
4 recorded data. PG&E forecasts \$139.450 million, and the adjusted-recorded  
5 amount is \$140.802 million. The two amounts are very similar. ORA recommends  
6 adopting the 2015 adjusted-recorded amount of \$140.802 million as the 2015 capital  
7 expenditures.

8           ORA does not oppose PG&E forecasts of \$139.056 million for 2016 and  
9 \$143.853 million for 2017.

10          To summarize ORA’s recommendation for New Business and Work at the  
11 Request of Others capital expenditures, ORA recommends adopting the adjusted-  
12 recorded amount of \$140.802 million for 2015, and agrees with PG&E’s forecasts of  
13 \$139.056 million for 2016 and \$143.853 million for 2017.

14   **X.    GAS OPERATIONS TECHNOLOGY**

15          **A. Overview of PG&E’s Request and ORA’s Recommendation**

16          PG&E’s request of capital expenditures for Gas Operations Technology is  
17 presented in its testimony Ex. PG&E-3 Chapter 9 and Workpapers to Ex. PG&E-3.  
18 The capital expenditures are grouped into MWC 2F Maintain IT Applications and  
19 Infrastructure.

20          For Gas Operations Technology, PG&E forecasted capital expenditures of  
21 \$40.625 million for 2015, \$39.041 million for 2016, and \$38.120 million for 2017.  
22 These forecasts and ORA’s recommendations are shown in Table 8-16. The  
23 adjusted-recorded capital expenditures from 2010 to 2015 are tabulated in Table 8-  
24 17. Both the 2015 to 2017 forecasts along with the ORA’s recommendation, and the  
25 historical 2010 to 2015 expenditures are also displayed in the bar chart in Figure 8-  
26 8.

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**Table 8-16  
Gas Operations Technology  
2015-2017 Capital Expenditure Forecast  
(In Thousands of Dollars)**

	Description	ORA Recommended			PG&E Proposed <sup>12</sup>		
		2015	2016	2017	2015	2016	2017
2F	Maintain IT Apps and Infrastructure	\$40,791	\$39,041	\$38,120	\$40,625	\$39,041	\$38,120
	<b>Total</b>	<b>\$40,791</b>	<b>\$39,041</b>	<b>\$38,120</b>	<b>\$40,625</b>	<b>\$39,041</b>	<b>\$38,120</b>

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**Table 8-17  
Gas Operations Technology  
2010-2015 Recorded Capital Expenditures  
(In Thousands of Dollars)**

	Description	2010	2011	2012	2013	2014	2015
2F	Maintain IT Apps and Infrastructure	\$1,424	\$1,480	\$13,774	\$28,548	\$33,574	\$40,791
	<b>Total</b>	<b>\$1,424</b>	<b>\$1,480</b>	<b>\$13,774</b>	<b>\$28,548</b>	<b>\$33,574</b>	<b>\$40,791</b>

10 Source: 2010-2014 data from Ex. PG&E-3, p. 9-42. 2015 data from Attachment GRC-2017-  
11 Phi\_DR\_ORA\_Oral025\_Atch01.xlsx.

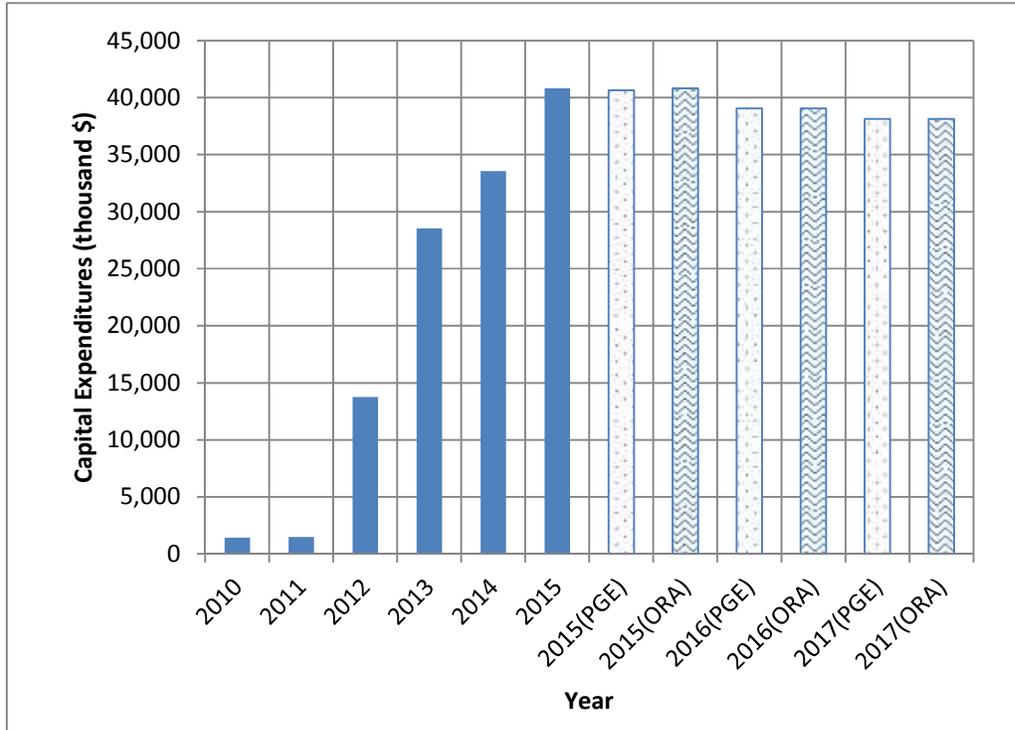
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<sup>12</sup> Ex. PG&E-3, p. 9-4.

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**Figure 8-8**  
**Gas Operations Technology Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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## **B. ORA's Analysis**

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7 ORA reviewed and analyzed PG&E's request of capital expenditures for 2015  
8 to 2017 by first comparing PG&E's forecast for 2015 with the 2015 adjusted-  
9 recorded data. PG&E forecasts \$40.625 million, and the adjusted-recorded amount  
10 is \$40.791 million. The two amounts are very similar. ORA recommends adopting  
11 the 2015 adjusted-recorded amount of \$40.791 million as the 2015 capital  
12 expenditures.

13 ORA does not oppose PG&E forecasts of \$39.041 million for 2016 and  
14 \$38.120 million for 2017.

15 To summarize ORA's recommendation for Gas Operations Technology  
16 capital expenditures, ORA recommends adopting the adjusted-recorded amount of  
17 \$40.791 million for 2015, and agrees with PG&E's forecasts of \$39.041 million for  
18 2016 and \$38.120 million for 2017.

1 **XI. OTHER DISTRIBUTION SUPPORT PLANS**

2 **A. Overview of PG&E’s Request and ORA’s Recommendation**

3 PG&E’s request of capital expenditures for Other Distribution Support Plans is  
 4 presented in its testimony Ex. PG&E-3 Chapter 10 and Workpapers to Ex. PG&E-3.  
 5 The capital expenditures are grouped into two MWCs: MWC 5 and MWC 78, with  
 6 each MWC broken down into several sub-categories.

7 For Other Distribution Support Plans, PG&E forecasted capital expenditures  
 8 of \$57.354 million for 2015, \$20.736 million for 2016, and \$19.274 million for 2017.  
 9 These forecasts and ORA’s recommendations are shown in Table 8-18. The  
 10 adjusted-recorded capital expenditures from 2010 to 2015 are tabulated in Table 8-  
 11 19. Both the 2015 to 2017 forecasts along with the ORA’s recommendation, and the  
 12 historical 2010 to 2015 expenditures are also displayed in the bar chart in Figure 8-  
 13 9.

14 **Table 8-18**  
 15 **Other Distribution Support Plans**  
 16 **2015-2017 Capital Expenditure Forecast**  
 17 **(In Thousands of Dollars)**

MWC	Description	ORA Recommended			PG&E Proposed <sup>13</sup>		
		2015	2016	2017	2015	2016	2017
05	Capital Tools and Equipment Replacement	\$6,374	\$2,660	\$2,725	\$2,604	\$2,660	\$2,725
05	Physical Security	\$0	\$0	\$0	\$4,000	\$0	\$0
05	Emergency/Contingency	\$13	\$0	\$0	\$43,779	\$0	\$0
78	Training Center	\$0	\$16,076	\$0	\$1,700	\$16,076	\$0
78	Hot Backup	\$0	\$0	\$4,942	\$0	\$0	\$4,942
78	Weld Shop	\$0	\$0	\$1,750	\$0	\$0	\$1,750
78	Spoil Recycling	\$0	\$0	\$6,857	\$0	\$0	\$6,857
78	Building Projects<\$3M	\$10,397	\$2,000	\$3,000	\$5,271	\$2,000	\$3,000
78	Building Projects>\$3M	\$0	\$0	\$0	\$0	\$0	\$0
	<b>Total</b>	<b>\$16,784</b>	<b>\$20,736</b>	<b>\$19,274</b>	<b>\$57,354</b>	<b>\$20,736</b>	<b>\$19,274</b>

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 13 Ex. PG&E-3, p. 10-4.

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**Table 8-19**  
**Other Distribution Support Plans**  
**2010-2015 Recorded Capital Expenditures**  
**(In Thousands of Dollars)**

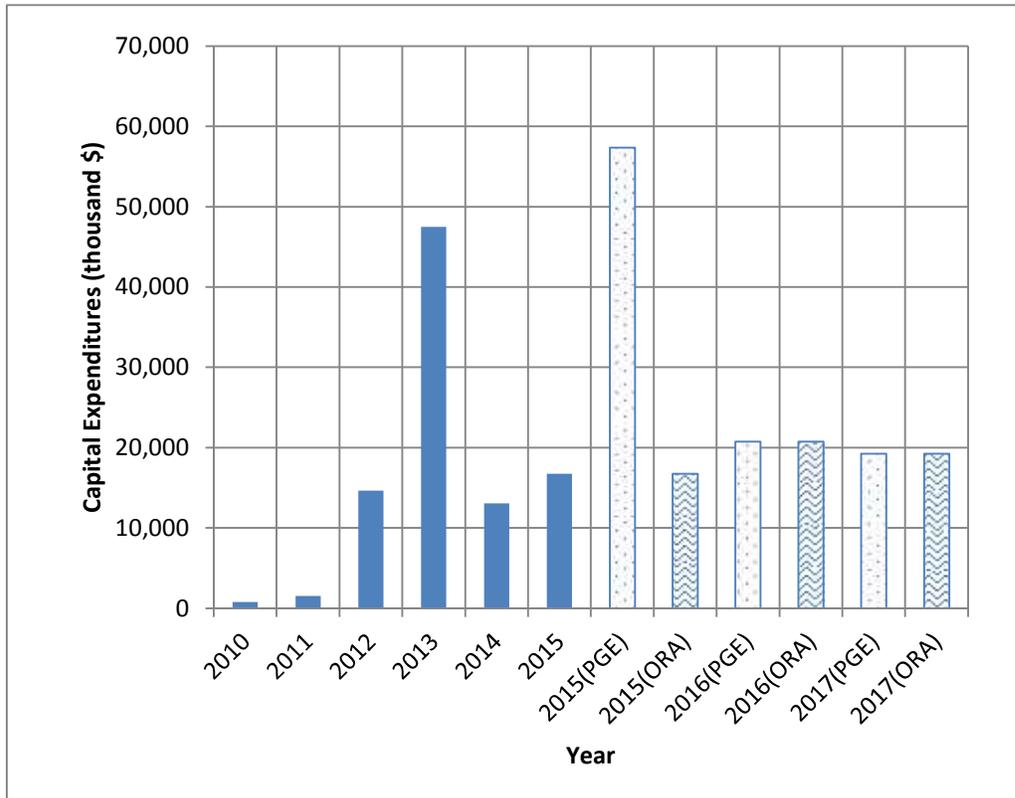
<b>MWC</b>	<b>Description</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
05	Capital Tools and Equipment Replacement	\$766	\$1,040	\$1,872	\$2,254	\$1,828	\$6,374
05	Physical Security	\$0	\$0	\$0	\$0	\$0	\$0
05	Emergency/Contingency	\$0	\$0	\$0	\$0	\$0	\$13
78	Training Center	\$0	\$0	\$362	\$3,547	\$5,495	\$0
78	Hot Backup	\$0	\$0	\$0	\$0	\$0	\$0
78	Weld Shop	\$0	\$0	\$0	\$0	\$0	\$0
78	Spoil Recycling	\$0	\$0	\$0	\$0	\$0	\$0
78	Building Projects<\$3M	\$29	\$496	\$1,740	\$3,498	\$1,377	\$10,397
78	Building Projects>\$3M	\$0	\$0	\$10,717	\$38,173	\$4,340	\$0
	<b>Total</b>	<b>\$795</b>	<b>\$1,536</b>	<b>\$14,692</b>	<b>\$47,473</b>	<b>\$13,039</b>	<b>\$16,784</b>

5 Source: 2010-2014 data from Ex. PG&E-3, p. 10-30. 2015 data from Attachment GRC-2017-  
6 Phi\_DR\_ORA\_Oral025\_Atch01.xlsx.

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**Figure 8-9**  
**Other Distribution Support Plans Capital Expenditures**  
**2010-2015 Recorded and 2015-2017 Forecast**  
**(In Thousands of Dollars)**



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### **B. ORA's Analysis**

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7 ORA reviewed and analyzed PG&E's request of capital expenditures for 2015  
8 to 2017 by first comparing PG&E's forecast for 2015 with the 2015 adjusted-  
9 recorded data. PG&E forecasts \$57.354 million, and the adjusted-recorded amount  
10 is \$16.784 million. ORA recommends adopting the 2015 adjusted-recorded amount  
11 of \$16.784 million as the 2015 capital expenditures.

12

13 ORA does not oppose PG&E forecasts of \$20.736 million for 2016 and  
14 \$19.274 million for 2017.

14

15 To summarize ORA's recommendation for Other Distribution Support Plans  
16 capital expenditures, ORA recommends adopting the adjusted-recorded amount of  
17 \$16.784 million for 2015, and agrees with PG&E's forecasts of \$20.736 million for

1 2016 and \$19.274 million for 2017. These capital expenditure forecasts are  
2 consistent with most prior year spending since 2012.

3 **XII. WITNESS QUALIFICATIONS**

4 My name is Kelly C. Lee. My business address is 505 Van Ness Avenue,  
5 San Francisco, California. I am employed by the California Public Utilities  
6 Commission as a Senior Utilities Engineer in the Office of Ratepayer Advocates  
7 Energy Safety and Infrastructure Branch.

8 I received a Bachelor of Science degree in Mechanical Engineering from San  
9 Jose State University, a Master of Science degree and a Master of Engineering  
10 degree from the University of California, Berkeley, and a Master of Business  
11 Administration degree from the University of San Francisco. I am a registered  
12 Professional Engineer in Mechanical Engineering in the State of California.

13 Before joining the CPUC, I worked in the private industry performing  
14 engineering research and analysis, managing programs, and supervising engineers  
15 in the aerospace and alternate energy fields. Since joining the Commission in 1999,  
16 I have worked as an analyst and project coordinator on various gas, electric, and  
17 telecommunication cases.

18 This completes my prepared testimony.