

Docket:	:	<u>A.12-11-009</u>
Exhibit Number	:	<u>DRA-8</u>
Commissioner	:	<u>Florio</u>
ALJ	:	<u>Pulsifer</u>
Witness	:	<u>Bumgardner</u>



**DIVISION OF RATEPAYER ADVOCATES  
CALIFORNIA PUBLIC UTILITIES COMMISSION**

**Report on the Results of Operations  
for  
Pacific Gas and Electric Company  
General Rate Case  
Test Year 2014**

**Electric Distribution Capital Expenditures  
Part 2 of 2**

San Francisco, California  
May 3, 2013

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	SUMMARY OF RECOMMENDATIONS.....	4
III.	GENERAL OVERVIEW .....	5
IV.	DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION- EMERGENCY RESPONSE.....	7
	A.ROUTINE EMERGENCIES (MWC 17).....	7
	B.MAJOR EMERGENCIES (MWC 95) .....	9
	C.DISTRIBUTION SUBSTATION EMERGENCY EQUIPMENT REPLACEMENT (MWC 59) .....	10
V.	DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION- SAFETY, MAINTENANCE AND COMPLIANCE .....	11
	A.DISTRIBUTION SUBSTATION SAFETY (MWC 58) .....	12
	1. Seismic .....	13
	2. Fire Protection Suppression.....	14
	3. Security.....	15
	4. Safety .....	16
	5. Escalation .....	16
	B.INSTALL AND REPLACE OVERHEAD (MWC 2A) .....	17
	1. Total Cost of Overhead Notifications .....	18
	2. Total Cost of Overhead Critical Operating Equipment (COE) Notifications .....	19
	3. Total Cost of Bird Safe and Bird Retrofit Notifications .....	20
	4. Idle Facilities Removal.....	21
	5. Major Notifications .....	22
	6. SF Incandescent Streetlights .....	22
	7. Permit Updates .....	23
	8. Infrared Reconductor and Infrared Switch Replacement .....	24
	9. Escalation .....	25
	10.LED Streetlight Replacement.....	25
	C.INSTALL AND REPLACE UNDERGROUND (MWC 2B) .....	25
	1. Total Cost of Underground Notifications .....	26

2. Total Cost of Underground COE Notifications .....	27
3. Major Notifications .....	27
4. Underground Oil Switch Replacements .....	28
5. Escalation .....	29
D.INSTALL AND REPLACE NETWORK (MWC 2C).....	29
1. Total Cost of Network Transformers and Protector Replacements;.....	30
2. Total Costs of Network Swivelok Manhole Cover Replacement.....	31
3. Total Cost of Network Protector Relay Replacement.....	32
4. SCADA Safety Monitoring Project .....	32
5. Condition Based Maintenance (CBM) Project.....	33
6. Fiber Optics/SCADA-Existing System Capital .....	33
7. Escalation .....	33
VI. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION- OPERATIONS, AUTOMATION AND SUPPORT .....	34
A.CAPITAL TOOLS AND EQUIPMENT (MWC 05) .....	34
1. Tools & Equipment—Chapter 3 .....	35
2. Tools and Equipment—Chapter 20.....	35
3. Material Overdrawn—Chapter 20 .....	36
B.DISTRIBUTION, AUTOMATION AND PROTECTION (MWC 09) 36	
1. Installation of Substation SCADA .....	37
2. Installation of Feeder SCADA.....	38
3. Replacement Substation SCADA .....	38
4. Replacement of Feeder SCADA.....	39
5. Fire Risk Management (FRM).....	39
6. Replacement of Substation Protective Relays.....	40
7. Emergency Equipment Replacement .....	40
8. Escalation .....	41
C.DISTRIBUTION CONTROL CENTER (MWC 63D) .....	41
1. Distribution Control Center Consolidation.....	42
2. Escalation .....	42
D.MANAGE BUILDING (MWC 78).....	43

1. ATS Technical Center Facility Upgrade .....	44
2. ATS Technical Center Parking Lot.....	45
3. ATS Electric Lab Facility (Performance Labs) .....	45
4. Weld Lab Upgrade .....	46
5. Buildings-Normal Operations .....	46
6. San Carlos Service Center .....	47
7. Colma Service Center.....	47
8. Electric Distribution Building-Mapping .....	48
9. Santa Maria Storm Room .....	49
10. Stockton Service Center Upgrade .....	49
11. Cinnabar Service Center .....	50
12. Electric Distribution Buildings-Meter Reading Upgrades .....	51
13. Electric Distribution Buildings-Auburn Helicopter.....	52
14. Additional Security .....	52
15. Escalation .....	53
<b>E. BUILD INFORMATION TECHNOLOGY APPLICATIONS AND INFRASTRUCTURE (MWC 2F).....</b>	<b>53</b>
1. Workforce Mobilization projects .....	55
2. The Electric Distribution-Geographic Information System (ED-GIS (Electric)) .....	56
3. Data Historian for Electric Distribution .....	58
4. Work Scheduling and Dispatch System Consolidation Project .....	58
5. Outage Reporting & Analysis System Replacement.....	59
6. Customer Connections Online .....	60
7. Estimator Tools Enhanced with Graphic Work Design .....	61
8. Emergency Outage Response Technology .....	61
9. Vegetation Control Application Replacement .....	62
10. Asset Risk Management Tool for Public Safety .....	63
11. SAP Work Management .....	63
12. Build IT projects under \$1 million.....	64
13. Distribution Management System .....	64

1                                   **ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES**

2   **I.       INTRODUCTION**

3                   This exhibit presents the analyses and recommendations of the Division of  
4 Ratepayer Advocates (DRA) regarding Pacific Gas and Electric Company’s (PG&E)  
5 forecasts of Electric Distribution capital expenditures for 2012 through Test Year  
6 (TY) 2014.

7                   Electric distribution capital expenditures include plant investment projects in  
8 electric meters, distribution substations, underground cables, and  
9 replacing/reinforcing poles. Electric distribution capital includes projects to construct  
10 or modify facilities for the distribution of electricity (at 15,000 volts and below),  
11 projects to construct or modify substations to transform transmission voltage to a  
12 lower distribution voltage, and projects to improve system reliability (including aging  
13 infrastructure issues).

14                  PG&E explains its Electric Distribution forecasts within various chapters of  
15 Exhibit PG&E-4. This exhibit specifically addresses PG&E’s forecasts associated  
16 with:

- 17                  • **Electric Distribution-Emergency Response**—electric emergencies are  
18 created when an immediate response on behalf of PG&E is required to  
19 protect the community from potential safety hazards; outages are one  
20 example of an electric emergency. PG&E has developed a proactive  
21 approach to managing electric emergencies in order to reduce response  
22 times and provide for quicker restoration of services to customers.<sup>1</sup>
- 23                  ○ **Routine Emergencies** (Major Work Category [MWC] 17)—routine  
24 emergency work that meets capital accounting criteria, such as  
25 equipment replacements, rather than repairs.<sup>2</sup>
- 26                  ○ **Major Emergencies** (MWC 95)—major emergency work that meets  
27 capital accounting requirement.<sup>3</sup>

---

<sup>1</sup> Exh. PG&E-4, p. 1-17, lines 18-25

<sup>2</sup> Exh. PG&E-4, p. 10-15, lines 10-13

<sup>3</sup> Exh. PG&E-4, p. 10-18, lines 7-10

- 1           ○ **Distribution Substation Emergency Equipment Replacement**  
2           (MWC 59)—the goal of the Distribution Substation Emergency  
3           Equipment Replacement Program is to safely and timely replace  
4           substation equipment that fails or is forced out of service.<sup>4</sup>
- 5           • **Electric Distribution-Safety, Maintenance and Compliance**—PG&E  
6           forecasts the largest increased levels of work in this area to address aging  
7           infrastructure and identified key public risk initiatives.<sup>5</sup>
- 8           ○ **Distribution Substation Safety** (MWC 58)—this Major Work Code is  
9           comprised of four subprograms (1) safety; (2) security; (3) fire  
10          protection; and (4) seismic activity. Capital expenditures include the  
11          replacement or upgrades of substation fences, security cameras and  
12          car readers, fire suppression systems, and seismic retrofits to control  
13          buildings.<sup>6</sup>
- 14          ○ **Install and Replace Overhead** (MWC 2A)—this program provides  
15          installs and replacements of critical overhead operating equipment.<sup>7</sup>
- 16          ○ **Install and Replace Underground** (MWC 2B)—this program provides  
17          installs and replacements of critical underground operating  
18          equipment.<sup>8</sup>
- 19          ○ **Install and Replace Network** (MWC 2C)—this program provides  
20          installs and replacements of critical network operating equipment.<sup>9</sup>
- 21          • **Electric Distribution-Operations, Automation and Support**—in this  
22          area capital costs are increasing for improved records management.<sup>10</sup>
- 23          ○ **Capital Tools and Equipment** (MWC 05)—includes the costs of  
24          miscellaneous tools and equipment to support distribution and

---

<sup>4</sup> Exh. PG&E-4, p. 13-17, lines 4-7

<sup>5</sup> Exh. PG&E-4, p. 1-21, lines 12-14

<sup>6</sup> Exh. PG&E-4, p. 13-16, lines 22-26

<sup>7</sup> Exh. PG&E-4, p. 5-34, lines 1-7

<sup>8</sup> Exh. PG&E-4, p. 5-34, lines 1-7

<sup>9</sup> Exh. PG&E-4, p. 5-34, lines 1-7

<sup>10</sup> Exh. PG&E-4, p. 1-22, lines 6-8

- 1 generation work,<sup>11</sup> operations maintenance and construction work,  
2 and overdrawn material.<sup>12</sup>
- 3 ○ **Distribution Automation and Protection** (MWC 09)—costs include  
4 (1) Emergency Equipment Replacement, (2) Substation Automation,  
5 and (3) Line Automation.<sup>13</sup>
- 6 ○ **Distribution Control Center** (MWC 63D)—construction of a new  
7 central facility and either purchasing, constructing, or leasing two  
8 satellite facilities.<sup>14</sup>
- 9 ○ **Manage Buildings** (MWC 78)—PG&E uses MWC 78 for costs related  
10 to managing building facilities.<sup>15</sup>
- 11 ○ **Build Information Technology Applications and Infrastructure**  
12 (MWC 2F)—PG&E created MWC 2F to improve central tracking of  
13 significant IT efforts. In prior years, IT spending was embedded in  
14 different shared MWCs and line of business MWCs.<sup>16</sup>
- 15 • **Electric Distribution-Work Efficiency**—electric operations plan to  
16 improve affordability through a variety of work efficiency initiatives.  
17 Through its process of continuous improvements, electric operations  
18 expect to find more efficient methods for doing work and thereby reduce  
19 capital costs for customers. The electric operations improvement plan  
20 demonstrates this commitment to improving affordability through its goal to  
21 absorb escalation for the years 2012 to 2015.<sup>17</sup>
- 22

---

<sup>11</sup> Exh. PG&E-4, p. 3-9. Lines 4-6

<sup>12</sup> Exh. PG&E-4, p. 20-5, lines 2-6

<sup>13</sup> Exh. PG&E-4, p. 17-8, lines 1-14

<sup>14</sup> Exh. PG&E-4, p. 11-12, lines 18-19

<sup>15</sup> Exh. PG&E-4, p. 20-6, lines 7-9

<sup>16</sup> Exh. PG&E-4, p. 2-8, lines 14-17

<sup>17</sup> Exh. PG&E-4, pp. 1-12 – 1-13, lines 31-3

1 **II. SUMMARY OF RECOMMENDATIONS**

2 The following summarizes DRA's recommendations for 2012-2014:

- 3 • The Commission should adopt PG&E's actual 2012 distribution  
4 capital expenditures that are discussed in this report.
- 5 • DRA generally used a three year average for calculating its  
6 recommended capital expenditures.
- 7 • Capital additions for major storms should be denied since these  
8 services will be provided in the consolidated distribution center.
- 9 • Capital addition projects for service centers should be postponed  
10 until after the consolidated distribution center is complete to  
11 determine if the extra space caused by moving personnel solves  
12 the issue.
- 13 • Capital addition projects for additional personnel or space  
14 requirements should be postponed until after the consolidated  
15 distribution center is complete to determine if the extra space  
16 caused by moving personnel solves the issue.
- 17 • The Commission should reject projects for additional funds that are  
18 already built into rates such as minor building upgrades, parking lot  
19 upgrades, or security upgrades.
- 20 • The Commission should reject Build IT projects that are not cost  
21 effective.
- 22 • Project costs determined using PG&E's concept estimator tool  
23 should be decreased by 14% as discussed in Exh. DRA-18 (Shared  
24 Services and Information Technology Costs).

25

1 Table 8-1 compares, in nominal dollars, DRA's and PG&E's 2012-2014  
 2 forecasts of Electric Distribution capital expenditures addressed in this exhibit:<sup>18</sup>

Table 8-1							
Pacific Gas & Electric 2014 GRC							
Comp of DRA Rec and PG&E Prop Electric Distribution							
Nominal \$000							
Description	MWC	DRA Recommended			PG&E Proposed		
		2012	2013	2014	2012	2013	2014
<b>Elect Dist-Emergency Response</b>							
Routine Emergencies	17	\$ 137,762.8	\$ 110,353.7	\$ 110,105.4	\$ 119,410.0	\$ 119,791.0	\$ 119,522.0
Major Emergencies	95	\$ 36,168.1	\$ 54,449.4	\$ 54,260.0	\$ 55,290.0	\$ 54,449.0	\$ 54,260.0
Distib Sub Emergency Equipment Replacement	59	\$ 50,205.6	\$ 29,392.0	\$ 29,290.1	\$ 27,342.0	\$ 41,153.0	\$ 41,011.0
<b>Elect Dist-Safety, Maintenance and Compliance</b>							
Distribution Substation Safety	58	\$ 142.9	\$ 852.3	\$ 849.1	\$ 875.0	\$ 3,138.3	\$ 3,126.4
Install and Replace Overhead	2A	\$ 91,661.0	\$ 75,657.1	\$ 58,377.2	\$ 93,448.2	\$ 108,678.5	\$ 127,086.3
Install and Replace Underground	2B	\$ 49,176.0	\$ 17,686.7	\$ 22,761.2	\$ 28,587.7	\$ 34,501.2	\$ 48,416.0
Install and Replace Network	2C	\$ 17,336.0	\$ 14,807.7	\$ 14,058.5	\$ 19,576.9	\$ 17,858.8	\$ 19,612.7
<b>Elect Dist-Operations, Automation and Support</b>							
Capital Tools and Equipment	5	\$ (2,377.7)	\$ (2,426.5)	\$ (2,417.4)	\$ (374.0)	\$ (2,335.8)	\$ (2,326.8)
Distribution Automation and Protection	9	\$ 37,518.0	\$ 38,215.9	\$ 63,396.3	\$ 37,185.0	\$ 47,272.3	\$ 73,453.7
Distribution Control Center	63	\$ 2,815.0	\$ 34,971.3	\$ 33,848.8	\$ 5,000.0	\$ 34,971.3	\$ 33,848.8
Manage Buildings	78	\$ 7,328.4	\$ 940.5	\$ 865.1	\$ 2,820.0	\$ 6,777.0	\$ 3,922.7
Build IT Applications and Infrastructure	2F	\$ 39,696.0	\$ 13,036.4	\$ 12,830.7	\$ 39,240.6	\$ 59,872.2	\$ 72,163.4
Total		\$ 467,432.2	\$ 387,936.6	\$ 398,225.0	\$ 428,401.4	\$ 526,126.7	\$ 594,096.2

3  
 4 DRA accepts PG&E's actual 2012 Distribution Business Unit capital  
 5 expenditures that are covered in this report.

6 **III. GENERAL OVERVIEW**

7 PG&E is seeking Distribution capital expenditures of \$580 million in 2014 in  
 8 this report, which is an increase of \$136 million over 2011 capital expenditures. This  
 9 results in an increase of capital expenditures of over 30% in a three-year period.

10 Table 8-2 shows PG&E's recorded historical Distribution Capital costs in  
 11 nominal dollars.<sup>19</sup>

<sup>18</sup> Summary numbers taken from Tables 8-4, 8-6, 8-8, 8-10, 8-12, 8-14, 8-16, 8-18, 8-20, 8-22, 8-24, and, 8-26

<sup>19</sup> Summary numbers taken from Tables 8-3, 8-5, 8-7, 8-9, 8-11, 8-13, 8-15, 8-17, 8-19, 8-21, 8-23, and 8-25

Table 8-2							
Pacific Gas & Electric 2014 GRC							
Historic Electric Distribution Capital Expenditures							
Nominal \$000							
Description	MWC	Recorded					
		2007	2008	2009	2010	2011	2012
<b>Elect Dist-Emergency Response</b>							
Routine Emergencies	17	\$ 80,700.0	\$ 97,711.0	\$ 110,961.0	\$ 111,601.0	\$ 115,645.0	\$ 137,762.8
Major Emergencies	95	\$ 26,186.0	\$ 46,158.0	\$ 41,272.0	\$ 64,085.0	\$ 86,912.0	\$ 36,168.1
Distib Sub Emergency Equipment Replacement	59	\$ 32,945.0	\$ 33,067.0	\$ 34,678.0	\$ 40,986.0	\$ 40,943.0	\$ 50,205.6
<b>Elect Dist-Safety, Maintenance and Compliance</b>							
Distribution Substation Safety	58	\$ 3,341.0	\$ 1,997.0	\$ 789.0	\$ 499.0	\$ 1,152.0	\$ 142.9
Install and Replace Overhead	2A	\$ 54,880.3	\$ 57,752.2	\$ 59,518.3	\$ 69,125.0	\$ 93,981.1	\$ 91,661.0
Install and Replace Underground	2B	\$ 17,259.6	\$ 15,807.0	\$ 17,840.9	\$ 17,189.7	\$ 31,439.8	\$ 49,176.0
Install and Replace Network	2C	\$ 657.6	\$ 4,477.1	\$ 4,128.2	\$ 8,036.9	\$ 18,459.7	\$ 17,336.0
<b>Elect Dist-Operations, Automation and Support</b>							
Capital Tools and Equipment	5	\$ (955.0)	\$ (2,584.0)	\$ (4,273.0)	\$ (2,558.0)	\$ (1,962.0)	\$ (2,377.7)
Distribution Automation and Protection	9	\$ 8,737.4	\$ 8,604.7	\$ 8,188.2	\$ 7,882.3	\$ 22,057.4	\$ 37,518.0
Distribution Control Center	63	\$ -	\$ -	\$ -	\$ 4,832.0	\$ 1,863.0	\$ 2,815.0
Manage Buildings	78	\$ 922.0	\$ 251.0	\$ 1,366.0	\$ 1,193.0	\$ 3,502.0	\$ 7,328.4
Build IT Applications and Infrastructure	2F	\$ -	\$ -	\$ 13,598.0	\$ 21,171.0	\$ 30,073.0	\$ 39,696.0
<b>Total</b>		<b>\$ 224,673.9</b>	<b>\$ 263,241.0</b>	<b>\$ 288,066.4</b>	<b>\$ 344,043.0</b>	<b>\$ 444,066.1</b>	<b>\$ 467,432.2</b>

1

2 PG&E Distribution capital expenditures have been growing at rates higher  
3 than inflation. PG&E's capital expenditures increased almost 98% in four years  
4 (2007-2011), which means that its capital expenditures have increased on average  
5 at about 18.6% a year. This level of growth doubles ratepayers' capital costs  
6 approximately every four years. The 2007 capital expenditures increased rates by  
7 \$33.6 million<sup>20</sup> which equates to approximately \$2 per customer.<sup>21</sup> The 2011 capital  
8 expenditures increased rates by \$66.6 million which equates to approximately \$4 per  
9 customer. Taking all of the capital expenditures from 2007-2011 together increased  
10 rates by \$234.6 million, which equates to an increase of approximately \$13.8 per  
11 customer just for a portion of electric distribution capital expenditures.

<sup>20</sup> 2007 Total Capital Expenditures \$224.7 million \* 15% = \$33.6 million

<sup>21</sup> \$33.6 million divided by 15 million customers = approximately \$2 per customer.

1 **IV. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION-**  
 2 **EMERGENCY RESPONSE**

3 This section discusses PG&E’s Electric Distribution-Emergency Response  
 4 capital expenditures for Routine Emergencies (MWC 17), Major Emergencies (MWC  
 5 95), and Distribution Substation Emergency Equipment Replacement (MWC 59).

6 Table 8-1 above summarizes PG&E’s request and DRA’s recommendation  
 7 for the MWCs within the section entitled Electric Distribution-Emergency Response.  
 8 PG&E’s test year request in this section totals approximately \$215 million while its  
 9 historic base year (2011) totals \$243.5 million. PG&E is requesting a decrease of  
 10 \$28.5 million in this area of distribution capital expenditures, excluding the  
 11 productivity decrease PG&E is requesting.

12 **A. ROUTINE EMERGENCIES (MWC 17)**

13 Table 8-3 shows PG&E’s historic Routine Emergencies capital expenditures  
 14 in thousands of nominal dollars<sup>22</sup> and Table 8-4 compares DRA Recommended and  
 15 PG&E Proposed Routine Emergencies capital expenditures in thousands of nominal  
 16 dollars.<sup>23</sup>

Table 8-3						
Pacific Gas & Electric 2014 GRC						
Historic Routine Emergencies Capital Expenditures--MWC 17						
Nominal \$000						
Description	Historic Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Routine Emergencies Capital Expenditures	\$ 80,700.0	\$ 97,711.0	\$ 110,961.0	\$ 111,601.0	\$ 115,645.0	\$ 137,762.8

<sup>22</sup> Exh. PG&E-4, p. WP 10-19, line 1, and PG&E’s response to data request DRA-PG&E-108-CKT, Q. 3, Exh 4, Chapter 10, MWC 17

<sup>23</sup> PG&E’s response to data request DRA-PG&E-108-CKT, Q. 3, Exh 4, Chapter 10, MWC 17, and Exh. PG&E-4, p. WP 10-19, lines 2-5

Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Routine Emergencies Capital Expenditures	\$ 137,762.8	\$ -	\$ -	\$ 119,410.0	\$ -	\$ -
Three year recorded average (2009-2011)	\$ -	\$ 103,584.6	\$ -	\$ -	\$ 112,762.0	\$ -
5% shift from Expenses to Capital of Recorded	\$ -	\$ 3,725.0	\$ -	\$ -	\$ 3,725.0	\$ -
Forecast Basis	\$ -	\$ 107,309.6	\$ 107,309.6	\$ -	\$ 116,486.0	\$ 116,486.0
Escalation	\$ -	\$ 3,044.1	\$ 2,795.8	\$ -	\$ 3,305.0	\$ 3,036.0
1 Routine Emergencies Capital Expenditures	\$ 137,762.8	\$ 110,353.7	\$ 110,105.4	\$ 119,410.0	\$ 119,791.0	\$ 119,522.0

2 Routine Emergencies are local emergencies involving a limited number of  
3 customers (up to 30,000) with an anticipated restoration response time within 24  
4 hours.<sup>24</sup> PG&E states that it used a 3-year average of recorded capital  
5 expenditures (2009-2011) to forecast capital expenditures associated with routine  
6 emergency work.<sup>25</sup> In addition, PG&E is forecasting a 5% shift of the three-year  
7 recorded capital expenditures associated with routine emergency work.<sup>26</sup> PG&E  
8 also adjusts its base capital expenditures by escalation to place prior year dollars  
9 into future nominal dollars.

10 PG&E requested a three-year total of \$352.382 million. DRA agrees with this  
11 three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded  
12 its forecasted 2012 expenditures, and because DRA accepts the 2012 actual  
13 expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total  
14 from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA  
15 recommends capital expenditures of \$137.8 million for 2012, \$110.4 million for 2013,  
16 and \$110.1 million for 2014.

<sup>24</sup> Exh. PG&E-4, p. 10-5, lines 14-16

<sup>25</sup> Exh. PG&E-4, p. WP 10-19, Footnote 2, line 13

<sup>26</sup> Exh. PG&E-4, p. WP 10-19, Footnote 3, line 14

**B. MAJOR EMERGENCIES (MWC 95)**

Table 8-5 shows PG&E’s historic Major Emergencies capital expenditures in thousands of nominal dollars,<sup>27</sup> and Table 8-6 compares DRA Recommended and PG&E Proposed Major Emergencies capital expenditures in thousands of nominal dollars.<sup>28</sup>

Table 8-5 Pacific Gas & Electric 2014 GRC Historic Major Emergencies Capital Expenditures--MWC 95 Nominal \$000						
Description	Historic Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Major Emergencies Capital Expenditures	\$ 26,186.0	\$ 46,158.0	\$ 41,272.0	\$ 64,085.0	\$ 86,912.0	\$ 36,168.1

Table 8-6 Pacific Gas & Electric 2014 GRC DRA Recommended and PG&E Proposed Major Emergencies --MWC 95 Nominal \$000						
Group	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Major Emergencies Capital Expenditures	\$ 36,168.1	\$ -	\$ -	\$ 55,290.0	\$ -	\$ -
Five year recorded average (2007-2011)	\$ -	\$ 52,923.0	\$ 52,923.0	\$ -	\$ 52,923.0	\$ 52,923.0
Escalation	\$ -	\$ 1,526.4	\$ 1,337.0	\$ -	\$ 1,526.0	\$ 1,337.0
Major Emergencies Capital Expenditures	\$ 36,168.1	\$ 54,449.4	\$ 54,260.0	\$ 55,290.0	\$ 54,449.0	\$ 54,260.0

Major Emergencies are area wide and multi area or companywide emergencies involving over 30,000 customers and/or an anticipated restoration response time over 24 hours.<sup>29</sup> PG&E states that it used a 5-year average of recorded capital expenditures (2007-2011) to forecast capital expenditures associated with routine emergency work.<sup>30</sup> PG&E also adjusts its base capital expenditures by escalation to place prior year dollars into future nominal dollars.

<sup>27</sup> Exh. PG&E-4, p. WP 10-20, line 1, and PG&E’s response to data request DRA-PG&E-108-CKT, Q. 3, Exh 4, Chapter 10, MWC 95

<sup>28</sup> PG&E’s response to data request DRA-PG&E-108-CKT, Q. 3, Exh 4, Chapter 10, MWC 95, and Exh. PG&E-4, WP 10-20, lines 2-5

<sup>29</sup> Exh. PG&E-4, p. 10-6, lines 1-17

<sup>30</sup> Exh. PG&E-4, p. WP 10-20, Footnote 2, line 13

1 Because PG&E's proposed 2013 and 2014 capital expenditures are  
 2 consistent with its historical Major Emergencies capital expenditures, DRA agrees to  
 3 PG&E's MWC 95, Major Emergencies capital expenditures for the years 2013 and  
 4 2014 at this time.

5 **C. DISTRIBUTION SUBSTATION EMERGENCY EQUIPMENT**  
 6 **REPLACEMENT (MWC 59)**

7 Table 8-7 shows PG&E's historic Distribution Substation Emergency  
 8 Equipment Replacement capital expenditures in thousands of nominal dollars<sup>31</sup> and  
 9 Table 8-8 compares DRA Recommended and PG&E Proposed Distribution  
 10 Substation Emergency Equipment Replacement capital expenditures in thousands  
 11 of nominal dollars.<sup>32</sup>

12

Table 8-7 Pacific Gas & Electric 2014 GRC Historic Distribution Substation Emergency Equipment Replacement Capital Expenditures--MWC 59 Nominal \$000						
Description	Recorded Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Distribution Substation Emergency Equipment Replacement	\$ 32,945.0	\$ 33,140.0	\$ 34,853.0	\$ 41,218.0	\$ 40,795.0	\$ 50,205.6
Standard Cost Variance	\$ -	\$ (73.0)	\$ (175.0)	\$ (232.0)	\$ 148.0	\$ -
Distribution Substation Emergency Equipment Replacement	\$ 32,945.0	\$ 33,067.0	\$ 34,678.0	\$ 40,986.0	\$ 40,943.0	\$ 50,205.6

13

Table 8-8 Pacific Gas & Electric 2014 GRC Comparison of DRA Recommended and PG&E Proposed Distribution Substation Emergency Equipment Replacement --MWC 59 Nominal \$000						
Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Distribution Substation Emergency Equipment Replacement	\$ 50,205.6	\$ 28,568.2	\$ 28,568.2	\$ 27,342.0	\$ 40,000.0	\$ 40,000.0
Standard Cost Variance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Escalation	\$ -	\$ 823.8	\$ 722.0	\$ -	\$ 1,153.0	\$ 1,011.0
Distribution Substation Emergency Equipment Replacement	\$ 50,205.6	\$ 29,392.0	\$ 29,290.1	\$ 27,342.0	\$ 41,153.0	\$ 41,011.0

14 The goal of Distribution Substation Emergency Equipment Replacement  
 15 Program is to safely and timely replace substation equipment that fails or is forced

<sup>31</sup> Exh. PG&E-4, p. WP 13-14, lines 37-39, and PG&E's response to data request DRA-PG&E-108-CKT, Q. 3, Exh 4, Chapter 13, MWC 59

<sup>32</sup> PG&E's response to data request DRA-PG&E-108-CKT, Q. 3, Exh 4, Chapter 13, MWC 59, and Exh. PG&E-4, p. WP 13-14, line 37-41

1 out of service.<sup>33</sup> PG&E states that its forecast for 2013 and 2014 is \$40 million per  
2 year. PG&E derived its forecast by taking the 3-year average of historical  
3 expenditures (2009-2011) and rounding up.<sup>34</sup> PG&E also adjusts its base capital  
4 expenditures by escalation to place prior year dollars into future nominal dollars.

5 PG&E requested a three-year total of \$107.342 million. DRA agrees with this  
6 three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded  
7 its forecasted 2012 expenditures, and because DRA accepts the 2012 actual  
8 expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total  
9 from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA  
10 recommends capital expenditures of \$50.2 million for 2012, \$29.4 million for 2013,  
11 and \$29.3 million for 2014.

## 12 **V. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION-** 13 **SAFETY, MAINTENANCE AND COMPLIANCE**

14 This section discusses PG&E's Electric Distribution-Safety, Maintenance and  
15 Compliance capital expenditures for Distribution Substation Safety (MWC 58), Install  
16 and Replace Overhead (MWC 2A), Install and Replace Underground (MWC 2B),  
17 and Install and Replace Network (MWC 2C).

18 Table 8-1 summarizes PG&E's request and DRA's recommendation for the  
19 MWCs within the section entitled Electric Distribution-Safety, Maintenance and  
20 Compliance. PG&E's test year request in this section totals approximately \$198  
21 million while its historic base year (2011) totals \$145 million. PG&E is requesting an  
22 increase of \$53 million in this area of distribution capital expenditures, excluding the  
23 productivity decrease PG&E is requesting.

---

<sup>33</sup> Exh. PG&E-4, p. 13-17, lines 5-7

<sup>34</sup> Exh. PG&E-4, p. WP 13-127, section entitled Cost Assumptions

1 **A. DISTRIBUTION SUBSTATION SAFETY (MWC 58)**

2 Table 8-9 shows PG&E’s historic Distribution Substation Safety capital  
 3 expenditures in thousands of nominal dollars<sup>35</sup> and Table 8-10 compares DRA  
 4 Recommended and PG&E Proposed Distribution Substation Safety capital  
 5 expenditures in thousands of nominal dollars.<sup>36</sup>

6

Table 8-9						
Pacific Gas & Electric 2014 GRC						
Historic Distribution Substation Safety Capital Expenditures--MWC 58						
Nominal \$000						
Description	Recorded Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Seismic	\$ 2,526.0	\$ 90.0	\$ 61.0	\$ 185.0	\$ 1,129.0	\$ 109.5
Fire Protection Suppression	\$ 781.0	\$ 1,827.0	\$ 407.0	\$ 244.0	\$ 18.0	\$ 14.3
Security	\$ 18.0	\$ 78.0	\$ 263.0	\$ 23.0	\$ 5.0	\$ 16.5
Safety	\$ 16.0	\$ 2.0	\$ 58.0	\$ 47.0	\$ -	\$ 2.5
Escalation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 0.1
Distribution Substation Safety	\$ 3,341.0	\$ 1,997.0	\$ 789.0	\$ 499.0	\$ 1,152.0	\$ 142.9

7

Table 8-10						
Pacific Gas & Electric 2014 GRC						
Comp of DRA Rec and PG&E Prop Distribution Substation Safety --MWC 58						
Nominal \$000						
Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Seismic	\$ 109.5	\$ 458.3	\$ 458.3	\$ -	\$ 1,300.0	\$ 1,300.0
Fire Protection Suppression	\$ 14.3	\$ 223.0	\$ 223.0	\$ -	\$ 1,300.0	\$ 1,300.0
Security	\$ 16.5	\$ 97.0	\$ 97.0	\$ 25.0	\$ 400.0	\$ 400.0
Safety	\$ 2.5	\$ 50.0	\$ 50.0	\$ 150.0	\$ 50.0	\$ 50.0
MWC 58 Subst Equip Funding	\$ -	\$ -	\$ -	\$ 700.0	\$ -	\$ -
Escalation	\$ 0.1	\$ 24.0	\$ 20.8	\$ -	\$ 88.3	\$ 76.4
Distribution Substation Safety	\$ 142.9	\$ 852.3	\$ 849.1	\$ 875.0	\$ 3,138.3	\$ 3,126.4

<sup>35</sup> Exh. PG&E-4, p. WP 13-14, lines 28-34, and Data Response to DRA-PG&E-212-MKB, Q. 1

<sup>36</sup> PG&E’s response to data request DRA-PG&E-212-MKB, Q. 1, and Exh. PG&E-4, WP 13-14, lines 28-34

1 MWC 58 is comprised of four subprograms: (1) Seismic; (2) Fire Protection  
2 Suppression; (3) Security; and, (4) Safety.<sup>37</sup>

3 In PG&E's last general rate case, the imputed regulatory value (authorized  
4 capital expenditures) for MWC 58 from the 2011 GRC was \$5.673 million<sup>38</sup>, while  
5 PG&E had actual 2011 capital expenditures for MWC of \$1.152 million. PG&E  
6 received a return on almost five times its actual investment. DRA will discuss each  
7 cost element of MWC 58 in the following sections.

### 8 1. Seismic

9 According to PG&E, the unit cost forecast 2014 through 2016 is \$1.3 million,  
10 which will allow PG&E to complete seismic work on one selected distribution  
11 substation per year.<sup>39</sup> PG&E estimated the same seismic capital expenditures for  
12 2013 as well.

13 Historically, PG&E has not been completing seismic work on one selected  
14 distribution substation facility per year. Between 2008 and 2012, PG&E has only  
15 completed distribution substation seismic work on one distribution substation  
16 (Berkeley F).<sup>40</sup> In 1996, ALX Engineering completed a "Technical Survey of  
17 Unreinforced Masonry Substation Buildings" (Seismic Technical Survey) for PG&E  
18 that evaluated PG&E distribution substation seismic condition. The majority of  
19 projects remedied prior to 2007 were assessed to be in either poor or very poor  
20 condition. PG&E desires to remedy distribution substation facilities that were  
21 assessed to be in good and fair condition in years 2014-2016.<sup>41</sup>

---

<sup>37</sup> Exh. PG&E-4, p. 13-16, lines 23-24

<sup>38</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 3

<sup>39</sup> Exh. PG&E-4, p. WP 13-37, Cost Assumption section

<sup>40</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 8.a.

<sup>41</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 8.c.

1 The Seismic Technical Survey that PG&E is relying on is 16 years old, PG&E  
2 has already remedied all of the very poor and poor condition facilities, and PG&E  
3 has not demonstrated a consistent history of remedying distribution substation  
4 facilities during the last five years (2008-2012).

5 Prior to PG&E's authorization for additional funds to remedy distribution  
6 substation seismic condition, PG&E needs to perform a new Seismic Technical  
7 Analysis and demonstrate the need for seismic retrofits of its Distribution  
8 Substations. DRA recommends the use of a three-year average (2009-2011) for  
9 PG&E's Distribution Substation Seismic capital expenditures. Therefore, DRA  
10 recommends capital expenditures of \$109,500 for 2012, \$458,300 for 2013, and  
11 \$458,300 for 2014.

## 12 **2. Fire Protection Suppression**

13 PG&E estimated 2013-2016 based upon the historic (2007 and 2008)  
14 average for fire suppression. Its forecast is based on the 2007 and 2008 totals when  
15 the program was fully funded to support the successful implementation of fire  
16 suppression projects.<sup>42</sup> PG&E intends to complete three to four fire protection  
17 suppression projects per year during future years.<sup>43</sup>

18 During 2009-2012, MWC 58 fire protection suppression projects were limited  
19 to a few substations and are mainly carryover projects to complete work that began  
20 in prior years. During these years, fire protection and suppression work was  
21 incorporated in other MWCs, such as the Oakland X Bank 4 bank replacement  
22 under MWC 54, which included an upgrade to the fire suppression system to  
23 accommodate the increase in transformer size and gallons of oil.<sup>44</sup> PG&E has  
24 identified two potential fire protection suppression projects for 2013 (Larkin and

---

<sup>42</sup> Exh. PG&E-4, p. WP 13-36, Cost Assumption section

<sup>43</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.h.

<sup>44</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.b.

1 Embarcadero substations) but has not identified any 2014-2016 fire protection  
2 suppression projects.<sup>45</sup>

3 PG&E has included its fire protection and suppression work in other MWCs  
4 during the last four years and is now requesting additional funding in MWC 58. In  
5 addition, PG&E could not identify specific substation fire protection suppression  
6 projects planned during the 2014-2016 timeframe.<sup>46</sup> Without specific plans, PG&E  
7 is unprepared in this rate case to support its request, and has no supportable  
8 documents to evaluate. It is PG&E's obligation to present its need to the  
9 Commission

10 During the last four years (2008-2011) PG&E's fire protection and  
11 suppression work recorded in MWC 58 has decreased every year. Consistent with  
12 PG&E current booking practices, DRA recommends the use of a three-year average  
13 (2009-2011) for PG&E's Distribution Substation Fire Protection Suppression capital  
14 expenditures in 2013 and 2014. Therefore, DRA recommends capital expenditures  
15 of \$14,300 for 2012, \$223,000 for 2013, and \$223,000 for 2014.

### 16 **3. Security**

17 The security forecast requested in MWC 58 for 2014 through 2016 of  
18 \$400,000 is based on one completed project totaling \$360,000 to install security  
19 card systems at San Francisco substations J, K, and Y. This amount was rounded  
20 to \$400,000.<sup>47</sup> Substation security plans for 2012-2016 may include, but are not  
21 limited to: fences and gates, locks, EACs, intrusion alarms, security guards and  
22 camera. The detailed scope of work at any identified substation is determined at the  
23 time of review.<sup>48</sup>

---

<sup>45</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.h.

<sup>46</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.h.

<sup>47</sup> Exh. PG&E-4, p. WP 13-39, Cost Assumptions section

<sup>48</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 9.h.

1 PG&E could not identify any specific substation security projects planned  
2 during the 2012-2016 timeframe.<sup>49</sup> Without specific plans, PG&E has not supported  
3 its request, and has no supportable documents to evaluate. During the last three-  
4 years (2009-2011) PG&E's fire protection and suppression work recorded in MWC  
5 58 has decreased every year. Therefore, DRA recommends the use of a three-year  
6 average (2009-2011) for PG&E's Distribution Substation Security capital  
7 expenditures in 2013 and 2014. Therefore, DRA recommends capital expenditures  
8 of \$16,500 for 2012, \$97,000 for 2013, and \$97,000 for 2014.

#### 9 **4. Safety**

10 PG&E's Distribution Substation safety capital expenditure forecast for 2014-  
11 2016 is based on the 2009 and 2010 two year historical average in this  
12 subprogram.<sup>50</sup> The 2009 and 2010 recorded costs reflect the most recent annual  
13 expenditures pertaining to one completed project, installing a storm drain in SF  
14 Station 1.<sup>51</sup>

15 DRA accepts PG&E's safety's projections in 2013 and 2014. Therefore, DRA  
16 recommends capital expenditures for safety of \$2,500 in 2012, \$50,000 in 2013, and  
17 \$50,000 in 2014.

#### 18 **5. Escalation**

19 DRA modified PG&E's escalation workpapers by replacing PG&E's proposed  
20 Distribution Substation 2013 and 2014 capital expenditures with DRA's  
21 recommended 2013 and 2014 distribution substation capital expenditures for MWC  
22 58.

---

<sup>49</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 9.h.

<sup>50</sup> Exh. PG&E-4, p. WP 13-41, Cost Assumptions section

<sup>51</sup> PG&E's response to data request DRA-PG&E-038-MKB, Q. 10.a.

1 **B. INSTALL AND REPLACE OVERHEAD (MWC 2A)**

2 Table 8-11 shows PG&E's historic Install and Replace Overhead capital  
 3 expenditures in thousands of nominal dollars<sup>52</sup> and Table 8-12 compares DRA  
 4 Recommended and PG&E Proposed Install and Replace Overhead capital  
 5 expenditures in thousands of nominal dollars.<sup>53</sup>

6

Table 8-11						
Pacific Gas & Electric 2014 GRC						
Historic Install and Replace Overhead Capital Expenditures--MWC 2A						
Nominal \$000						
Description	Recorded Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Total Cost of Overhead Notifications	\$ 42,815.5	\$ 37,941.3	\$ 31,512.0	\$ 37,937.0	\$ 57,430.4	\$ 54,419.0
Total Cost of Overhead COE Notifications	\$ 5,264.3	\$ 9,780.0	\$ 12,886.1	\$ 10,770.6	\$ 17,225.6	\$ 22,406.0
Total Cost of Bird Safe Notifications	\$ 1,496.5	\$ 2,592.3	\$ 4,541.4	\$ 6,195.6	\$ 7,737.6	\$ 5,327.0
Total Cost of Bird Retrofits Notifications	\$ 1,969.2	\$ 2,056.3	\$ 2,419.8	\$ 3,578.8	\$ 3,192.8	\$ 3,082.0
Sub-total	\$ 51,545.5	\$ 52,369.8	\$ 51,359.3	\$ 58,481.9	\$ 85,586.3	\$ 85,234.0
Idle Facilities Removal	\$ 1.2	\$ 467.0	\$ (7.8)	\$ 9.2	\$ 36.4	\$ 3.0
Major Notifications	\$ 2,770.1	\$ 4,456.1	\$ 7,912.6	\$ 10,279.1	\$ 8,358.4	\$ 1,027.0
Non Exempt Equipment Replace in UWF-Cap	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SF Incandescent Streetlights	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,871.0
Permit Updates	\$ 563.6	\$ 459.3	\$ 254.3	\$ 354.8	\$ -	\$ 565.0
Infrared \Switch Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Infrared Reconductor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
No Material	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,961.0
Sub-total	\$ 3,334.8	\$ 5,382.4	\$ 8,159.0	\$ 10,643.1	\$ 8,394.9	\$ 6,427.0
Install and Replace Overhead	\$ 54,880.3	\$ 57,752.2	\$ 59,518.3	\$ 69,125.0	\$ 93,981.1	\$ 91,661.0

<sup>52</sup> Exh. PG&E-4, p. WP 5-25, lines 13-32, Data Response to DRA-PG&E-213-MKB, Q. 1

<sup>53</sup> PG&E's response to data request DRA-PG&E-213-MKB, Q. 1, Exh. PG&E-4, p. WP 5-25, lines 13-32, and Exh. PG&E-4, p. WP 19-1

Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Total Cost of Overhead Notifications	\$ 54,419.0	\$ 47,721.4	\$ 26,178.8	\$ 53,447.8	\$ 48,207.0	\$ 26,664.5
Total Cost of Overhead COE Notifications	\$ 22,406.0	\$ 14,817.8	\$ 14,817.8	\$ 17,347.2	\$ 17,347.2	\$ 17,347.2
Total Cost of Bird Safe Notifications	\$ 5,327.0	\$ 2,198.6	\$ 2,198.6	\$ 3,241.4	\$ 3,241.4	\$ 3,241.4
Total Cost of Bird Retrofits Notifications	\$ 3,082.0	\$ 3,411.8	\$ 3,411.8	\$ 3,411.8	\$ 3,411.8	\$ 3,411.8
Sub-total	\$ 85,234.0	\$ 68,149.6	\$ 46,607.0	\$ 77,448.1	\$ 72,207.4	\$ 50,664.8
Idle Facilities Removal	\$ 3.0	\$ 101.2	\$ 101.2	\$ 6,450.0	\$ 22,864.0	\$ 26,566.9
Major Notifications	\$ 1,027.0	\$ 2,385.0	\$ 4,885.0	\$ 1,915.0	\$ 2,385.0	\$ 4,885.0
Non Exempt Equipment Replace in UWF-Cap	\$ -	\$ -	\$ -	\$ 85.0	\$ -	\$ -
SF Incandescent Streetlights	\$ 2,871.0	\$ 2,850.0	\$ 2,850.0	\$ 7,250.0	\$ 7,250.0	\$ 7,240.0
Permit Updates	\$ 565.0	\$ 67.5	\$ 67.5	\$ 300.0	\$ 200.0	\$ 200.0
Infrared \Switch Replacements	\$ -	\$ -	\$ -	\$ -	\$ 750.0	\$ 750.0
Infrared Reconductor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,000.0
No Material Cod	\$ 1,961.0	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-total	\$ 6,427.0	\$ 5,403.7	\$ 7,903.7	\$ 16,000.0	\$ 33,449.0	\$ 54,641.9
Escalation	\$ -	\$ 2,103.9	\$ 1,398.8	\$ -	\$ 3,022.1	\$ 3,179.6
Total	\$ 91,661.0	\$ 75,657.1	\$ 55,909.5	\$ 93,448.2	\$ 108,678.5	\$ 108,486.3
LED streetlight replacement	\$ -	\$ -	\$ 2,467.7	\$ -	\$ -	\$ 18,600.0
1 Install and Replace Overhead	\$ 91,661.0	\$ 75,657.1	\$ 58,377.2	\$ 93,448.2	\$ 108,678.5	\$ 127,086.3

2 MWC 2A is comprised of twelve subprograms: (1) Total Cost of Overhead  
3 Notifications; (2) Total Costs of Overhead Critical Operating Equipment (COE)  
4 Notifications; (3) Total Cost of Bird Sale and Bird Retrofits Notifications; (4) Idle  
5 Facilities Removal; (5) Major Notifications; (6) Non Exempt Equipment Replaced in  
6 UWF-Cap; (7) SF Incandescent Streetlights; (8) Permit Updates; (9) Infrared Switch  
7 Replacement; (10) Infrared Reconductor; (11) Escalation; and, (12) LED Streetlight  
8 Replacement.<sup>54</sup> DRA will discuss the remaining cost element of MWC 2A in the  
9 following sections.

### 10 1. Total Cost of Overhead Notifications

11 PG&E schedules and executes maintenance notifications based on regulatory  
12 requirements, equipment condition, climate condition, equipment design, and third  
13 party actions.<sup>55</sup> In 2010, PG&E began implementing a new system for prioritizing  
14 notifications and a plan to eliminate the backlog by the end of 2013. PG&E's

<sup>54</sup> Exh. PG&E-4, p. WP 5-25. Lines 13-30, and Exh. PG&E-4, p. 19-1

<sup>55</sup> Exh. PG&E-4, p. 5-3 through 5-5, lines 27-13

1 objective was to complete newly identified notifications for abnormal conditions  
2 within 12 month. Thereafter, PG&E's forecast for 2014 and beyond would be for  
3 newly identified work to preserve a steady flow.<sup>56</sup>

4 PG&E requested a three-year total of \$128.3 million. DRA agrees with this  
5 three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded  
6 its forecasted 2012 expenditures, and because DRA accepts the 2012 actual  
7 expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total  
8 from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA  
9 recommends capital expenditures of \$54.4 million for 2012, \$37.9 million for 2013,  
10 and \$31.5 million for 2014.

## 11 **2. Total Cost of Overhead Critical Operating** 12 **Equipment (COE) Notifications**

13 These costs address inoperative equipment that is very important to the  
14 operation and functionality of the electric distribution system. This equipment,  
15 includes fuses, interrupters, reclosers, sectionalizers, switches, and disconnects,  
16 plays a major role in preventing customer interruptions and is critical for restoring  
17 power after an outage. PG&E forecasts the unit costs and number of units for 2014  
18 to be higher than 2011 due to changes in the COE process to include additional  
19 assets, improve time for repair and decrease equipment downtime.<sup>57</sup>

20 In 2010, PG&E began implementing a new system for prioritizing notifications.  
21 Under the new prioritization system, PG&E's objective is to complete newly identified  
22 notifications for abnormal conditions within 12 months and to eliminate existing  
23 backlog by the end of 2013. The increase in 2011 notifications completed relative to  
24 2010 reflects a full year of completing backlog notifications and steady state  
25 notifications.<sup>58</sup>

---

<sup>56</sup> Exh. PG&E-4, p. 5-18, lines 4-10

<sup>57</sup> Exh. PG&E-4, pp. 5-18 & 5-19, lines 20-2

<sup>58</sup> PG&E's response to data request DRA-PG&E-040-MKB, Q. 6.a.

1 PG&E requested a three-year total of \$52.0 million. DRA agrees with this  
2 three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded  
3 its forecasted 2012 expenditures, and because DRA accepts the 2012 actual  
4 expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total  
5 from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA  
6 recommends capital expenditures of \$22.4 million for 2012, \$14.8 million for 2013,  
7 and \$14.8 million for 2014.

### 8 **3. Total Cost of Bird Safe and Bird Retrofit** 9 **Notifications**

10 Nearly all birds are protected by various state and federal laws including the  
11 migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Endangered  
12 Species Act, and state game codes. In order to comply with these laws, PG&E, in  
13 conjunction with USFWS, has developed the Avian Protection Plan (APP). The APP  
14 requires PG&E to take corrective action if a migratory bird is electrocuted as a result  
15 of PG&E's facilities (reactive based work). From a proactive perspective, the APP  
16 also requires retrofits for a minimum of 2,000 poles annually.<sup>59</sup>

17 PG&E's plan to retrofit 2,000 poles can be either expensed or capitalized. In  
18 2010, PG&E capitalized 886, and in 2011, PG&E capitalized 897 poles. PG&E  
19 plans to capitalize 1,025 poles a year in 2012-2014.<sup>60</sup>

20 PG&E requested a three-year total of \$9.7 million. DRA agrees with this  
21 three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded  
22 its forecasted 2012 expenditures, and because DRA accepts the 2012 actual  
23 expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total  
24 from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA  
25 recommends capital expenditures of \$5.3 million for 2012, \$2.2 million for 2013, and  
26 \$2.2 million for 2014.

---

<sup>59</sup> Exh. PG&E-4, p. 5-20, lines 3-14

<sup>60</sup> Exh. PG&E-4, p. WP 5-10, line 4

1 **4. Idle Facilities Removal**

2 PG&E has a database that contains approximately 22,000 idle facilities  
3 locations for review. PG&E began a review of the idle facilities in 2011. After a field  
4 review is completed and the applicable units for removal have been determined, the  
5 removal process will begin. Units are forecasted based on a projection of  
6 addressing and completing the work by 2015.<sup>61</sup>

7 In relationship to other maintenance work for safety and reliability, the review  
8 and potential removal [of idle facilities] was deemed relatively low priority work by  
9 PG&E.<sup>62</sup> PG&E has not performed a cost benefit study or engineering study of  
10 removing idle facilities.<sup>63</sup> PG&E has also not been able to identify any idle facilities  
11 that it plans to remove during the period 2012-2016.<sup>64</sup> Without any documented  
12 support PG&E requests to increase its 2011 idle facility capital expenditures by  
13 72,800 percent in 2014.

14 Removing idle facilities is low priority work for PG&E. They have performed  
15 no cost benefit study or engineering study on removing idle facilities, and were  
16 unable to identify any idle facilities it plans on removing in 2012-2016. Without  
17 specific plans, PG&E failed in this rate case to adequately support its request.  
18 PG&E provided no supportable documents to evaluate. During the last five years  
19 (2007-2011) PG&E's idle facility removal capital expenditures recorded in MWC 2A  
20 has had wide fluctuations from (\$7,800) in 2009 to \$467,000 in 2008 and have been  
21 much lower than PG&E's request in 2013 and 2014. Historically, idle facilities are  
22 removed when they present a danger to others (e.g. they become loose and present  
23 a falling danger); else they are left on the poles because their removal creates a  
24 greater menace to the linemen than their being left in place. PG&E presents

---

<sup>61</sup> Exh. PG&E-4, p. 5-36, lines 12-19

<sup>62</sup> Exh. PG&E-4, p. 5-21, lines 9-12

<sup>63</sup> PG&E's response to data request DRA-PG&E-040-MKB, Qs 12.c. & 12.d.

<sup>64</sup> PG&E's response to data request DRA-PG&E-040-MKB, Q. 12.g.

1 inadequate factual evidence to support the significant increase that it requests in  
2 2013 and 2014. Therefore, DRA recommends the use of a five-year average (2007-  
3 2011) for PG&E's Idle Facility Removal capital expenditures in 2013 and 2014. DRA  
4 recommends capital expenditures of \$3,000 for 2012, \$102,200 for 2013, and  
5 \$101,200 for 2014.

6 **5. Major Notifications**

7 Major Notifications are unit based work that is more complex and costly in  
8 nature and is therefore transferred from unit tracked work to Major notifications.  
9 While PG&E makes every effort to identify these notifications prior to allocation, the  
10 scope and breadth of some notifications changes due to conditions in the field, cost  
11 of equipment, and circumstances discovered after initial assessment. Forecasted  
12 costs are based on historical movement of unit based work adjusted for 2011 which  
13 reflects a considerably higher volume of transfers to major notifications.<sup>65</sup>

14 Because PG&E's Proposed 2013 and 2014 capital expenditures are lower  
15 than historical Major Notification capital expenditures, DRA agrees to PG&E's  
16 forecasts for MWC 2A, Major Notifications capital expenditures for the years 2013  
17 and 2014 at this time.

18 **6. SF Incandescent Streetlights**

19 PG&E owns approximately 1,180 incandescent streetlights in San Francisco.  
20 These incandescent lights date back prior to 1957 and replacement parts are not  
21 being manufactured, which makes it difficult to keep these lights operating. PG&E  
22 has purported a commitment to the City and County of San Francisco that it will  
23 replace these facilities. PG&E is replacing the existing lights with more conventional  
24 means of lighting such as high pressure sodium 120 volt lighting. It will be  
25 necessary to replace associated transformers and cables. The three-year plan for  
26 incandescent streetlights would replace obsolete equipment such as fixtures,

---

<sup>65</sup> Exh. PG&E-4, p. WP 5-25, footnote 6

1 transformers and cable for streetlight facilities primarily located in San Francisco.  
2 PG&E claims that the replacement work will begin in 2012 and will end in 2014.<sup>66</sup>

3 PG&E based its estimate of \$18,421 per light replaced, on a 2009 project  
4 where PG&E replace 19 lights. PG&E also expects to change over almost 400 lights  
5 per year.<sup>67</sup> In 2012, PG&E only changed 22 lights.<sup>68</sup>

6 When PG&E does begin this project in earnest, its costs should drop  
7 drastically. At this time, PG&E has not been able to support its outdated 2009 cost,  
8 or its forecast costs. PG&E has not actually committed to replace almost 400  
9 incandescent lights a year as exemplified by the 2012 data. DRA recommends the  
10 Commission adopt \$2.85 million a year for 2013 and 2014, an amount equal to  
11 PG&E's 2012 SF incandescent light replacement capital expenditure. DRA's  
12 forecast reflects PG&E's most recent capital investment while providing funding for  
13 the project over a more reasonable and realistic time horizon.

#### 14 **7. Permit Updates**

15 PG&E forecast permit updates to maintain its right of ways for easements in  
16 the United States Forest Service lands. Its forecast represent its' electric  
17 department's portion of the cost to maintain right of way and is based on historical  
18 spending for permit and PG&E's professional judgment about the mix of work in  
19 future years that will require permits.<sup>69</sup>

20 PG&E requested a three-year total of \$700,000. DRA agrees with this three-  
21 year total amount. PG&E's actual 2012 capital expenditures exceeded its  
22 forecasted 2012 expenditures, and DRA accepts the 2012 actual expenditures.  
23 DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total from 2012-2014

---

<sup>66</sup> Exh. PG&E-4, p. 5-37, lines 3-15

<sup>67</sup> Exh. PG&E-4, p WP 5-30, Cost Assumption section

<sup>68</sup> PG&E's response to data request DRA-PG&E-213-MKB, Q. 2.d.

<sup>69</sup> PG&E's response to data request DRA-PG&E-040-MKB, Q. 11.a.

1 equals PG&E's forecasted 3-year total. Therefore, DRA recommends capital  
2 expenditures of \$565,000 for 2012, \$67,500 for 2013, and \$67,500 for 2014.

### 3 **8. Infrared Reconductor and Infrared Switch** 4 **Replacement**

5 The purpose of PG&E's comprehensive infrared and splice inventory program  
6 is to identify connectors, splices and switches that require replacement or repair.  
7 The capital component of the program involves addressing overhead spans that  
8 contain more than two in-line splices and switches that have been identified for  
9 replacement.<sup>70</sup>

10 There are no government requirements that PG&E perform infrared  
11 inspections over any cycle.<sup>71</sup> PG&E has not conducted an infrared inspection of its  
12 entire system in the past 20 years.<sup>72</sup> PG&E does not maintain separate data for  
13 overhead switch replacements, nor does it keep records of the number of splices it  
14 replaced on a year by year basis.<sup>73</sup> PG&E also could not identify any cost benefit  
15 studies or engineering studies that supported its program request.<sup>74</sup>

16 PG&E has not adequately supported its request in this general rate case.  
17 PG&E has not shown that the infrared conductor and infrared switch replacement  
18 program requested is cost effective, could not identify conductors or switches failing,  
19 and has not shown that this program is in ratepayers' best interest. Therefore, DRA  
20 recommends against PG&E receiving any funding for its infrared conductor and  
21 infrared switch replacement program.

---

<sup>70</sup> Exh. PG&E-4, p 5-36, lines 21-29C

<sup>71</sup> PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.a.i.

<sup>72</sup> PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.a.iii.

<sup>73</sup> PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.b.i.

<sup>74</sup> PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.e & f

1                   **9. Escalation**

2                   DRA modified PG&E’s escalation workpapers by replacing PG&E’s proposed  
3 overhead 2013 and 2014 capital expenditures with DRA’s recommended 2013 and  
4 2014 recommended overhead capital expenditures for MWC 2A.

5                   **10. LED Streetlight Replacement**

6                   PG&E owns, operates and maintains approximately 160,000 non-decorative  
7 High Pressure Sodium Vapor streetlights under Electric Rate Schedule LS-1.<sup>75</sup>

8                   During PG&E’s last general rate case, DRA recommended that PG&E receive  
9 its funding request over a ten-year period. PG&E did not replace any of its  
10 streetlights and deferred this project to this general rate case. Because of PG&E’s  
11 reluctance to replace its streetlights, DRA is amortizing PG&E’s request over a 24  
12 year period, which is the life of the new streetlights. This will allow for the roll-out of  
13 the project over a reasonable number of years while providing for coordination with  
14 local communities. DRA’s estimate will provide funding for the replacement of  
15 almost 7,000 streetlights per year over the GRC cycle. PG&E can request  
16 modification to the program in its next GRC, if needed.

17                   **C. INSTALL AND REPLACE UNDERGROUND (MWC 2B)**

18                   Table 8-13 shows PG&E’s historic Install and Replace Underground capital  
19 expenditures in thousands of nominal dollars<sup>76</sup> and Table 8-14 compares DRA  
20 Recommended and PG&E Proposed Install and Replace Underground capital  
21 expenditures in thousands of nominal dollars.<sup>77</sup>

---

<sup>75</sup> Exh. PG&E-4, p. 19-1, lines 11-13

<sup>76</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32

<sup>77</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32, and Exh. PG&E-4, p. WP 19-3, line 1

Table 8-13						
Pacific Gas & Electric 2014 GRC						
Historical Install and Replace Underground Capital Expenditures--MWC 2B						
Nominal \$000						
Description	Historic Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Total Cost of Underground Notifications	\$ 12,405.7	\$ 12,831.5	\$ 11,063.8	\$ 12,123.9	\$ 21,809.2	\$ 37,844.0
Total Cost of Underground COE Notifications	\$ 1,854.2	\$ 2,238.6	\$ 2,202.7	\$ 2,115.5	\$ 3,698.8	\$ 5,914.0
Sub-total	\$ 14,259.9	\$ 15,070.1	\$ 13,266.4	\$ 14,239.3	\$ 25,508.1	\$ 43,758.0
Major Notifications	\$ 2,999.7	\$ 736.9	\$ 4,574.5	\$ 2,950.4	\$ 6,113.2	\$ 5,191.0
Underground Oil Switch Replacements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
No Material Code	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 227.0
Sub-total	\$ 2,999.7	\$ 736.9	\$ 4,574.5	\$ 2,950.4	\$ 6,113.2	\$ 5,418.0
Standard Variance	\$ -	\$ -	\$ -	\$ -	\$ (181.5)	\$ -
1 Install and Replace Underground	\$ 17,259.6	\$ 15,807.0	\$ 17,840.9	\$ 17,189.7	\$ 31,439.8	\$ 49,176.0

Table 8-14						
Pacific Gas & Electric 2014 GRC						
Comp of DRA Rec and PG&E Prop Install and Replace Underground --MWC 2B						
Nominal \$000						
Group	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Total Cost of Underground Notifications	\$ 37,844.0	\$ 13,495.8	\$ 13,495.8	\$ 24,362.0	\$ 26,652.1	\$ 13,821.5
Total Cost of Underground COE Notifications	\$ 5,914.0	\$ 1,431.6	\$ 1,431.6	\$ 2,925.7	\$ 2,925.7	\$ 2,925.7
Sub-total	\$ 43,758.0	\$ 14,927.4	\$ 14,927.4	\$ 27,287.7	\$ 29,577.8	\$ 16,747.2
Major Notifications	\$ 5,191.0	\$ 2,266.5	\$ 2,266.5	\$ 1,300.0	\$ 2,962.0	\$ 5,462.0
Underground Oil Switch Replacements	\$ -	\$ -	\$ 5,000.0	\$ -	\$ 1,000.0	\$ 25,000.0
No Material Code	\$ 227.0	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-total	\$ 5,418.0	\$ 2,266.5	\$ 7,266.5	\$ 1,300.0	\$ 3,962.0	\$ 30,462.0
Escalation	\$ -	\$ 492.8	\$ 567.3	\$ -	\$ 961.4	\$ 1,206.7
2 Install and Replace Underground	\$ 49,176.0	\$ 17,686.7	\$ 22,761.2	\$ 28,587.7	\$ 34,501.2	\$ 48,416.0

MWC 2B is comprised of five subprograms: (1) Total Cost of Underground Notifications; (2) Total Costs of Underground COE Notifications; (3) Major Notifications; (4) Underground Oil Switch Replacements; and, (5) Escalation.<sup>78</sup> DRA will discuss the remaining cost element of MWC 2B in the following sections.

### 1. Total Cost of Underground Notifications

Underground notifications and handled in the same manner as the overhead notifications. In addition, the forecasting method is the same.<sup>79</sup>

Because PG&E's forecast is consistent with historical costs DRA is not taking exception with PG&E's three-year total request. PG&E requested a three-year total

<sup>78</sup> Exh. PG&E-4, p. 13-16, lines 23-24

<sup>79</sup> Exh. PG&E-4, p. 5-35, lines 22-26

1 of \$64.8 million. DRA agrees with this three-year total amount. Since PG&E's  
2 actual 2012 capital expenditures exceeded its forecasted 2012 expenditures, and  
3 because DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and  
4 2014 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted  
5 3-year total. Therefore, DRA recommends capital expenditures of \$37.8 million for  
6 2012, \$13.5 million for 2013, and \$13.5 million for 2014.

## 7 **2. Total Cost of Underground COE Notifications**

8 Underground COE notifications and handled in the same manner as the  
9 overhead COE notifications. In addition, the forecasting method is the same.<sup>80</sup>

10 Because PG&E's forecast is consistent with historical costs DRA is not taking  
11 exception with PG&E's three-year total request. PG&E requested a three-year total  
12 of \$8.8 million. DRA agrees with this three-year total amount. Since PG&E's actual  
13 2012 capital expenditures exceeded its forecasted 2012 expenditures, and because  
14 DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and 2014  
15 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted 3-  
16 year total. Therefore, DRA recommends capital expenditures of \$5.9 million for  
17 2012, \$1.4 million for 2013, and \$1.4 million for 2014.

## 18 **3. Major Notifications**

19 Major Notifications are unit based work that is more complex and costly in  
20 nature and is therefore transferred from unit tracked work to Major notifications.  
21 While PG&E makes every effort to identify these notifications prior to allocation, the  
22 scope and breadth of some notifications changes due to conditions in the field, cost  
23 of equipment, and circumstances discovered after initial assessment. Forecasted  
24 costs are based on historical movement of unit based work adjusted for 2011 which  
25 reflects a considerably higher volume of transfers to major notifications.<sup>81</sup>

---

<sup>80</sup> Exh. PG&E-4, pp. 5-35 and 5-36, lines 27-2

<sup>81</sup> Exh. PG&E-4, p. WP 5-27, footnote 4

1 Because PG&E's forecast is consistent with historical costs DRA is not taking  
2 exception with PG&E's three-year total request. PG&E requested a three-year total  
3 of \$9.7 million. DRA agrees with this three-year total amount. Since PG&E's actual  
4 2012 capital expenditures exceeded its forecasted 2012 expenditures, and because  
5 DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and 2014  
6 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted 3-  
7 year total. Therefore, DRA recommends capital expenditures of \$5.2 million for  
8 2012, \$2.3 million for 2013, and \$2.3 million for 2014.

#### 9 **4. Underground Oil Switch Replacements**

10 PG&E has 2,500 underground oil filled switches that were manufactured prior  
11 to 1970. Since 2000, there have been 259 reports of failed oil switches.<sup>82</sup> After  
12 performing a condition based assessment of underground oil switches, PG&E would  
13 like to be funded for replacing 500 underground oil based switches a year starting in  
14 2014.<sup>83</sup>

15 PG&E has not currently performed any work to determine the condition of its  
16 underground oil based switches.<sup>84</sup> PG&E is not aware of any other major electric  
17 utilities that have performed a condition based assessment of underground oil  
18 switches.<sup>85</sup> PG&E also could not identify any cost benefit studies or engineering  
19 studies that supported its program request.<sup>86</sup>

20 DRA recommends funding of 100 switches per year for the three-year GRC  
21 cycle, which provide adequate funding to address failed oil switches. This is 20% of

---

<sup>82</sup> Exh. PG&E-4, p. WP 5-38, justification section

<sup>83</sup> Exh. PG&E-4, p. WP 5-39, cost assumption section

<sup>84</sup> PG&E's response to data request DRA-PG&E-041-MKB, Q. 8.a.ii.

<sup>85</sup> PG&E's response to data request DRA-PG&E-041-MKB, Q. 8.a.iii.

<sup>86</sup> PG&E's response to data request DRA-PG&E-041-MKB, Q. 8.e & f

1 PG&E's request of \$25 million, or \$5 million in 2014. PG&E can evaluate its  
 2 program and can request modification to the program in its next GRC, if needed.

3 **5. Escalation**

4 DRA modified PG&E's escalation workpapers by replacing PG&E's proposed  
 5 underground 2013 and 2014 capital expenditures with DRA's recommended 2013  
 6 and 2014 recommended underground capital expenditures for MWC 2B.

7 **D. INSTALL AND REPLACE NETWORK (MWC 2C)**

8 Table 8-5 shows PG&E's historic Install and Replace Network capital  
 9 expenditures in thousands of nominal dollars<sup>87</sup> and Table 8-16 compares DRA  
 10 Recommended and PG&E Proposed Install and Replace Network capital  
 11 expenditures in thousands of nominal dollars.<sup>88</sup>

12

Table 8-15						
Pacific Gas & Electric 2014 GRC						
Historic Install and Replace Capital Expenditures--MWC 2C						
Nominal \$000						
Description	Historic Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Total Cost of Network Transformers and Protector Replacement	\$ 53.8	\$ (53.7)	\$ 1,921.2	\$ 4,005.1	\$ 6,380.8	\$ 4,033.0
Total Cost of Network Swivelok Manhole Cover Replacement	\$ -	\$ 0.1	\$ 218.0	\$ 703.7	\$ 3,639.7	\$ 5,527.0
Total Cost of Network Protector Relay Replacement	\$ 2.1	\$ 710.4	\$ 1,294.4	\$ 62.1	\$ 201.9	\$ -
Sub-total	\$ 55.9	\$ 656.8	\$ 3,433.6	\$ 4,771.0	\$ 10,222.3	\$ 9,560.0
Scada Safety Monitoring Project	\$ -	\$ 0.1	\$ 362.3	\$ 3,199.3	\$ 8,235.6	\$ 7,102.0
Condition Based Maintenance (CBM) Project	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fiber Optics/Scada-Existing System Capital	\$ 120.2	\$ 676.5	\$ 439.5	\$ 66.7	\$ 1.8	\$ 1.0
SF Network Underground Major Project	\$ 481.5	\$ 3,143.7	\$ (107.3)	\$ -	\$ -	\$ 640.0
No Material Code	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 33.0
Sub-total	\$ 601.7	\$ 3,820.3	\$ 694.6	\$ 3,265.9	\$ 8,237.4	\$ 7,776.0
Install and Replace Networks	\$ 657.6	\$ 4,477.1	\$ 4,128.2	\$ 8,036.9	\$ 18,459.7	\$ 17,336.0

<sup>87</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32

<sup>88</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32, and Exh. PG&E-4, p. WP 19-3, line 1

Table 8-16						
Pacific Gas & Electric 2014 GRC						
Comp of DRA Rec and PG&E Prop Install and Replace --MWC 2C						
Nominal \$000						
Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Total Cost of Network Transformers and Protector Replacement	\$ 4,033.0	\$ 4,806.3	\$ 4,806.3	\$ 10,010.8	\$ 6,193.4	\$ 6,700.0
Total Cost of Network Swivelok Manhole Cover Replacement	\$ 5,527.0	\$ 3,876.5	\$ 3,876.5	\$ 5,280.0	\$ 4,500.0	\$ 3,500.0
Total Cost of Network Protector Relay Replacement	\$ -	\$ 410.6	\$ 431.1	\$ 391.0	\$ 410.6	\$ 431.1
Sub-total	\$ 9,560.0	\$ 9,093.4	\$ 9,113.9	\$ 15,681.8	\$ 11,104.0	\$ 10,631.1
Scada Safety Monitoring Project	\$ 7,102.0	\$ 4,100.8	\$ 4,100.8	\$ 2,247.5	\$ 5,056.0	\$ 8,000.0
Condition Based Maintenance (CBM) Project	\$ -	\$ 1,000.0	\$ 300.0	\$ 1,445.4	\$ 1,000.0	\$ 300.0
Fiber Optics/Scada-Existing System Capital	\$ 1.0	\$ 200.0	\$ 195.0	\$ 202.0	\$ 200.0	\$ 195.0
SF Network Underground Major Project	\$ 640.0	\$ -	\$ -	\$ -	\$ -	\$ -
No Material Code	\$ 33.0	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-total	\$ 7,776.0	\$ 5,300.8	\$ 4,595.8	\$ 3,894.9	\$ 6,256.0	\$ 8,495.0
Standard Cost Variance	\$ -	\$ -	\$ -	\$ 0.1	\$ -	\$ -
Escalation	\$ -	\$ 413.6	\$ 348.8	\$ -	\$ 498.8	\$ 486.6
1 Install and Replace Networks	\$ 17,336.0	\$ 14,807.7	\$ 14,058.5	\$ 19,576.9	\$ 17,858.8	\$ 19,612.7

2 MWC 2C is comprised of seven subprograms: (1) Total Cost of Network  
3 Transformers and Protector Replacements; (2) Total Costs of Network Swivelok  
4 Manhole Cover Replacement; (3) Total Cost of Network Protector Relay  
5 Replacement; (4) Supervisory Control and Data Acquisition (SCADA) Safety  
6 Monitoring Project; (5) Condition Based Maintenance (CBM) Project; (6) Fiber  
7 Optics/SCADA-Existing System Capital; and, (7) Escalation.<sup>89</sup> DRA will discuss the  
8 remaining cost element of MWC 2C in the following sections.

9 **1. Total Cost of Network Transformers and Protector**  
10 **Replacements;**

11 The network transformer and protector replacement plan has two primary  
12 drivers used to assess replacement: 1) Condition of the equipment based on oil  
13 sampling; and, 2) Replacement of transformers in high-risk situations with lower risk  
14 units. PG&E is incorporating a safer and more reliable network transformer that  
15 uses a single tank design. The network protectors are replaced at the same time as  
16 the network transformers since the equipment has a similar life span.<sup>90</sup>

17 Because PG&E's proposed capital expenditures are not in line with historic  
18 capital expenditures and PG&E's 2012 estimate was two and a half its actual costs,

<sup>89</sup> Exh. PG&E-4, p. 13-16, lines 23-24

<sup>90</sup> Exh. PG&E-4, p. 5-38, lines 20-29

1 DRA is recommending that the Commission adopt a three-year average (2010-2012)  
2 for PG&E's network transformers and protector replacement program 2013 and  
3 2014 capital expenditures. Therefore, DRA recommends capital expenditures of  
4 \$4.0 million for 2012, \$4.8 million for 2013, and \$4.8 million for 2014.

5 **2. Total Costs of Network Swivelok Manhole Cover**  
6 **Replacement**

7 The network manhole cover replacement project began in 2010. This work is  
8 designed to improve the safety of the underground network system. The project  
9 replaces in-service solid and grated manhole covers with a hinged venting manhole  
10 covers designed to stay in place in the event of a vault explosion. These covers  
11 improve public safety and reduce risk of collateral component and infrastructure  
12 damage. Because the cover stays in place, it reduces the risks associated with  
13 projectile damage and the hot gases released during the event. The network  
14 manhole cover unit forecast is based on a 5-year replacement plan beginning in San  
15 Francisco.<sup>91</sup>

16 Because PG&E's forecast is consistent with historical costs DRA is not taking  
17 exception with PG&E's three-year total request. PG&E requested a three-year total  
18 of \$13.3 million. DRA agrees with this three-year total amount. Since PG&E's  
19 actual 2012 capital expenditures exceeded its forecasted 2012 expenditures, and  
20 because DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and  
21 2014 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted  
22 3-year total. Therefore, DRA recommends capital expenditures of \$5.5 million for  
23 2012, \$3.9 million for 2013, and \$3.9 million for 2014 for PG&E's network Swivelok  
24 manhole cover replacement project.

25  

---

<sup>91</sup> Exh. PG&E-4, p. 5-39, lines 8-19

1                                   **3. Total Cost of Network Protector Relay**  
2                                   **Replacement**

3                   PG&E states that its network protectors are replaced at the same time as the  
4 network transformers since the equipment has a similar life span. PG&E's network  
5 protectors are, in general, older than the transformers on the system due to a  
6 Polychlorinated Biphenyls replacement program that occurred for the transformers in  
7 the 1980s.<sup>92</sup>

8                   Because PG&E's projections are consistent with historical capital  
9 expenditures, DRA agrees with PG&E's network protector relay replacement capital  
10 expenditures in year 2013 and 2014. Therefore, DRA recommends capital  
11 expenditures of \$0 for 2012, \$410,600 for 2013, and \$431,100 for 2014.

12                                   **4. SCADA Safety Monitoring Project**

13                   The installation of PG&E's network SCADA safety monitoring project began in  
14 2010. The first of PG&E's network groups is scheduled to go operational in March  
15 2012. This system supports condition based maintenance and over the long term is  
16 allowing PG&E to decrease maintenance costs as more real-time information is  
17 available on the network component conditions.<sup>93</sup>

18                   Because PG&E's forecast is consistent with historical costs DRA is not taking  
19 exception with PG&E's three-year total request. PG&E requested a three-year total  
20 of \$15.3 million. DRA agrees with this three-year total amount. Since PG&E's  
21 actual 2012 capital expenditures exceeded its forecasted 2012 expenditures, and  
22 because DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and  
23 2014 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted  
24 3-year total. Therefore, DRA recommends capital expenditures of \$7.1 million for  
25 2012, \$4.1 million for 2013, and \$4.1 million for 2014 for PG&E's SCADA safety  
26 monitoring project.

---

<sup>92</sup> Exh. PG&E-4, p. 5-38, lines 27-32

<sup>93</sup> Exh. PG&E-4, p. 5-38, lines 9-18

1 **5. Condition Based Maintenance (CBM) Project**

2 PG&E's network condition based maintenance project, began in 2010, and is  
3 focused on converting the maintenance process from manual based maintenance  
4 and tracking systems to a computer based system. This work was completed in  
5 2011. The next phase of the work involves tying the new computer based system  
6 into the SCADA monitoring system and oil sampling system to establish health  
7 indices for the network components. These health indices will be used to prioritize  
8 future replacement work and will also be used to help determine necessary  
9 maintenance work.<sup>94</sup>

10 DRA agrees to PG&E condition based maintenance project capital  
11 expenditures in year 2013 and 2014. Therefore, DRA recommends capital  
12 expenditures of \$0 for 2012, \$1.0 million for 2013, and \$300,000 for 2014.

13 **6. Fiber Optics/SCADA-Existing System Capital**

14 The existing fiber optics/SCADA system is used to monitor network protector  
15 status and loading, and is critical to ensure safe and reliable operation of the  
16 networks. This system is over 20 years old, and this program exists to replace parts  
17 of this system.<sup>95</sup>

18 Because PG&E's projections are consistent with historical capital  
19 expenditures, DRA agrees to PG&E network fiber optics/SCADA existing system  
20 capital expenditures in year 2013 and 2014. Therefore, DRA recommends capital  
21 expenditures of \$1,000 for 2012, \$200,000 for 2013, and \$195,000 for 2014.

22 **7. Escalation**

23 DRA modified PG&E's escalation workpapers by replacing PG&E's proposed  
24 network 2013 and 2014 capital expenditures with DRA's recommended 2013 and  
25 2014 recommended network capital expenditures for MWC 2C.

---

<sup>94</sup> Exh. PG&E-4, pp. 5-38 & 5-39, lines 20-4

<sup>95</sup> PG&E's response to data request DRA-PG&E-043-MKB, Q. 8.c

1 **VI. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION-**  
 2 **OPERATIONS, AUTOMATION AND SUPPORT**

3 **A. CAPITAL TOOLS AND EQUIPMENT (MWC 05)**

4 Table 8-17 shows PG&E's historic Capital Tools and Equipment capital  
 5 expenditures in thousands of nominal dollars<sup>96</sup> and Table 8-18 compares DRA  
 6 Recommended and PG&E Proposed Capital Tools and Equipment capital  
 7 expenditures in thousands of nominal dollars.<sup>97</sup>

8

Table 8-17						
Pacific Gas & Electric 2014 GRC						
Historic Capital Tools and Equipment Capital Expenditures--MWC 5						
Nominal \$000						
Description	Historic Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Tools & Equipment-Chapter 3	\$ 200.0	\$ 438.0	\$ 457.0	\$ 741.0	\$ 985.0	\$ 721.3
Tools & Equipment-Chapter 20	€ -	€ 32.00	€ 152.00	€ 2,134.00	€ 2,084.00	\$ 3,398.0
Material Overdraw-Chapter 20	\$ (1,155.0)	\$ (3,054.0)	\$ (4,882.0)	\$ (5,433.0)	\$ (5,031.0)	\$ (6,497.0)
Capital Tools and Equipment	\$ (955.0)	\$ (2,584.0)	\$ (4,273.0)	\$ (2,558.0)	\$ (1,962.0)	\$ (2,377.7)

9

Table 8-18						
Pacific Gas & Electric 2014 GRC						
Comp of DRA Rec and PG&E Prop Capital Tools and Equipment --MWC 5						
Nominal \$000						
Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Tools & Equipment-Chapter 3	\$ 721.3	\$ 554.3	\$ 554.3	\$ 540.0	\$ 645.0	\$ 645.0
Tools & Equipment-Chapter 20	\$ 3,398.0	\$ 2,085.0	\$ 2,085.0	\$ 3,790.0	\$ 2,085.0	\$ 2,085.0
Material Overdraw-Chapter 20	\$ (6,497.0)	\$ (5,065.8)	\$ (5,056.8)	\$ (4,704.0)	\$ (5,065.8)	\$ (5,056.8)
Capital Tools and Equipment	\$ (2,377.7)	\$ (2,426.5)	\$ (2,417.4)	\$ (374.0)	\$ (2,335.8)	\$ (2,326.8)

10 MWC 5 is comprised of three subprograms: (1) Tools & Equipment, Chapter  
 11 3; (2) Tools & Equipment, Chapter 20; and, (3) Material Overdraw.<sup>98</sup> DRA will  
 12 discuss the remaining cost element of MWC 5 in the following sections.

<sup>96</sup> Exh. PG&E-4, WP 5-25, lines 14-32

<sup>97</sup> Exh. PG&E-4, WP 5-25, lines 14-32, and Exh. PG&E-4, WP 19-3, line 1

<sup>98</sup> Exh. PG&E-4, p. 13-16, lines 23-24

1                                   **1. Tools & Equipment—Chapter 3**

2                   MWC 05 includes the cost of miscellaneous tools and equipment to support  
3 distribution and generation work. For PG&E’s Applied Technology Service center,  
4 capital expenditures in MWC 05 are needed to ensure that employees performing  
5 field and laboratory tests have appropriate tools and test equipment. Regular  
6 expenditures are necessary to replace damaged, worn out, or obsolete tools and to  
7 ensure specialized tools are available to perform testing and other analytical  
8 functions.<sup>99</sup>

9                   Because PG&E’s forecast is consistent with historical costs DRA is not taking  
10 exception to PG&E’s three-year total request. PG&E requested a three-year total of  
11 \$1.8 million. DRA agrees with this three-year total amount. Since PG&E’s actual  
12 2012 capital expenditures exceeded its forecasted 2012 expenditures, and because  
13 DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and 2014  
14 forecast so that DRA’s 3-year total from 2012-2014 equals PG&E’s forecasted 3-  
15 year total. Therefore, DRA recommends capital expenditures of \$721,300 for 2012,  
16 \$554,300 for 2013, and \$554,300 for 2014.

17                                   **2. Tools and Equipment—Chapter 20**

18                   MWC 05 includes the cost of miscellaneous tools used by operations,  
19 maintenance and construction employees to perform distribution-related work.  
20 These expenditures are needed to: (1) Ensure tools are available for basis  
21 operations, maintenance, and construction activities; (2) Replace damaged, work  
22 out, or obsolete tools need to perform work; and, (3) Ensure specialized tools are  
23 available to install, test, remove or diagnose equipment.<sup>100</sup>

24                   Because PG&E’s request is consistent with recent tools and equipment  
25 activity, DRA does not take exception to PG&E’s miscellaneous tools request for  
26 2013 and 2014 capital expenditures in this general rate case. Therefore, DRA

---

<sup>99</sup> Exh. PG&E-4, p. 3-9, lines 1-11

<sup>100</sup> Exh. PG&E-4, p. 20-5, lines 7-18

1 recommends capital expenditures of \$3.4 million for 2012, \$2.0 million for 2013, and  
2 \$2.0 million for 2014.

3 **3. Material Overdrawn—Chapter 20**

4 PG&E uses MWC 05 to record credits associated with overdrawn materials.  
5 Material for capital projects are typically charged against the capital order for a  
6 specific project. Sometimes material is purchased for a project and goes unused.  
7 Normally, the overdrawn material is credited back to the capital order that was  
8 initially used to purchase the material. However, it sometimes occurs that the capital  
9 order is closed for further charging before the overdrawn material is credited back to  
10 the capital order. In these cases, the material is credited back to an order in MWC  
11 05.<sup>101</sup>

12 Because PG&E's material overdrawn capital expenditure proposed is  
13 consistent with historical expenditures, DRA does not take exception with PG&E  
14 requested amount in this general rate case. Therefore, DRA recommends capital  
15 expenditures of (\$6.5) million for 2012, (\$5.1) million for 2013, and (\$5.1) million for  
16 2014.

17 **B. DISTRIBUTION, AUTOMATION AND PROTECTION (MWC 09)**

18 Table 8-19 shows PG&E's historic Distribution Automation and Protection  
19 capital expenditures in thousands of nominal dollars<sup>102</sup> and Table 8-20 compares  
20 DRA Recommended and PG&E Proposed Distribution Automation and Protection  
21 capital expenditures in thousands of nominal dollars.<sup>103</sup>

---

<sup>101</sup> Exh. PG&E-4, pp. 20-5 & 20-6, lines 21-3

<sup>102</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32

<sup>103</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32, and Exh. PG&E-4, WP 19-3, line 1

Table 8-19						
Pacific Gas & Electric 2014 GRC						
Historic Distribution Automation and Protection Capital Expenditures--MWC-9						
Nominal \$000						
Description	Historic Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Installation of Substation SCADA	\$ 364.9	\$ 1,393.2	\$ 3,513.0	\$ 3,442.5	\$ 17,555.0	\$ 32,979.0
Installation of Feeder SCADA	\$ 2,674.6	\$ 2,632.7	\$ 1,679.0	\$ 1,787.9	\$ 14.5	\$ 42.0
Replacement of Substation SCADA	\$ 1,810.0	\$ 1,589.8	\$ 2,127.1	\$ 2,490.4	\$ 845.0	\$ 2,963.0
Replacement of Feeder SCADA	\$ 392.2	\$ 31.1	\$ 0.1	\$ 47.9	\$ 2,819.0	\$ 882.0
Fire Risk Management (FRM)	\$ -	\$ -	\$ -	\$ 27.8	\$ 78.5	\$ 64.0
Replace of Substation Protective Relays	\$ 211.1	\$ 24.0	\$ 50.1	\$ 433.6	\$ 354.0	\$ 323.0
Emergency Equipment Replacement	\$ 235.8	\$ 22.9	\$ 249.8	\$ 191.1	\$ 391.4	\$ 132.0
Distribution SCADA Management System	\$ 3,049.0	\$ 2,911.0	\$ 569.0	\$ (539.0)	\$ -	\$ -
Escalation	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 133.0
E Dist Automation & Protection	\$ 8,737.4	\$ 8,604.7	\$ 8,188.2	\$ 7,882.3	\$ 22,057.4	\$ 37,518.0

1

Table 8-20						
Pacific Gas & Electric 2014 GRC						
Comp of DRA Rec and PG&E Prop Distribution Automation and Protection --MWC 9						
Nominal \$000						
Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Installation of Substation SCADA	\$ 32,979.0	\$ 33,131.5	\$ 56,781.5	\$ 29,942.0	\$ 34,650.0	\$ 58,300.0
Installation of Feeder SCADA	\$ 42.0	\$ 1,160.5	\$ 1,160.5	\$ 1,000.0	\$ 3,000.0	\$ 5,000.0
Replacement of Substation SCADA	\$ 2,963.0	\$ 1,000.0	\$ 2,000.0	\$ 3,278.0	\$ 1,000.0	\$ 2,000.0
Replacement of Feeder SCADA	\$ 882.0	\$ 1,249.6	\$ 1,249.6	\$ 1,100.0	\$ 3,000.0	\$ 2,000.0
Fire Risk Management (FRM)	\$ 64.0	\$ 56.8	\$ 56.8	\$ 1,200.0	\$ 2,000.0	\$ 2,000.0
Replace of Substation Protective Relays	\$ 323.0	\$ 279.2	\$ 279.2	\$ 318.0	\$ 2,000.0	\$ 2,000.0
Emergency Equipment Replacement	\$ 132.0	\$ 277.5	\$ 277.5	\$ 347.0	\$ 310.0	\$ 310.0
Escalation	\$ 133.0	\$ 1,060.9	\$ 1,591.3	\$ -	\$ 1,312.3	\$ 1,843.7
E Dist Automation & Protection	\$ 37,518.0	\$ 38,215.9	\$ 63,396.3	\$ 37,185.0	\$ 47,272.3	\$ 73,453.7

2

3 MWC 9 is comprised of eight subprograms: (1) Installation of Substation  
4 SCADA; (2) Installation of Feeder SCADA; (3) Replacement Substation SCADA; (4)  
5 Replacement of Feeder SCADA; (5) Fire Risk Management (FRM); (6) Replacement  
6 of Substation Protective Relays; (7) Emergency Equipment Replacement; and, (8)  
7 Escalation.<sup>104</sup> DRA will discuss the remaining cost element of MWC 5 in the  
8 following sections.

9

### 1. Installation of Substation SCADA

10

11

PG&E wants to install substation SCADA automation to nearly all of its substations by 2017. According to PG&E, installing substation SCADA improves: (1)

<sup>104</sup> Exh. PG&E-4, p. 13-16, lines 23-24

1 Safety; (2) Reliability; (3) Remote operational control of substation equipment; and,  
2 (4) Implementation of current and anticipated Smart Grid technologies.<sup>105</sup>

3 PG&E requested a three-year total of \$122.9 million. DRA agrees with this  
4 three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded  
5 its forecasted 2012 expenditures, and because DRA accepts the 2012 actual  
6 expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total  
7 from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA  
8 recommends capital expenditures of \$33.0 million for 2012, \$33.1 million for 2013,  
9 and \$56.8 million for 2014.

## 10 **2. Installation of Feeder SCADA**

11 PG&E's capital forecast for feeder SCADA includes: (1) Installing SCADA  
12 operable line equipment at new locations; (2) upgrading the controls of existing line  
13 equipment and adding communication to make them SCADA operable; and, (3)  
14 installing cyber secure SCADA communications equipment.<sup>106</sup>

15 While PG&E is requesting capital expenditures of \$9 million for the period  
16 2012-2014, PG&E only spent \$54,500 in this area in 2011 and 2012 combined.  
17 Therefore, DRA recommends that PG&E receive funding for the installation of feeder  
18 SCADA in 2013 and 2014 at the three-year historic average of \$1.16 million a year.

## 19 **3. Replacement Substation SCADA**

20 An RTU is an intelligent electronic device that collects equipment operating  
21 information and provides it to the SCADA master station, located at one of PG&E's  
22 distribution control centers. PG&E's existing substation RTUs are either obsolete,  
23 reaching the end of their operating lives, or are not functional and cannot be repaired  
24 due to the unavailability of spare parts. Replacement hardware for the hardware can

---

<sup>105</sup> Exh. PG&E-4, pp. 17-9 through 17-11, lines 23-21

<sup>106</sup> Exh. PG&E-4, pp. 17-15 through 17-16, lines 29-2

1 no longer be obtained. In addition, the software used to configure the legacy RTUs  
2 is no longer supported.<sup>107</sup>

3 DRA agrees with PG&E proposed replacement substation SCADA capital  
4 expenditures in this general rate case.

#### 5 **4. Replacement of Feeder SCADA**

6 Some distribution line SCADA equipment was installed more than 25 years  
7 ago and is obsolete and/or unreliable. Supporting this legacy equipment is not  
8 practical given its age and unavailability of spare parts.<sup>108</sup>

9 From 2008-2010, PG&E spent only \$79,100 on replacement of feeder  
10 SCADA. During 2011, PG&E expenditures rose to \$2.8 million, but then their  
11 expenditures dropped \$882,000 in 2012. PG&E expects to increase 2013 and 2014  
12 capital expenditures to a level of \$5 million. DRA is recommending that the  
13 Commission adopt a level of capital expenditures that is consistent with PG&E's  
14 three year average (2009-2011) for replacement of feeder SCADA which is  
15 consistent with PG&E' 2012 capital expenditure. Therefore, DRA recommends  
16 capital expenditures of \$882,000 for 2012, \$1.2 million for 2013, and \$1.2 million for  
17 2014.

#### 18 **5. Fire Risk Management (FRM)**

19 This program consists of the installation of SCADA capability to remotely  
20 control equipment on key substation feeder breakers and line reclosers as well as  
21 control software to invoke special equipment settings during high fire periods.<sup>109</sup>

22 Prior to 2010, PG&E did not have any fire risk management capital  
23 expenditures. PG&E's actual capital expenditures between 2010-2012 total  
24 \$170,300. PG&E requests this Commission to provide funding for 2012-2014 of  
25 \$5.2 million. PG&E's request is inconsistent with their past actions and

---

<sup>107</sup> Exh. PG&E-4, p. 17-14, lines 1-13

<sup>108</sup> Exh. PG&E-4, WP 17-16, lines 23-29

1 expenditures. During 2012, PG&E projected capital expenditures of \$1.2 million, but  
2 only spent \$64,000. DRA recommends the Commission adopt a 2010-2012 three-  
3 year average, or fire risk management capital expenditures of \$56,800 for 2013 and  
4 2014, a number that is consistent with PG&E's actual 2012 expenditures of \$64,000.

## 5 **6. Replacement of Substation Protective Relays**

6 PG&E operates more than 1,100 distribution substation power transformers  
7 throughout its system. PG&E's goal is to maintain effective electrical protection  
8 systems for these transformers to provide safe and reliable service, minimize  
9 equipment damage, and reduce service disruptions to customers. Many of the  
10 relaying systems proposed for replacement consist of electro-mechanical relays that  
11 have been in operation longer than 50 years, and are obsolete, with very limited  
12 availability of spare parts.<sup>110</sup>

13 Historically, during the last six years, PG&E has averaged replacement of  
14 substation protective relays capital expenditures of \$232,600 a year. In 2012, PG&E  
15 had capital expenditures in this area of \$323,000. PG&E is requesting future capital  
16 expenditures of \$2.0 million a year. There is no evidence that PG&E requires this  
17 excessive amount of funding. DRA recommends the Commission adopt a three-  
18 year average replacement of substation protective relays capital expenditure of  
19 \$279,200 a year for 2013 and 2014.

## 20 **7. Emergency Equipment Replacement**

21 Emergency equipment replacement involves replacing inoperable automation  
22 and protection equipment. Emergency replacements occur when equipment fails  
23 and requires immediate action to restore functionality. The emergency subprogram

---

(Continued from previous page)

<sup>109</sup> Exh. PG&E-4, p. 17-17, lines 10-17

<sup>110</sup> Exh. PG&E-4, p. 17-15, lines 1-10

1 included in MWC 9 covers the replacement of failed RTUs, peripheral boards and  
 2 protective relays.<sup>111</sup>

3 PG&E estimated 2012 emergency equipment replacements at \$347,000 but  
 4 only had capitalized expenditures of \$132,000. DRA recommends the Commission  
 5 adopt a three-year average emergency equipment replacement capital expenditure  
 6 of \$277,500 a year for 2013 and 2014.

7 **8. Escalation**

8 DRA modified PG&E’s escalation workpapers by replacing PG&E’s proposed  
 9 distribution automation and protection 2013 and 2014 capital expenditures with  
 10 DRA’s recommended 2013 and 2014 recommended distribution automation and  
 11 protection capital expenditures for MWC 9.

12 **C. DISTRIBUTION CONTROL CENTER (MWC 63D)**

13 Table 8-21 shows PG&E’s historic Distribution Control Center capital  
 14 expenditures in thousands of nominal dollars<sup>112</sup> and Table 8-22 compares DRA  
 15 Recommended and PG&E Proposed Distribution Control Center capital  
 16 expenditures in thousands of nominal dollars.<sup>113</sup>

Table 8-21						
Pacific Gas & Electric 2014 GRC						
Historic Distribution Control Center Capital Expenditures--MWC 63						
Nominal \$000						
Description	Historic Capital Expenditures					
	2007	2008	2009	2010	2011	2012
Distribution CC Consolidation	\$ -	\$ -	\$ -	\$ -	\$ 480.0	\$ 1,926.0
Existing CC Improvements	\$ -	\$ -	\$ -	\$ 4,832.0	\$ 1,383.0	\$ 889.0
Total	\$ -	\$ -	\$ -	\$ 4,832.0	\$ 1,863.0	\$ 2,815.0

17 <sup>111</sup> Exh. PG&E-4, p. 17-9, lines 1-7

<sup>112</sup> Exh. PG&E-4, WP 5-25, lines 14-32

<sup>113</sup> Exh. PG&E-4, WP 5-25, lines 14-32, and Exh. PG&E-4, WP 19-3, line 1

Table 8-22						
Pacific Gas & Electric 2014 GRC						
Comp of DRA Rec and PG&E Prop Distribution Control Center --MWC 63						
Nominal \$000						
Description	DRA Recommended			PG&E Proposed		
	2012	2013	2014	2012	2013	2014
Distribution CC Consolidation	\$ 1,926.0	\$ 34,000.0	\$ 33,000.0	\$ 3,000.0	\$ 34,000.0	\$ 33,000.0
Existing CC Improvements	\$ 889.0	\$ -	\$ -	\$ 2,000.0	\$ -	\$ -
Escalation	\$ -	\$ 971.3	\$ 848.8	\$ -	\$ 971.3	\$ 848.8
Total	\$ 2,815.0	\$ 34,971.3	\$ 33,848.8	\$ 5,000.0	\$ 34,971.3	\$ 33,848.8

1

2 MWC 63D is comprised of three subprograms: (1) Distribution Control Center  
3 Consolidation; (2) Existing Control Center Improvements; and, (3) Escalation.<sup>114</sup>  
4 DRA will discuss the remaining cost element of MWC 5 in the following sections.

5 **1. Distribution Control Center Consolidation**

6 In this general rate case, PG&E is seeking capital expenditures of \$82 million  
7 for three consolidated distribution centers. The purpose of these three centers is to  
8 consolidate the thirteen independent distribution centers to provide better overview  
9 of each service territory, improve working conditions, provide more accurate and up  
10 to date distribution system information, improve disaster recovery capability, provide  
11 better customer communication, and provide a foundation for future “Smart Grid”  
12 applications.<sup>115</sup>

13 DRA does not take exception to PG&E’s 2013 and 2014 forecasts for the  
14 consolidated distribution center in this general rate case. DRA recommends capital  
15 expenditures of \$1.9 million for 2012, \$34.0 million for 2013, and \$33.0 million for  
16 2014.

17 **2. Escalation**

18 DRA modified PG&E’s escalation workpapers by replacing PG&E’s proposed  
19 distribution control center 2013 and 2014 capital expenditures with DRA’s

---

<sup>114</sup> Exh. PG&E-4, p. 13-16, lines 23-24

<sup>115</sup> Exh. PG&E-4, p. WP 11-26, justification section

1 recommended 2013 and 2014 recommended distribution control center capital  
 2 expenditures for MWC 63D.

3 **D. MANAGE BUILDING (MWC 78)**

4 Table 8-23 shows PG&E's historic Manage Building capital expenditures in  
 5 thousands of nominal dollars<sup>116</sup> and Table 8-24 compares DRA Recommended and  
 6 PG&E Proposed Manage Buildings capital expenditures in thousands of nominal  
 7 dollars.<sup>117</sup>

**Table 8-23**  
**Pacific Gas & Electric 2014 GRC**  
**Historic Management Building Capital Expenditures--MWC 78**  
**Nominal \$000**

Planning Order	Description	Historic Capital Expenditures					
		2007	2008	2009	2010	2011	2012
5736526	ATS Distribution Automation Test Facility	\$ -	\$ -	\$ -	\$ -	\$ 2,610.0	\$ 4,180.8
Adjustment	ATS Distribution Automation Test Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5746961	ATS Tech Center Facility Upgrade	\$ 66.0	\$ 9.0	\$ 1,027.0	\$ 1,422.0	\$ -	\$ -
5510503	ATS Dist Buildings (Weather Office)	\$ -	\$ -	\$ -	\$ -	\$ 162.0	\$ -
5736529	Weld Lab Upgrade	\$ -	\$ -	\$ -	\$ -	\$ 113.0	\$ 27.9
5733703	ATS Thermal Flow Test Facility	\$ -	\$ -	\$ -	\$ -	\$ 3.0	\$ -
5736527	Modular Generation Test Facility	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 344.9
5508739	ATS Electric Lab Facility (Performance Labs)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5746960	ATS Tech Center Parking Lot	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Projects under \$1 million	\$ -	\$ -	\$ 73.0	\$ -	\$ -	\$ -
	Manage Buildings Chapter 3	\$ 66.0	\$ 9.0	\$ 1,100.0	\$ 1,422.0	\$ 2,888.0	\$ 4,553.6
	Manage Buildings Chapter 20	\$ 856.0	\$ 242.0	\$ 266.0	\$ (229.0)	\$ 614.0	\$ 2,774.8
	Management Buildings	\$ 922.0	\$ 251.0	\$ 1,366.0	\$ 1,193.0	\$ 3,502.0	\$ 7,328.4

8

<sup>116</sup> Exh. PG&E-4, WP 5-25, lines 14-32 and, data response to DRA-PG&E-249-MKB, Q. 1

<sup>117</sup> PG&E's response to data request DRA-PG&E-249-MKB, Q.1 and, Exh. PG&E-4, WP 5-25, lines 14-32

Table 8-24							
Pacific Gas & Electric 2014 GRC							
Comp of DRA Rec and PG&E Prop Management Building --MWC 78							
Nominal \$000							
Planning Order	Description	DRA Recommended			PG&E Proposed		
		2012	2013	2014	2012	2013	2014
5736526	ATS Distribution Automation Test Facility	\$ 4,180.8	\$ -	\$ -	\$ 4,082.0	\$ -	\$ -
Adjustment	ATS Distribution Automation Test Facility	\$ -	\$ -	\$ -	\$ (2,582.0)	\$ -	\$ -
5746961	ATS Tech Center Facility Upgrade	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 984.0
5746960	ATS Tech Center Parking Lot	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 974.0
5736527	Modular Generation Test Facility	\$ 344.9	\$ -	\$ -	\$ 450.0	\$ -	\$ -
5508739	ATS Electric Lab Facility (Performance Labs)	\$ -	\$ 200.0	\$ 230.0	\$ -	\$ 200.0	\$ 230.0
5736529	Weld Lab Upgrade	\$ 27.9	\$ 100.0	\$ -	\$ -	\$ 100.0	\$ -
	Manage Buildings-Chapter 3	\$ 4,553.6	\$ 300.0	\$ 230.0	\$ 1,950.0	\$ 300.0	\$ 2,188.0
	Normal Operations	\$ 2,774.8	\$ 614.0	\$ 614.0	\$ 870.0	\$ 614.0	\$ 614.0
	San Carlos Service Center	\$ -	\$ -	\$ -	\$ -	\$ 1,123.8	\$ -
	Colma Service Center	\$ -	\$ -	\$ -	\$ -	\$ 898.2	\$ -
	E Distribution Buildings-Mapping	\$ -	\$ -	\$ -	\$ -	\$ 769.5	\$ -
	Santa Maria Storm Room	\$ -	\$ -	\$ -	\$ -	\$ 738.3	\$ -
	Stockton Service Center Upgrade	\$ -	\$ -	\$ -	\$ -	\$ 535.3	\$ -
	Cinnabar Service Center	\$ -	\$ -	\$ -	\$ -	\$ 234.0	\$ -
	E Distribution Buildings-Meter Reading Upgrades	\$ -	\$ -	\$ -	\$ -	\$ 196.6	\$ -
	E Distribution Buildings-Auburn Helicopter	\$ -	\$ -	\$ -	\$ -	\$ 175.4	\$ -
	Additional Security	\$ -	\$ -	\$ -	\$ -	\$ 1,000.9	\$ 1,025.0
	Escalation	\$ -	\$ 26.5	\$ 21.1	\$ -	\$ 191.0	\$ 95.7
	Manage Buildings-Chapter 20	\$ 2,774.8	\$ 640.5	\$ 635.1	\$ 870.0	\$ 6,477.0	\$ 1,734.7
	Manage Buildings	\$ 7,328.4	\$ 940.5	\$ 865.1	\$ 2,820.0	\$ 6,777.0	\$ 3,922.7

1

2 MWC 78 is comprised of fifteen subprograms: (1) ATS Tech Center Facility  
3 Upgrade; (2) ATS Tech Center Parking Lot; (3) ATS Electric Lab Facility  
4 (Performance Lab); (4) Weld Lab Upgrade; (5) Normal Operations; (6) San Carlos  
5 Service Center; (7) Colma Service Center; (8) Electric Distribution Building-Mapping;  
6 (9) Santa Maria Storm Room; (10) Stockton Service Center Upgrades; (11) Cinnabar  
7 Service Center; (12) Meter Reading Upgrades; (13) Auburn Helicopter; (14)  
8 Additional Security; and, (15) Escalation.<sup>118</sup> DRA will discuss the remaining cost  
9 element of MWC 78 in the following sections.

10 **1. ATS Technical Center Facility Upgrade**

11 PG&E proposes to upgrade its San Ramon Technology Center infrastructure  
12 by modernizing the common areas of the facility. The cost estimates cover a wide  
13 range of individual upgrades including corridors, bathrooms, conference rooms,

<sup>118</sup> Exh. PG&E-4, p. 13-16, lines 23-24

1 furniture, filing and storage cabinets, lighting, flooring, lobby area, and audio visual  
2 equipment.<sup>119</sup>

3 PG&E has approximately 20,000 employees who provide gas and electric  
4 service to approximately 15 million people throughout a 70,000 square mile service  
5 territory located in northern and central California. Every year PG&E performs  
6 normal building upgrades throughout its service territory. These costs are normal  
7 and continuous and build into PG&E's base costs. These costs are located in every  
8 department of PG&E at all levels and cannot be separated.

9 Therefore DRA recommends that the Commission does not provide addition  
10 funding for PG&E's San Ramon Technical Center Infrastructure upgrade in 2014.

## 11 **2. ATS Technical Center Parking Lot**

12 The San Ramon Technology Center requires additional parking spaces to  
13 accommodate growth in the number of employees, laboratories, work equipment  
14 such as vehicles and test trailers, and materials for testing.<sup>120</sup>

15 PG&E has approximately 20,000 employees who provide gas and electric  
16 service to approximately 15 million people throughout a 70,000 square mile service  
17 territory located in northern and central California. Every year PG&E performs  
18 normal parking lot upgrades throughout its service territory. These costs are normal  
19 and continuous and build into PG&E's base costs. These costs are located in every  
20 department of PG&E at all levels and cannot be separated.

21 Therefore, DRA recommends that the Commission does not provide any  
22 addition funding for PG&E's San Ramon Technical Center Parking Lot.

## 23 **3. ATS Electric Lab Facility (Performance Labs)**

24 PG&E plans to upgrade equipment in the Performance Testing Laboratories  
25 to allow continued evaluation of customer-side of the meter technologies, including  
26 customer-owned generation, energy storage and demand response methods and

---

<sup>119</sup> Exh. PG&E-4, p. 3-11, lines 1-10

<sup>120</sup> Exh. PG&E-4, p. 3-11, lines 13-16

1 technologies and the impact of these technologies on PG&E's system as part of  
2 PG&E's integrated laboratory environment.<sup>121</sup>

3 DRA has reviewed PG&E's proposed capital expenditures of \$200,000 in  
4 2013 and \$230,000 in 2014, and does not take exception to them at this time.

#### 5 **4. Weld Lab Upgrade**

6 PG&E is seeking an upgrade to its welding lab for two reasons: (1) employee  
7 safety; and (2) changing welding work requirements. The safety benefits include  
8 better ventilation in the lab. The changing work requirements include additional  
9 capabilities of the lab to support specialized welding support for generation and  
10 distribution in addition to nuclear generation welding procedures. The laboratory can  
11 be used to test and evaluate new welding methods before applying them in a real  
12 world environment to assure safety and effectiveness in a controlled  
13 environment.<sup>122</sup>

14 PG&E recorded \$27,900 of capital expenditures in 2012, which DRA accepts.  
15 DRA has reviewed PG&E's proposed capital expenditure of \$100,000 in 2013 and  
16 does not take exception to it at this time.

#### 17 **5. Buildings-Normal Operations**

18 PG&E based continued capital expenditures to manage electric distribution  
19 buildings for 2013 and 2014 of \$614,000 based on 2011 recorded spending.<sup>123</sup>

20 DRA has reviewed PG&E's proposed capital expenditures and does not take  
21 exception to them at this time. DRA recommends capital expenditures of \$2.8  
22 million for 2012, \$614,000 for 2013, and \$614,000 for 2014.

---

<sup>121</sup> Exh. PG&E-4, p. 3-10, lines 3-9

<sup>122</sup> PG&E's response to data request DRA-PG&E-051-MKB, Q. 6.c.

<sup>123</sup> Exh. PG&E-4, p. 20-5, lines 7-12

1                                   **6. San Carlos Service Center**

2                   PG&E wants \$1.1 million in 2013 to redesign its San Carlos Service Center  
3 because it claims to need additional space to accommodate employees during major  
4 storms.<sup>124</sup>

5                   In this general rate case, PG&E is seeking capital expenditures of \$82 million  
6 for three consolidated distribution centers. The purpose of these three centers is to  
7 consolidate the thirteen independent distribution centers to provide better overview  
8 of each service territory, improve working conditions, provide more accurate and up  
9 to date distribution system information, improve disaster recovery capability, provide  
10 better customer communication, and provide a foundation for future “Smart Grid”  
11 applications.<sup>125</sup>

12                  DRA recommends against providing PG&E addition funding for its San Carlos  
13 service center upgrade to accommodate more employees during major storms since  
14 this function will be accomplished in the new consolidated distribution centers.

15                                   **7. Colma Service Center**

16                  PG&E wants \$898,242 in 2013 to create its Colma Service Center major  
17 storm center because it claims to need additional space to accommodate employees  
18 during major storms.<sup>126</sup>

19                  In this general rate case, PG&E is seeking capital expenditures of \$82 million  
20 for three consolidated distribution centers. The purpose of these three centers is to  
21 consolidate the thirteen independent distribution centers provide better overview of  
22 each service territory, improve working conditions, provide more accurate and up to  
23 date distribution system information, improve disaster recovery capability, provide

---

<sup>124</sup> Exh. PG&E-4, p. WP 20-15, line 18

<sup>125</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>126</sup> Exh. PG&E-4, p. WP 20-15, line 19

1 better customer communication, and provide a foundation for future “Smart Grid”  
2 applications.<sup>127</sup>

3 DRA recommends against providing PG&E addition funding for its Colma  
4 service center major storm center to accommodate more employees since this  
5 function will be accomplished in the new consolidated distribution centers.

6 **8. Electric Distribution Building-Mapping**

7 PG&E wants \$769,526 in 2013 to create its electric distribution buildings—  
8 mapping building upgrades.<sup>128</sup>

9 In this general rate case, PG&E is seeking capital expenditures of \$82 million  
10 for three consolidated distribution centers. The purpose of these three centers is to  
11 consolidate the thirteen independent distribution centers provide better overview of  
12 each service territory, improve working conditions, provide more accurate and up to  
13 date distribution system information, improve disaster recovery capability, provide  
14 better customer communication, and provide a foundation for future “Smart Grid”  
15 applications.<sup>129</sup> Electronic wall mapping is a necessary component of the  
16 consolidated distribution center and will give operators shared access to network  
17 information.<sup>130</sup>

18 DRA recommends against providing PG&E addition funding for its electric  
19 distribution buildings—mapping building upgrade since this function will be  
20 accomplished in the new consolidated distribution centers.

---

<sup>127</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>128</sup> Exh. PG&E-4, p. WP 20-15, line 20

<sup>129</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>130</sup> Exh. PG&E-4, p. WP 11-26, project description section

1                                   **9. Santa Maria Storm Room**

2                   PG&E wants \$738,296 in 2013 to create its Santa Maria Service Center major  
3 storm center because it claims to need additional space to accommodate employees  
4 during major storms.<sup>**131**</sup>

5                   In this general rate case, PG&E is seeking capital expenditures of \$82 million  
6 for three consolidated distribution centers. The purpose of these three centers is to  
7 consolidate the thirteen independent distribution centers provide better overview of  
8 each service territory, improve working conditions, provide more accurate and up to  
9 date distribution system information, improve disaster recovery capability, provide  
10 better customer communication, and provide a foundation for future “Smart Grid”  
11 applications.<sup>**132**</sup>

12                  DRA recommends against providing PG&E addition funding for its Santa  
13 Maria service center major storm center to accommodate more employees since this  
14 function will be accomplished in the new consolidated distribution centers.

15                                   **10. Stockton Service Center Upgrade**

16                  PG&E wants \$535,288 in 2013 to upgrade its Stockton Service Center  
17 because of overcrowding caused by gas and electric employees sharing the same  
18 space.<sup>**133**</sup>

19                  In this general rate case, PG&E is seeking capital expenditures of \$82 million  
20 for three consolidated distribution centers. The purpose of these three centers is to  
21 consolidate the thirteen independent distribution centers provide better overview of  
22 each service territory, improve working conditions, provide more accurate and up to  
23 date distribution system information, improve disaster recovery capability, provide  
24 better customer communication, and provide a foundation for future “Smart Grid”

---

<sup>**131**</sup> Exh. PG&E-4, p. WP 20-15, line 19

<sup>**132**</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>**133**</sup> Exh. PG&E-4, p. WP 20-15, line 19

1 applications.<sup>134</sup> At the time of the completion of the consolidated distribution  
2 centers, 130 positions that occupy space in the current local distribution centers will  
3 be reduced to 100 positions and these positions will be moved to the new  
4 centralized distribution centers.<sup>135</sup> Space for 130 people will be freed up at  
5 distribution centers throughout the state.

6 DRA recommends against providing PG&E addition funding for its Stockton  
7 service center until after this space is freed and taken into consideration before any  
8 new expansions are approved.

### 9 **11. Cinnabar Service Center**

10 PG&E wants \$234,016 in 2013 to upgrade its Cinnabar Service Center to  
11 build individual offices for four supervisors.<sup>136</sup>

12 In this general rate case, PG&E is seeking capital expenditures of \$82 million  
13 for three consolidated distribution centers. The purpose of these three centers is to  
14 consolidate the thirteen independent distribution centers provide better overview of  
15 each service territory, improve working conditions, provide more accurate and up to  
16 date distribution system information, improve disaster recovery capability, provide  
17 better customer communication, and provide a foundation for future “Smart Grid”  
18 applications.<sup>137</sup> At the time of the completion of the consolidated distribution  
19 centers, 130 positions that occupy space in the current local distribution centers will  
20 be reduced to 100 positions and these positions will be moved to the new  
21 centralized distribution centers.<sup>138</sup> Space for 130 people will be freed up at  
22 distribution centers throughout the state.

---

<sup>134</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>135</sup> Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

<sup>136</sup> Exh. PG&E-4, p. WP 20-15, line 23

<sup>137</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>138</sup> Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

1 DRA recommends against providing PG&E addition funding for its Cinnabar  
2 service center for supervisor offices until after the freed space is taken into  
3 consideration.

## 4 **12. Electric Distribution Buildings-Meter Reading** 5 **Upgrades**

6 PG&E wants \$196,603 in 2013 to upgrade its electric distribution buildings-  
7 meter reading space in San Francisco.<sup>139</sup>

8 In this general rate case, PG&E is seeking capital expenditures of \$82 million  
9 for three consolidated distribution centers. The purpose of these three centers is to  
10 consolidate the thirteen independent distribution centers provide better overview of  
11 each service territory, improve working conditions, provide more accurate and up to  
12 date distribution system information, improve disaster recovery capability, provide  
13 better customer communication, and provide a foundation for future “Smart Grid”  
14 applications.<sup>140</sup> At the time of the completion of the consolidated distribution  
15 centers, 130 positions that occupy space in the current local distribution centers will  
16 be reduced to 100 positions and these positions will be moved to the new  
17 centralized distribution centers.<sup>141</sup> Space for 130 people will be freed up at  
18 distribution centers throughout the state.

19 DRA recommends against providing PG&E addition funding for its electric  
20 distribution buildings for meter reading upgrades in San Francisco until after the  
21 freed space is taken into consideration.

---

<sup>139</sup> Exh. PG&E-4, p. WP 20-15, line 24

<sup>140</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>141</sup> Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

1                                   **13. Electric Distribution Buildings-Auburn Helicopter**

2                   PG&E wants \$175,357 in 2013 to perform an electric distribution buildings-  
3 Auburn helicopter hanger conversion.<sup>142</sup>

4                   In this general rate case, PG&E is seeking capital expenditures of \$82 million  
5 for three consolidated distribution centers. The purpose of these three centers is to  
6 consolidate the thirteen independent distribution centers provide better overview of  
7 each service territory, improve working conditions, provide more accurate and up to  
8 date distribution system information, improve disaster recovery capability, provide  
9 better customer communication, and provide a foundation for future “Smart Grid”  
10 applications.<sup>143</sup> At the time of the completion of the consolidated distribution  
11 centers, 130 positions that occupy space in the current local distribution centers will  
12 be reduced to 100 positions and these positions will be moved to the new  
13 centralized distribution centers.<sup>144</sup> Space for 130 people will be freed up at  
14 distribution centers throughout the state.

15                  DRA recommends against providing PG&E addition funding for its electric  
16 distribution buildings—Auburn helicopter hanger conversion until after the freed  
17 space is taken into consideration.

18                                   **14. Additional Security**

19                  PG&E wants \$1.0 million of funding to finance fencing, install card readers,  
20 security cameras, and lighting at five locations a year starting in 2013, and ten  
21 locations a year starting in 2015.<sup>145</sup>

22                  PG&E has approximately 20,000 employees who provide gas and electric  
23 service to approximately 15 million people throughout a 70,000 square mile service  
24 territory located in northern and central California. Every year PG&E performs

---

<sup>142</sup> Exh. PG&E-4, p. WP 20-15, line 27

<sup>143</sup> Exh. PG&E-4, p. WP 11-26, justification section

<sup>144</sup> Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

<sup>145</sup> Exh. PG&E-4, p. WP 20-15, lines 28-36

1 normal building upgrades throughout its service territory. These costs are normal  
2 and continuous and build into PG&E's base costs. These costs are located in every  
3 department of PG&E at all levels and cannot be separated.

4 Therefore, DRA recommend that the Commission does not provide addition  
5 funding for PG&E's electric distribution building—additional security.

6 **15. Escalation**

7 DRA modified PG&E's escalation workpapers by replacing PG&E's proposed  
8 manage buildings 2013 and 2014 capital expenditures with DRA's recommended  
9 2013 and 2014 recommended manage buildings capital expenditures for MWC 78.

10 **E. BUILD INFORMATION TECHNOLOGY APPLICATIONS AND**  
11 **INFRASTRUCTURE (MWC 2F)**

12 Table 8-25 shows PG&E's historic Build Information Technology Applications  
13 and Infrastructure (MWC 2F) capital expenditures in thousands of nominal dollars<sup>146</sup>  
14 and Table 8-26 compares DRA Recommended and PG&E Proposed Build  
15 Information Technology Applications and Infrastructure capital expenditures in  
16 thousands of nominal dollars.<sup>147</sup>

---

<sup>146</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32

<sup>147</sup> Exh. PG&E-4, p. WP 5-25, lines 14-32, and Exh. PG&E-4, WP 19-3, line 1

Planning Order	Description	Historic Capital Expenditures					
		2007	2008	2009	2010	2011	2012
5745467	MobileConnect - Ext FAS R3 to Compl Insp						\$ 7,208.0
5737190	Mobile Connect Release 3				\$ 4,991.0	\$ 15,007.0	\$ 4,065.0
5749839	Mobile Architecture Review						\$ 2,101.0
5744847	Electric Distribution Geographic Information System					\$ 2,179.0	\$ 20,554.0
5733826	Base Geographic Information System (GIS)			\$ 2,716.0	\$ 5,322.0	\$ 710.0	\$ (3,053.0)
5748459	Data Historian for Electric Distribution						\$ 579.0
5735618	Capital Asset Expense Planning Phase 2			\$ 1,050.0	\$ 3,733.0	\$ 36.0	
5736280	Pole Asset Management Back Office Integration			\$ 3,948.0	\$ 299.0		
5743701	Condition Based Maintenance Network Transformers				\$ 372.0	\$ 2,386.0	\$ 760.0
5747337	Customer Connection Online (Cap)						\$ 2,792.0
5737186	Vegetation Control Application Replacment				\$ 6,454.0	\$ 6,768.0	\$ 444.0
5744141	Emeryville Rep Tracking System					\$ 254.0	\$ 1,279.0
5741878	Load Forecasting Program Automation					\$ 1,417.0	\$ 872.0
5742218	Field Automation System Recon Device Replacement					\$ 720.0	
5746298	Smart Board for Emergency Operations					\$ 17.0	
5745181	Underground Enclosure Pilot					\$ 300.0	\$ (124.0)
5741792	Convert Alternating current to Direct Current					\$ 224.0	\$ 82.0
5742619	Work Order Fulfilment/Order Management					\$ 55.0	\$ 1.0
5733829	Enterprise Ratio Over Internet Protocol			\$ 5,884.0			\$ (8.0)
5510359	E Dist Capital Hardware/Software						\$ 336.0
5745466	Distribution Management System						\$ 1,808.0
	Build Information Technologies Applications & Infrastructure			\$ 13,598.0	\$ 21,171.0	\$ 30,073.0	\$ 39,696.0

1

Planning Order	Description	DRA Recommended			PG&E Proposed		
		2012	2013	2014	2012	2013	2014
5746811	Mobile for Division (Local HQ'd) Crews	\$ 7,208.0	\$ -	\$ -	\$ -	\$ 1,756.0	\$ 5,173.9
5745467	MobileConnect - Ext FAS R3 to Compl Insp	\$ -	\$ -	\$ -	\$ 4,700.0	\$ -	\$ -
5746812	Mobile for Distrib Substation Crews	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,031.6
5737190	MobileConnect Release 3	\$ 4,065.0	\$ -	\$ -	\$ 3,459.0	\$ -	\$ -
5749839	Mobile Architecture Review	\$ 2,101.0	\$ -	\$ -	\$ -	\$ -	\$ -
5748017	Automation of Clearance&Switch Processes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,837.6
5748011	Mobile Devices for Addl Crew Members (C)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,762.0
5748010	App Upgrade (Sycto) Pole Test&Treat	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,389.2
5748016	Mobile fr General Construction Crews(ED)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,212.7
5744847	ED-GIS (Electric)	\$ 20,554.0	\$ -	\$ -	\$ 22,200.0	\$ 32,183.5	\$ 27,804.8
5733826	Base Geographic Information System (GIS)	\$ (3,053.0)	\$ -	\$ -	\$ -	\$ -	\$ -
5746805	Data Historian for Electric Distribution	\$ 579.0	\$ -	\$ -	\$ -	\$ -	\$ 12,277.8
5746898	WrkSchd/DisptchSysEnhnce-VentyxUpgd(E&G)	\$ -	\$ -	\$ -	\$ -	\$ 9,300.0	\$ -
5746804	Outage Reporting & Analysis Sys Replace	\$ -	\$ -	\$ 3,883.8	\$ -	\$ -	\$ 4,516.1
5746814	Outage Reporting & Analysis Sys Replace	\$ -	\$ 2,802.0	\$ -	\$ -	\$ 3,258.1	\$ -
5743701	Condition Based Maintenance Network Transformers	\$ 760.0	\$ -	\$ -	\$ -	\$ -	\$ -
5747337	Customer Connection Online (Cap)	\$ 2,792.0	\$ -	\$ -	\$ 3,100.0	\$ -	\$ -
5748080	Customer Connections Online Phasell (G)	\$ -	\$ 207.8	\$ 957.8	\$ -	\$ 415.5	\$ 1,915.5
5748008	Customer Connections Online Phasell (E)	\$ -	\$ 153.0	\$ 957.8	\$ -	\$ 306.0	\$ 1,915.5
5746808	Estimator Tools Enh w/Graphic Wk Design	\$ -	\$ -	\$ 2,625.3	\$ -	\$ -	\$ 3,052.6
5746815	Estimator Tools Enh w/Graphic Wk Design	\$ -	\$ 2,562.2	\$ -	\$ -	\$ 2,979.4	\$ -
5748004	Emergency Outage Response Technology	\$ -	\$ -	\$ 2,067.8	\$ -	\$ -	\$ 2,404.4
5746899	Vegetation Control Replacement (E)	\$ 444.0	\$ 1,918.5	\$ -	\$ -	\$ 2,230.8	\$ -
5748007	Asset Risk Mgt Tool for Public Safety	\$ -	\$ -	\$ 1,260.5	\$ -	\$ -	\$ 1,465.7
5744141	Repair Tracking System RTS (Cap)	\$ 1,279.0	\$ -	\$ -	\$ 969.0	\$ -	\$ -
5741878	Load Forecasting Program Automation	\$ 872.0	\$ -	\$ -	\$ 829.1	\$ -	\$ -
5748009	SAP Prj Mgmt (PS Module)	\$ -	\$ -	\$ 430.0	\$ -	\$ -	\$ 500.0
5748079	SAP Work Mgt (PM Module) Enh (G)	\$ -	\$ 412.8	\$ -	\$ -	\$ 480.0	\$ -
5746810	SAP Work Mgt (PM Module) Enh (E)	\$ -	\$ 275.2	\$ -	\$ -	\$ 320.0	\$ -
5745181	Underground Enclosure Pilot	\$ (124.0)	\$ -	\$ -	\$ -	\$ -	\$ -
5741792	Convert Alternating current to Direct Current	\$ 82.0	\$ -	\$ -	\$ -	\$ -	\$ -
5742619	Work Order Fulfilment/Order Management	\$ 1.0	\$ -	\$ -	\$ -	\$ -	\$ -
5733829	Enterprise Ratio Over Internet Protocol	\$ (8.0)	\$ -	\$ -	\$ -	\$ -	\$ -
5510359	E Dist Capital Hardware/Software	\$ 336.0	\$ -	\$ -	\$ -	\$ -	\$ -
	Build IT Apps & Infra over \$1 million Chapter 2	\$ 37,888.0	\$ 8,331.5	\$ 12,182.9	\$ 35,257.1	\$ 53,229.3	\$ 71,259.4
	Build IT Apps & Infra under \$1 million Chapter 2	\$ -	\$ 137.6	\$ -	\$ 1,570.5	\$ 269.9	\$ -
	Total Chapter 2	\$ 37,888.0	\$ 8,469.1	\$ 12,182.9	\$ 36,827.6	\$ 53,499.2	\$ 71,259.4
5746900	Dist Mgmt System Foundation	\$ -	\$ 4,567.3	\$ -	\$ -	\$ 6,373.0	\$ -
5745466	Distribution Management System	\$ 1,808.0	\$ -	\$ 647.8	\$ 2,413.0	\$ -	\$ 904.0
	Total Chapter 11	\$ 1,808.0	\$ 4,567.3	\$ 647.8	\$ 2,413.0	\$ 6,373.0	\$ 904.0
	Build Information Technologies Applications & Infrastructure	\$ 39,696.0	\$ 13,036.4	\$ 12,830.7	\$ 39,240.6	\$ 59,872.2	\$ 72,163.4

2

1 MWC 2F is comprised of twenty-eight programs identified above. As can be  
2 seen in the tables above, PG&E's costs have been increasing at an incredible rate.  
3 PG&E started with \$13.6 million in capital expenditures in 2010, and is requesting  
4 \$72.2 million in 2014, an increase of 430% in only five years. DRA discusses each  
5 program MWC 2F in the following sections.

### 6 **1. Workforce Mobilization projects**

7 PG&E is proposing nine separate Workforce Mobilization projects for the  
8 years 2010 through 2016 which total more than \$77.5 million in capital expenditures,  
9 and \$3.6 million in expenses.<sup>148</sup> This section discusses the first eight projects listed  
10 on Table 8-26. These projects describe PG&E's ongoing approach to deploy mobile  
11 technologies to the Electric Distribution workforce and specifically focus on the 2013-  
12 2016 workforce mobilization deployment activities by crew type. PG&E intends to  
13 continue workforce mobilization efforts to leverage investments made in the core  
14 system and to improve field-based services. Mobilization technologies, combined  
15 with the technology initiatives in other areas (including grid operations, asset and  
16 records management, and design and work management work together to create a  
17 seamless interaction between energy distribution control center operations,  
18 engineering, planning and supporting functions. PG&E claims that mobile initiatives  
19 put the technologies in the hands of the workforce to deliver safe and reliable  
20 services to PG&E's customers in a streamlined and coordinated manner.<sup>149</sup>

21 PG&E has capitalized \$20 million on its workforce mobilization project to date  
22 and will not see any savings until 2013 where it claims it will receive \$2.8 million in  
23 savings, \$5.2 million in savings in 2014, and \$7.2 million in savings in 2015 and  
24 beyond.<sup>150</sup> The capital cost revenue requirement from the \$77.5 million in capital  
25 expenditures from 2010 through 2016 generates annual costs of \$11.6 million a

---

<sup>148</sup> Exh. PG&E-4, pp. WP 2-88 & WP 2-89

<sup>149</sup> Exh. PG&E-4, p. WP 2-86, Project Description section

<sup>150</sup> Exh. PG&E-4, p. WP 2-86, Project Description section

1 year, which exceeds PG&E’s claimed annual savings by \$4.4 million a year. DRA  
2 recommends that the Commission reject PG&E’s workforce mobilization program as  
3 an inefficient use of ratepayers’ funds. PG&E needs to analyze its projects to  
4 determine that only cost effective projects are requested and if necessary wait until it  
5 can make a project cost effective.

6 DRA recommends the Commission reject PG&E’s proposed Workforce  
7 Mobilization projects of \$1.8 million in 2013, and \$15.4 in 2014. In future GRCs,  
8 PG&E should demonstrate that ratepayer benefits exceed the additional cost of  
9 these projects.

## 10 **2. The Electric Distribution-Geographic Information** 11 **System (ED-GIS (Electric))**

12 PG&E forecasts expenditures of \$22.2 million in 2012, \$32.2 million in 2013,  
13 and \$27.8 in 2014, and claims that its ED-GIS project will enhance and convert  
14 PG&E’s electric distribution asset data into a centralized GIS that is integrated with a  
15 remodeled SAP asset database.<sup>151</sup> PG&E claims that the main objective for  
16 pursuing the ED-GIS project is to improve safety, compliance, and data integrity by  
17 ensuring the accuracy and accessibility of critical asset records.<sup>152</sup>

18 In Rulemaking 11-02-019, a similar program to the ED-GIS project was  
19 reviewed. PG&E requested funding for its Pipeline Records Integration Program.  
20 PG&E stated that the new system will consolidate existing record management  
21 systems into a central, integrated system that will enable PG&E to:

- 22 1. Capture, track, update, and manage specifications and maintenance  
23 data as well as all location and connectivity in two core systems;
- 24 2. Improve traceability and verification of asset data by providing links to  
25 source document;
- 26 3. Improve integrity and risk analysis, as well as better schedule  
27 inspection and maintenance;

---

<sup>151</sup> Exh. PG&E-4, p. WP 2-51, Project Description section

<sup>152</sup> Exh. PG&E-4, p. WP 2-51, Justification section

- 1           4. Provide the field work force with mobile tools that allow remote access  
2           to existing asset information, and to update electronically new  
3           maintenance and inspection information; and,  
4           5. Offer a data management platform capable of addressing any new  
5           recordkeeping obligations in the future.<sup>153</sup>

6           The Commission disallowed recovery of the Pipeline Records Integration  
7 Program stating that:

8           “As set forth below, we find that PG&E has not justified including the  
9           cost of its gas system records search and organization projects in  
10          revenue requirement. PG&E became responsible for its natural gas  
11          transmission system the day it installed facilities and equipment for the  
12          system. That responsibility includes creating and maintaining records  
13          of the location and engineering details of system components. Over  
14          the years, PG&E has sought and obtained ratepayer funding for its  
15          record-keeping functions. PG&E has imprudently managed its gas  
16          system records such that extensive remedial work is now needed to  
17          correct past deficiencies. Having created the need for this remedial  
18          work by it imprudent historic document management practices, PG&E  
19          has not shown by a preponderance of the evidence that the cost of the  
20          current document search and organization project can be included in  
21          revenue requirement and that the resulting rates will be just and  
22          reasonable.”<sup>154</sup>

23          DRA opposes PG&E’s request for supplemental ratepayer funding for  
24          addition record keeping. PG&E was responsible for its Electric Distribution facilities  
25          and equipment on the day they were installed. This responsibility includes creating  
26          and maintaining records of the location and engineering details of system  
27          components. PG&E has not shown by a preponderance of the evidence that the  
28          costs of the current document search and organization projects can be included in  
29          revenue requirement and that the resulting rates will be just and reasonable.  
30          Therefore, DRA recommends against any funding for PG&E’s ED-GIS project,  
31          including any funding for capital assets spent in 2012.

---

<sup>153</sup> D. 12-12-030, pp. 19 & 20

<sup>154</sup> D. 12-12-030, p. 87

1                                   **3. Data Historian for Electric Distribution**

2                   PG&E uses data historian software applications to provide central data  
3   archiving and analysis for time series data from PG&E’s Supervisory Control and  
4   Data Acquisition (SCADA) system. PG&E’s SCADA system measures several  
5   parameters, such as current flow, voltage, equipment status and abnormal  
6   conditions, at DCADA device locations. The data historian stores this data and  
7   provides basic tools to analyze and download the data to identify trends, support  
8   analysis of historical events and anticipate potential problems. This proposed  
9   project will replace the current PG&E historian with a commercially available and  
10   industry standard data historian application. This application will provide PG&E with  
11   event analysis and engineering and planning functions with more granular data and  
12   more powerful analytical tools to meet current and future needs.<sup>155</sup>

13               PG&E plans to spend \$24.2 million on its Data Historian for Electric  
14   Distribution program between 2014 through 2016. PG&E failed to demonstrate that  
15   the benefits to ratepayers exceed the cost of this new data historian for electric  
16   distribution program. Without a demonstration of ratepayer benefits that exceed the  
17   costs of this program, the only impact to ratepayers from this project is additional  
18   costs.

19               DRA recommends the Commission reject PG&E’s Data Historian for Electric  
20   Distribution program until PG&E demonstrates that ratepayer benefits exceed the  
21   additional cost of this program.

22                                   **4. Work Scheduling and Dispatch System**  
23                                   **Consolidation Project**

24               PG&E currently uses a combination of scheduling tools including FAS, other  
25   scheduling systems, Excel spreadsheets and various manual tracking methods to  
26   track work, access availability of work crews, schedule required work and dispatch it  
27   to the crews based on availability and fit of the crew to the required work. PG&E  
28   wants to move away from manually intensive and non-integrated tools and develop a

---

<sup>155</sup> Exh. PG&E-4, p. WP 2-27, Project Description section

1 scheduling system that can look across all field crews, make real-time availability  
2 and resourcing decisions, and supply field crews with the electronic records needed  
3 to perform the work.<sup>156</sup>

4 PG&E plans to spend \$9.3 million on its Work Scheduling and Dispatch  
5 System Consolidation project in 2013. PG&E failed to demonstrate that the benefits  
6 to ratepayers exceed the cost of this new data Work Scheduling and Dispatch  
7 System Consolidation project. Without a demonstration of ratepayer benefits that  
8 exceed the costs of this program, the only impact to ratepayers from this project is  
9 additional costs.

10 DRA recommends the Commission reject PG&E's Work Scheduling and  
11 Dispatch System Consolidation program until PG&E demonstrates that ratepayer  
12 benefits exceed the additional cost of this program.

## 13 **5. Outage Reporting & Analysis System** 14 **Replacement**

15 PG&E is dependent on legacy tools and manual processes to record outage  
16 data and monitor and report reliability metrics. PG&E intends to replace the existing  
17 tools and processes with a more automated solution that performs better and allows  
18 better outage analysis. These projects will incorporate newly available SmartMeter  
19 and SCADA data and improve integration with other PG&E systems. The new  
20 solution will reduce the complexities currently faced in generating outage reports  
21 from legacy systems/databases and also leverage reporting functionality from the  
22 new Distribution Management System.<sup>157</sup>

23 Reliability metrics (SAIDI, SAIFI, MAIFI, etc.) must be reported annually to the  
24 CPUC. Outage data is utilized by many departments within PG&E, including Electric  
25 Operations, Customer Care, Regulatory Relations, and others. Electric distribution  
26 planning engineers use outage data to spot trends and take proactive action to  
27 improve reliability, and perform root cause analysis using historical outage data.

---

<sup>156</sup> Exh. PG&E-4, p. WP 2-94, Project Description section

<sup>157</sup> Exh. PG&E-4, p. WP 2-31, Project Description section

1 Historically, PG&E’s outage reporting functions has used field reports and customer  
2 calls to manually calculate the number of customers affected as a result of damaged  
3 equipment. In the absence of actual customer-level outage data, engineers have  
4 used network connectivity models and customer assignments to derive reliability  
5 outage data, engineers have used network connectivity models and customers  
6 assignments to derive reliability metrics such as SAIDI and SAIFI.<sup>158</sup>

7 Consistent with the recommendations in Exh. DRA-18, DRA decreases all cost  
8 estimates generated using PG&E’s Concept Estimator tool to reduce costs by 14%.  
9 While PG&E’s Proposed 2013 and 2014 capital expenditures will allow PG&E to  
10 make more accurate reliability metric reports to the Commission, DRA adjusted  
11 PG&E’s concept estimator tool calculated costs to remove excessive costs. DRA  
12 recommends that the commission allow outage reporting and analysis system  
13 replacement costs of \$2.8 million in 2013 and \$3.9 million in 2014.

#### 14 **6. Customer Connections Online**

15 PG&E intends to enhance the customer experience by improving the tools  
16 used by customers to create and track service requests. PG&E noted that  
17 deficiencies with the New Business Process (i.e. installing new gas and electric  
18 services, modifying existing service points, communications, and predictability of  
19 work timing) were key sources of dissatisfaction for customers. In addition, given  
20 today’s environment of consumer-friendly technologies and 24/7 online access to  
21 information, PG&E services has not lived up to customer expectations to have  
22 electronic information “at their fingertips”.<sup>159</sup>

23 Consistent with DRA’s recommendation in Exh. DRA-5, DRA provides 50% of  
24 the funding to PG&E’s customer connection online tools.

---

<sup>158</sup> Exh. PG&E-4, p. WP 2-31, Justification section

<sup>159</sup> Exh. PG&E-4, p. WP 2-81, Project Description section

1                                   **7. Estimator Tools Enhanced with Graphic Work**  
2                                   **Design**

3                   PG&E proposes capital expenditures of \$3.0 million in 2013, and \$3.0 million  
4 in 2014 to replace its current construction design and estimating toolset with more  
5 modern, integrated and graphics-based construction visualization and estimation  
6 software. PG&E states that these modern tools can significantly improve design and  
7 construction consistency and efficiency across construction projects, in addition to  
8 integrating with the new Electric Distribution Geographic Information System/Asset  
9 Management (ED GIS/AM) solution.<sup>160</sup>

10                  PG&E feels that the work design tools currently in use need to be improved  
11 and that this initiative is expected to yield significant benefits beginning in 2016  
12 following widespread tool deployment and stabilization.<sup>161</sup>

13                  While DRA is recommending against PG&E's Electric Distribution Geographic  
14 Information System/Asset Management because PG&E should already maintain  
15 documentation with information about the location of all of its assets, DRA agrees  
16 that modern design tools will improve PG&E's ability to design estimate projects and  
17 will save PG&E's ratepayers money in the long run. Consistent with the  
18 recommendations in Exh. DRA-18, DRA will decrease PG&E's estimator tool  
19 enhanced with graphic work design by 14%. DRA recommends that the  
20 Commission allow estimator tools enhanced with graphic work design costs of \$2.6  
21 million in 2013 and \$2.6 million in 2014

22                                   **8. Emergency Outage Response Technology**

23                  PG&E is taking a number of steps to improve its ability to respond to  
24 emergency conditions. This project seeks to improve PG&E's ability to assemble  
25 crews, to manage and coordinate response and restoration resources, and to  
26 develop plans and communicate information internally and externally regarding

---

<sup>160</sup> Exh. PG&E-4, p. WP 2-62, Project Description section

<sup>161</sup> Exh. PG&E-4, p. WP 2-62, Justification section and p. WP 2-65, Cost and Non-Cost Benefits section

1 emergency operations.<sup>162</sup> This project will implement a 3<sup>rd</sup> party solution for  
2 automated callout of electric and gas crew resources eliminating the current time  
3 consuming, labor intensive, manual telephone dialing and paper-based tracking.  
4 The solution will streamline the crew call-out process, and shorten the time required  
5 to assemble a crew and respond to unplanned emergencies and outages outside  
6 normal business hours.<sup>163</sup>

7 After DRA's 14% adjustment for costs generated using PG&E's concept  
8 estimator tool, DRA agrees that an automated streamlined process for responding to  
9 emergency outages will improve PG&E's ability to get its system operating faster  
10 during emergencies. DRA recommends capital expenditures of \$2.1 million in 2014  
11 and that PG&E be allowed to implement its new Emergency Outage Response  
12 Technology project.

### 13 **9. Vegetation Control Application Replacement**

14 This project will develop a mobile application in support of Vegetation Control  
15 work processes. It will configure and deploy a new Vegetation Control Application  
16 on new Panasonic HI mobile computers. This project will also replace the legacy  
17 Vegetation Control Mobile Devices, as the devices and parts are no longer available  
18 (the current devices have been in service for approximately 15 years). PG&E will  
19 replace the devices in order to avoid the risk of failure of the legacy devices which  
20 would increase costs and also result in the need to perform manual, less efficient,  
21 paper-based inspections. The new mobile platform and devices will provide field  
22 verified asset into the GIS system in addition to paperless workflow process and  
23 wireless data transfer. This project is a natural extension of the recently completed  
24 Vegetation Management Mobilization project.<sup>164</sup>

---

<sup>162</sup> Exh. PG&E-4, p. WP 2-22, Project Description section

<sup>163</sup> Exh. PG&E-4, p. WP 2-22, Justification section

<sup>164</sup> Exh. PG&E-4, p. WP 2-102, Project Description section

1 With the exception of DRA's 14% adjustment to costs generated using PG&E  
2 concept estimator tool, DRA recommends that PG&E be authorized 2013 costs of  
3 \$1.9 million for its Vegetation Control replacement program.

#### 4 **10. Asset Risk Management Tool for Public Safety**

5 PG&E is pursuing a risk-based asset management strategy to enhance public  
6 and system safety. This strategy will identify and prioritize public and system safety  
7 risks, develop an investment strategy based on prioritized risks, and incorporate  
8 findings into future system upgrades and corrective maintenance activities.<sup>165</sup>

9 With the exception of DRA's 14% adjustment for PG&E's concept estimator  
10 tool, DRA recommends that PG&E be authorized 2014 costs of \$1.3 million for its  
11 asset risk management tool for public safety.

#### 12 **11. SAP Work Management**

13 The SAP plant maintenance module is the work management platform for gas  
14 and electric operations. Employees use this module to create work orders, enter  
15 purchase orders, request parts, manage assemblies, plan and schedule work, and  
16 close out work orders. PG&E is in the process of bringing different departments  
17 onto the SAP platform to more fully utilize the module's functionalities and phase out  
18 disparate, paper-based work order management processes.<sup>166</sup>

19 With the exception of DRA's 14% adjustment for PG&E's concept estimator  
20 tool, DRA recommends that PG&E be authorized 2013 costs of \$688,000 and 2014  
21 costs of \$430,000 for its SAP work management programs.

---

<sup>165</sup> Exh. PG&E-4, p. WP 2-57, Project Description section

<sup>166</sup> Exh. PG&E-4, p. WP 2-70, Project Description section

1                   **12. Build IT projects under \$1 million**

2                   In 2013, PG&E is seeking \$269,000 in Build IT projects under \$1 million.  
3 PG&E is including two projects in this category. SAP work for \$160,000,<sup>**167**</sup> and  
4 customer connection work for \$109,000.<sup>**168**</sup> Both of these projects were discussed  
5 previously in this section. Customer connection work was removed in Exh. DRA-5  
6 and is also removed in this exhibit to be consistent. SAP work was allowed after a  
7 14% decrease consistent with DRA’s testimony in Exh. DRA-18.

8                   **13. Distribution Management System**

9                   The 13 existing control centers currently use approximately 1,500 linear feet  
10 of paper wall maps. To provide the operational flexibility and disaster recovery  
11 capabilities intended as part of DCC consolidation while continuing to operate off  
12 paper maps is not practical. Electronic wall mapping is a necessary component of  
13 the DCC project. Electronic wall mapping gives the operators shared access to  
14 network information, enables wider geographical jurisdiction, improves process  
15 efficiency, and reduce manual processes.<sup>**169**</sup>

16                   PG&E’s electronic wall mapping application estimate was created using a  
17 combination of inputs: 1) PG&E’s Concept Estimator tool; 2) a previous project  
18 estimate for the development of an electronic wall mapping system at PG&E; and 3)  
19 quotes for project components from the vendor.<sup>**170**</sup>

20

---

<sup>**167**</sup> Exh. PG&E-4, p. WP 2-13, line 34

<sup>**168**</sup> Exh. PG&E-4, p. WP 2-15, line 48

<sup>**169**</sup> Exh. PG&E-4, p. WP 11-26

<sup>**170**</sup> Exh. PG&E-4, p. WP 11-29

1           DRA has reviewed PG&E's cost estimates and made two adjustments. DRA  
2 removed 1) a 20% high project complexity contingency fee added by PG&E;<sup>171</sup> and,  
3 2) DRA decreased the remaining costs by 14% to remove the excessive costs that  
4 are included in the costs calculated using PG&E's Concept Estimator tool that are  
5 identified in Exh. DRA-18.

---

<sup>171</sup> Exh. PG&E-4, p. WP 11-22, line 53