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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

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ELECTRIC DISTRIBUTION CAPITAL EXPENDITURES

I. INTRODUCTION

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

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

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

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

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[1] Exh. PG&E-4, p. 1-17, lines18-25

[2] Exh. PG&E-4, p. 10-15, lines 10-13

[3] Exh. PG&E-4, p. 10-18, lines 7-10

- **Distribution Substation Emergency Equipment Replacement** (MWC 59)—the goal of the Distribution Substation Emergency Equipment Replacement Program is to safely and timely replace substation equipment that fails or is forced out of service.[4]

- **Electric Distribution-Safety, Maintenance and Compliance**—PG&E forecasts the largest increased levels of work in this area to address aging infrastructure and identified key public risk initiatives.[5]
  - **Distribution Substation Safety** (MWC 58)—this Major Work Code is comprised of four subprograms (1) safety; (2) security; (3) fire protection; and (4) seismic activity. Capital expenditures include the replacement or upgrades of substation fences, security cameras and car readers, fire suppression systems, and seismic retrofits to control buildings.[6]
  - **Install and Replace Overhead** (MWC 2A)—this program provides installs and replacements of critical overhead operating equipment.[7]
  - **Install and Replace Underground** (MWC 2B)—this program provides installs and replacements of critical underground operating equipment.[8]
  - **Install and Replace Network** (MWC 2C)—this program provides installs and replacements of critical network operating equipment.[9]

- **Electric Distribution-Operations, Automation and Support**—in this area capital costs are increasing for improved records management.[10]
  - **Capital Tools and Equipment** (MWC 05)—includes the costs of miscellaneous tools and equipment to support distribution and

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[4] Exh. PG&E-4, p. 13-17, lines 4-7

[5] Exh. PG&E-4, p. 1-21, lines 12-14

[6] Exh. PG&E-4, p. 13-16, lines 22-26

[7] Exh. PG&E-4, p. 5-34, lines 1-7

[8] Exh. PG&E-4, p. 5-34, lines 1-7

[9] Exh. PG&E-4, p. 5-34, lines 1-7

[10] Exh. PG&E-4, p. 1-22, lines 6-8

generation work,[11] operations maintenance and construction work, and overdrawn material.[12]

- **Distribution Automation and Protection** (MWC 09)—costs include (1) Emergency Equipment Replacement, (2) Substation Automation, and (3) Line Automation.[13]
- **Distribution Control Center** (MWC 63D)—construction of a new central facility and either purchasing, constructing, or leasing two satellite facilities.[14]
- **Manage Buildings** (MWC 78)—PG&E uses MWC 78 for costs related to managing building facilities.[15]
- **Build Information Technology Applications and Infrastructure** (MWC 2F)—PG&E created MWC 2F to improve central tracking of significant IT efforts. In prior years, IT spending was embedded in different shared MWCs and line of business MWCs.[16]

- **Electric Distribution-Work Efficiency**—electric operations plan to improve affordability through a variety of work efficiency initiatives. Through its process of continuous improvements, electric operations expect to find more efficient methods for doing work and thereby reduce capital costs for customers. The electric operations improvement plan demonstrates this commitment to improving affordability through its goal to absorb escalation for the years 2012 to 2015.[17]

[11] Exh. PG&E-4, p. 3-9. Lines 4-6

[12] Exh. PG&E-4, p. 20-5, lines 2-6

[13] Exh. PG&E-4, p. 17-8, lines 1-14

[14] Exh. PG&E-4, p. 11-12, lines 18-19

[15] Exh. PG&E-4, p. 20-6, lines 7-9

[16] Exh. PG&E-4, p. 2-8, lines 14-17

[17] Exh. PG&E-4, pp. 1-12 – 1-13, lines 31-3

II. SUMMARY OF RECOMMENDATIONS

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

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

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

Table 8-1
Pacific Gas & Electric 2014 GRC
Comp of DRA Rec and PG&E Prop Electric Distribution
Nominal $000

Description	MWC	DRA Recommended 2012	DRA Recommended 2013	DRA Recommended 2014	PG&E Proposed 2012	PG&E Proposed 2013	PG&E Proposed 2014
Elect Dist-Emergency Response							
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
ElectDist-SafetyMaintenanceand Compliance							
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
Elect Dist-Operations,Automation and Support							
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

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

III. GENERAL OVERVIEW

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

Table 8-2 shows PG&E's recorded historical Distribution Capital costs in nominal dollars.[19]

[18] 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

[19] 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
Elect Dist-Emergency Response							
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
ElectDist-SafetyMaintenanceand Compliance							
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
Elect Dist-Operations,Automation and Support							
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
Total		$ 224,673.9	$ 263,241.0	$ 288,066.4	$ 344,043.0	$ 444,066.1	$ 467,432.2

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

[20] 2007 Total Capital Expenditures $224.7 million * 15% = $33.6 million

[21] $33.6 million divided by 15 million customers = approximately $2 per customer.

IV. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION-EMERGENCY RESPONSE

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

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

A. ROUTINE EMERGENCIES (MWC 17)

Table 8-3 shows PG&E's historic Routine Emergencies capital expenditures in thousands of nominal dollars[22] and Table 8-4 compares DRA Recommended and PG&E Proposed Routine Emergencies capital expenditures in thousands of nominal dollars.[23]

Table 8-3
Pacific Gas & Electric 2014 GRC
Historic Routine Emergencies Capital Expenditures--MWC 17
Nominal $000

	Historic Capital Expenditures					
Description	**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

[22] 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

[23] 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

Table 8-4
Pacific Gas & Electric 2014 GRC
Comp of DRA Rec and PG&E Prop Routine Emergencies --MWC 17
Nominal $000

Description	DRA Recommended 2012	DRA Recommended 2013	DRA Recommended 2014	PG&E Proposed 2012	PG&E Proposed 2013	PG&E Proposed 2014
Routine Emergincies 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
Routine Emergencies Capital Expenditures	$ 137,762.8	$ 110,353.7	$ 110,105.4	$ 119,410.0	$ 119,791.0	$ 119,522.0

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

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

[24] Exh. PG&E-4, p. 10-5, lines 14-16

[25] Exh. PG&E-4, p. WP 10-19, Footnote 2, line 13

[26] 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,[27] and Table 8-6 compares DRA Recommended and PG&E Proposed Major Emergencies capital expenditures in thousands of nominal dollars.[28]

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 2012	2013	2014	PG&E Proposed 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.[29] 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.[30] PG&E also adjusts its base capital expenditures by escalation to place prior year dollars into future nominal dollars.

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[27] 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

[28] 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

[29] Exh. PG&E-4, p. 10-6, lines 1-17

[30] Exh. PG&E-4, p. WP 10-20, Footnote 2, line 13

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

C. DISTRIBUTION SUBSTATION EMERGENCY EQUIPMENT REPLACEMENT (MWC 59)

Table 8-7 shows PG&E's historic Distribution Substation Emergency Equipment Replacement capital expenditures in thousands of nominal dollars[31] and Table 8-8 compares DRA Recommended and PG&E Proposed Distribution Substation Emergency Equipment Replacement capital expenditures in thousands of nominal dollars.[32]

Table 8-7
Pacific Gas & Electric 2014 GRC
Historic Distribution Substation Emergency Equipment Replacement Capital Expenditures--MWC 59
Nominal $000

	Recorded Capital Expenditures					
Description	**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

Table 8-8
Pacific Gas & Electric 2014 GRC
Comparision of DRA Recommended and PG&E Proposed Distribution Substation Emergency Equipment Replacement --MWC 59
Nominal $000

	DRA Recommended			PG&E Proposed		
Description	**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

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

[31] 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

[32] 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

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

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

V. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION-SAFETY, MAINTENANCE AND COMPLIANCE

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

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

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[33] Exh. PG&E-4, p. 13-17, lines 5-7

[34] Exh. PG&E-4, p. WP 13-127, section entitled Cost Assumptions

A. DISTRIBUTION SUBSTATION SAFETY (MWC 58)

Table 8-9 shows PG&E's historic Distribution Substation Safety capital expenditures in thousands of nominal dollars[35] and Table 8-10 compares DRA Recommended and PG&E Proposed Distribution Substation Safety capital expenditures in thousands of nominal dollars.[36]

Table 8-9
Pacific Gas & Electric 2014 GRC
Historic Distribution Substation Safety Capital Expenditures--MWC 58
Nominal $000

	Recorded Capital Expenditures					
Description	**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

Table 8-10
Pacific Gas & Electric 2014 GRC
Comp of DRA Rec and PG&E Prop Distribution Substation Safety --MWC 58
Nominal $000

	DRA Recommended			PG&E Proposed		
Description	**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

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

[36] 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

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

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

1. Seismic

According to PG&E, the unit cost forecast 2014 through 2016 is $1.3 million, which will allow PG&E to complete seismic work on one selected distribution substation per year.[39] PG&E estimated the same seismic capital expenditures for 2013 as well.

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

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[37] Exh. PG&E-4, p. 13-16, lines 23-24

[38] PG&E's response to data request DRA-PG&E-038-MKB, Q. 3

[39] Exh. PG&E-4, p. WP 13-37, Cost Assumption section

[40] PG&E's response to data request DRA-PG&E-038-MKB, Q. 8.a.

[41] PG&E's response to data request DRA-PG&E-038-MKB, Q. 8.c.

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

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

2. Fire Protection Suppression

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

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

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[42] Exh. PG&E-4, p. WP 13-36, Cost Assumption section

[43] PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.h.

[44] PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.b.

Embarcadero substations) but has not identified any 2014-2016 fire protection suppression projects.[45]

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

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

3. Security

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

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[45] PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.h.

[46] PG&E's response to data request DRA-PG&E-038-MKB, Q. 7.h.

[47] Exh. PG&E-4, p. WP 13-39, Cost Assumptions section

[48] PG&E's response to data request DRA-PG&E-038-MKB, Q. 9.h.

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

4. Safety

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

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

5. Escalation

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

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[49] PG&E's response to data request DRA-PG&E-038-MKB, Q. 9.h.

[50] Exh. PG&E-4, p. WP 13-41, Cost Assumptions section

[51] PG&E's response to data request DRA-PG&E-038-MKB, Q. 10.a.

B. INSTALL AND REPLACE OVERHEAD (MWC 2A)

Table 8-11 shows PG&E's historic Install and Replace Overhead capital expenditures in thousands of nominal dollars[52] and Table 8-12 compares DRA Recommended and PG&E Proposed Install and Replace Overhead capital expenditures in thousands of nominal dollars.[53]

Table 8-11
Pacific Gas & Electric 2014 GRC
Historidnstalland ReplaceOverheadCapitalExpenditures--MWC2A
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

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

[53] 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

Table 8-12
Pacific Gas & Electric 2014 GRC
Comp of DRA Rec and PG&E Prop Install and Replace Overhead --MWC 2A
Nominal $000

Description	DRA Recommended 2012	DRA Recommended 2013	DRA Recommended 2014	PG&E Proposed 2012	PG&E Proposed 2013	PG&E Proposed 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
Install and Replace Overhead	$ 91,661.0	$ 75,657.1	$ 58,377.2	$ 93,448.2	$ 108,678.5	$ 127,086.3

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

1. Total Cost of Overhead Notifications

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

[54] Exh. PG&E-4, p. WP 5-25. Lines 13-30, and Exh. PG&E-4, p. 19-1

[55] Exh. PG&E-4, p. 5-3 through 5-5, lines 27-13

objective was to complete newly identified notifications for abnormal conditions within 12 month. Thereafter, PG&E's forecast for 2014 and beyond would be for newly identified work to preserve a steady flow.[56]

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

2. Total Cost of Overhead Critical Operating Equipment (COE) Notifications

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

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

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[56] Exh. PG&E-4, p. 5-18, lines 4-10

[57] Exh. PG&E-4, pp. 5-18 & 5-19, lines 20-2

[58] PG&E's response to data request DRA-PG&E-040-MKB, Q. 6.a.

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

3. Total Cost of Bird Safe and Bird Retrofit Notifications

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

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

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

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[59] Exh. PG&E-4, p. 5-20, lines 3-14

[60] Exh. PG&E-4, p. WP 5-10, line 4

4. Idle Facilities Removal

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

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

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

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[61] Exh. PG&E-4, p. 5-36, lines 12-19

[62] Exh. PG&E-4, p. 5-21, lines 9-12

[63] PG&E's response to data request DRA-PG&E-040-MKB, Qs 12.c. & 12.d.

[64] PG&E's response to data request DRA-PG&E-040-MKB, Q. 12.g.

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

5. Major Notifications

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

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

6. SF Incandescent Streetlights

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

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[65] Exh. PG&E-4, p. WP 5-25, footnote 6

transformers and cable for streetlight facilities primarily located in San Francisco. PG&E claims that the replacement work will begin in 2012 and will end in 2014.[66]

PG&E based its estimate of $18,421 per light replaced, on a 2009 project where PG&E replace 19 lights. PG&E also expects to change over almost 400 lights per year.[67] In 2012, PG&E only changed 22 lights.[68]

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

7. Permit Updates

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

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

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[66] Exh. PG&E-4, p. 5-37, lines 3-15

[67] Exh. PG&E-4, p WP 5-30, Cost Assumption section

[68] PG&E's response to data request DRA-PG&E-213-MKB, Q. 2.d.

[69] PG&E's response to data request DRA-PG&E-040-MKB, Q. 11.a.

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

8. Infrared Reconductor and Infrared Switch Replacement

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

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

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

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[70] Exh. PG&E-4, p 5-36, lines 21-29C

[71] PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.a.i.

[72] PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.a.iii.

[73] PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.b.i.

[74] PG&E's response to data request DRA-PG&E-040-MKB, Q. 14.e & f

9. Escalation

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

10. LED Streetlight Replacement

PG&E owns, operates and maintains approximately 160,000 non-decorative High Pressure Sodium Vapor streetlights under Electric Rate Schedule LS-1.[75]

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

C. INSTALL AND REPLACE UNDERGROUND (MWC 2B)

Table 8-13 shows PG&E's historic Install and Replace Underground capital expenditures in thousands of nominal dollars[76] and Table 8-14 compares DRA Recommended and PG&E Proposed Install and Replace Underground capital expenditures in thousands of nominal dollars.[77]

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[75] Exh. PG&E-4, p. 19-1, lines 11-13

[76] Exh. PG&E-4, p. WP 5-25, lines 14-32

[77] 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						
	Historic Capital Expenditures					
Description	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)	$ -
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						
	DRA Recommended			PG&E Proposed		
Group	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
Excalation	$ -	$ 492.8	$ 567.3	$ -	$ 961.4	$ 1,206.7
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.[78] 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.[79]

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

[78] Exh. PG&E-4, p. 13-16, lines 23-24

[79] Exh. PG&E-4, p. 5-35, lines 22-26

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

2. Total Cost of Underground COE Notifications

Underground COE notifications and handled in the same manner as the overhead COE notifications. In addition, the forecasting method is the same.[80]

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 of $8.8 million. DRA agrees with this three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded its forecasted 2012 expenditures, and because DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA recommends capital expenditures of $5.9 million for 2012, $1.4 million for 2013, and $1.4 million for 2014.

3. Major Notifications

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

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[80] Exh. PG&E-4, pp. 5-35 and 5-36, lines 27-2

[81] Exh. PG&E-4, p. WP 5-27, footnote 4

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 of $9.7 million. DRA agrees with this three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded its forecasted 2012 expenditures, and because DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA recommends capital expenditures of $5.2 million for 2012, $2.3 million for 2013, and $2.3 million for 2014.

4. Underground Oil Switch Replacements

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

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

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

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[82] Exh. PG&E-4, p. WP 5-38, justification section

[83] Exh. PG&E-4, p. WP 5-39, cost assumption section

[84] PG&E's response to data request DRA-PG&E-041-MKB, Q. 8.a.ii.

[85] PG&E's response to data request DRA-PG&E-041-MKB, Q. 8.a.iii.

[86] PG&E's response to data request DRA-PG&E-041-MKB, Q. 8.e & f

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

5. Escalation

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

D. INSTALL AND REPLACE NETWORK (MWC 2C)

Table 8-5 shows PG&E's historic Install and Replace Network capital expenditures in thousands of nominal dollars[87] and Table 8-16 compares DRA Recommended and PG&E Proposed Install and Replace Network capital expenditures in thousands of nominal dollars.[88]

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

[87] Exh. PG&E-4, p. WP 5-25, lines 14-32

[88] 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 2012	DRA Recommended 2013	DRA Recommended 2014	PG&E Proposed 2012	PG&E Proposed 2013	PG&E Proposed 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
Install and Replace Networks	$ 17,336.0	$ 14,807.7	$ 14,058.5	$ 19,576.9	$ 17,858.8	$ 19,612.7

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

1. Total Cost of Network Transformers and Protector Replacements;

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

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

[89] Exh. PG&E-4, p. 13-16, lines 23-24

[90] Exh. PG&E-4, p. 5-38, lines 20-29

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

2. Total Costs of Network Swivelok Manhole Cover Replacement

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

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 of $13.3 million. DRA agrees with this three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded its forecasted 2012 expenditures, and because DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA recommends capital expenditures of $5.5 million for 2012, $3.9 million for 2013, and $3.9 million for 2014 for PG&E's network Swivelok manhole cover replacement project.

[91] Exh. PG&E-4, p. 5-39, lines 8-19

3. Total Cost of Network Protector Relay Replacement

PG&E states that its network protectors are replaced at the same time as the network transformers since the equipment has a similar life span. PG&E's network protectors are, in general, older that the transformers on the system due to a Polychlorinated Biphenyls replacement program that occurred for the transformers in the 1980s.[92]

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

4. SCADA Safety Monitoring Project

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

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 of $15.3 million. DRA agrees with this three-year total amount. Since PG&E's actual 2012 capital expenditures exceeded its forecasted 2012 expenditures, and because DRA accepts the 2012 actual expenditures, DRA adjusted its 2013 and 2014 forecast so that DRA's 3-year total from 2012-2014 equals PG&E's forecasted 3-year total. Therefore, DRA recommends capital expenditures of $7.1 million for 2012, $4.1 million for 2013, and $4.1 million for 2014 for PG&E's SCADA safety monitoring project.

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[92] Exh. PG&E-4, p. 5-38, lines 27-32

[93] Exh. PG&E-4, p. 5-38, lines 9-18

5. Condition Based Maintenance (CBM) Project

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

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

6. Fiber Optics/SCADA-Existing System Capital

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

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

7. Escalation

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

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[94] Exh. PG&E-4, pp. 5-38 & 5-39, lines 20-4

[95] PG&E's response to data request DRA-PG&E-043-MKB, Q. 8.c

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

A. CAPITAL TOOLS AND EQUIPMENT (MWC 05)

Table 8-17 shows PG&E's historic Capital Tools and Equipment capital expenditures in thousands of nominal dollars[96] and Table 8-18 compares DRA Recommended and PG&E Proposed Capital Tools and Equipment capital expenditures in thousands of nominal dollars.[97]

Table 8-17
Pacific Gas & Electric 2014 GRC
Historic Capital Tools and Equipment Capital Expenditures--MWC 5
Nominal $000

	Historic Capital Expenditures					
Description	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)

Table 8-18
Pacific Gas & Electric 2014 GRC
Comp of DRA Rec and PG&E Prop Capital Tools and Equipment --MWC 5
Nominal $000

	DRA Recommended			PG&E Proposed		
Description	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)

MWC 5 is comprised of three subprograms: (1) Tools & Equipment, Chapter 3; (2) Tools & Equipment, Chapter 20; and, (3) Material Overdraw.[98] DRA will discuss the remaining cost element of MWC 5 in the following sections.

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[96] Exh. PG&E-4, WP 5-25, lines 14-32

[97] Exh. PG&E-4, WP 5-25, lines 14-32, and Exh. PG&E-4, WP 19-3, line 1

[98] Exh. PG&E-4, p. 13-16, lines 23-24

1. Tools & Equipment—Chapter 3

MWC 05 includes the cost of miscellaneous tools and equipment to support distribution and generation work. For PG&E's Applied Technology Service center, capital expenditures in MWC 05 are needed to ensure that employees performing field and laboratory tests have appropriate tools and test equipment. Regular expenditures are necessary to replace damaged, worn out, or obsolete tools and to ensure specialized tools are available to perform testing and other analytical functions.[99]

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

2. Tools and Equipment—Chapter 20

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

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

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[99] Exh. PG&E-4, p. 3-9, lines 1-11

[100] Exh. PG&E-4, p. 20-5, lines 7-18

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

3. Material Overdrawn—Chapter 20

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

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

B. DISTRIBUTION, AUTOMATION AND PROTECTION (MWC 09)

Table 8-19 shows PG&E's historic Distribution Automation and Protection capital expenditures in thousands of nominal dollars[102] and Table 8-20 compares DRA Recommended and PG&E Proposed Distribution Automation and Protection capital expenditures in thousands of nominal dollars.[103]

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[101] Exh. PG&E-4, pp. 20-5 & 20-6, lines 21-3

[102] Exh. PG&E-4, p. WP 5-25, lines 14-32

[103] 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						
	Historic Capital Expenditures					
Description	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

Table 8-20 Pacific Gas & Electric 2014 GRC Comp of DRA Rec and PG&E Prop Distribution Automation and Protection --MWC 9 Nominal $000						
	DRA Recommended			PG&E Proposed		
Description	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

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

1. Installation of Substation SCADA

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

[104] Exh. PG&E-4, p. 13-16, lines 23-24

Safety; (2) Reliability; (3) Remote operational control of substation equipment; and, (4) Implementation of current and anticipated Smart Grid technologies.[105]

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

2. Installation of Feeder SCADA

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

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

3. Replacement Substation SCADA

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

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[105] Exh. PG&E-4, pp. 17-9 through 17-11, lines 23-21

[106] Exh. PG&E-4, pp. 17-15 through 17-16, lines 29-2

no longer be obtained. In addition, the software used to configure the legacy RTUs is no longer supported.[107]

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

4. Replacement of Feeder SCADA

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

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

5. Fire Risk Management (FRM)

This program consists of the installation of SCADA capability to remotely control equipment on key substation feeder breakers and line reclosers as well as control software to invoke special equipment settings during high fire periods.[109]

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

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[107] Exh. PG&E-4, p. 17-14, lines 1-13

[108] Exh. PG&E-4, WP 17-16, lines 23-29

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

6. Replacement of Substation Protective Relays

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

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

7. Emergency Equipment Replacement

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

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(Continued from previous page)

[109] Exh. PG&E-4, p. 17-17, lines 10-17

[110] Exh. PG&E-4, p. 17-15, lines 1-10

included in MWC 9 covers the replacement of failed RTUs, peripheral boards and protective relays.[111]

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

8. Escalation

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

C. DISTRIBUTION CONTROL CENTER (MWC 63D)

Table 8-21 shows PG&E's historic Distribution Control Center capital expenditures in thousands of nominal dollars[112] and Table 8-22 compares DRA Recommended and PG&E Proposed Distribution Control Center capital expenditures in thousands of nominal dollars.[113]

Table 8-21
Pacific Gas & Electric 2014 GRC
Historic Distribution Control Center Capital Expenditures--MWC 63
Nominal $000

	Historic Capital Expenditures					
Description	**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

[111] Exh. PG&E-4, p. 17-9, lines 1-7

[112] Exh. PG&E-4, WP 5-25, lines 14-32

[113] 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						
	DRA Recommended			PG&E Proposed		
Description	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

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

1. Distribution Control Center Consolidation

In this general rate case, PG&E is seeking capital expenditures of $82 million for three consolidated distribution centers. The purpose of these three centers is to consolidate the thirteen independent distribution centers to provide better overview of each service territory, improve working conditions, provide more accurate and up to date distribution system information, improve disaster recovery capability, provide better customer communication, and provide a foundation for future "Smart Grid" applications.[115]

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

2. Escalation

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

[114] Exh. PG&E-4, p. 13-16, lines 23-24

[115] Exh. PG&E-4, p. WP 11-26, justification section

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

D. MANAGE BUILDING (MWC 78)

Table 8-23 shows PG&E's historic Manage Building capital expenditures in thousands of nominal dollars[116] and Table 8-24 compares DRA Recommended and PG&E Proposed Manage Buildings capital expenditures in thousands of nominal dollars.[117]

Table 8-23
Pacific Gas & Electric 2014 GRC
HistoricManagement Building Capital Expenditures--MWC 78
Nominal $000

Planning Order	Description	Historic Capital Expenditures 2007	2008	2009	2010	2011	2012
5736526	ATS DistributionAutomation Test Facility	$ -	$ -	$ -	$ -	$ 2,610.0	$ 4,180.8
Adjustment	ATS DistributionAutomation 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

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

[117] 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 2012	DRA Recommended 2013	DRA Recommended 2014	PG&E Proposed 2012	PG&E Proposed 2013	PG&E Proposed 2014
5736526	ATS DistributionAutomation Test Facility	$ 4,180.8	$ -	$ -	$ 4,082.0	$ -	$ -
Adjustment	ATS DistributionAutomation 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

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

1. ATS Technical Center Facility Upgrade

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

[118] Exh. PG&E-4, p. 13-16, lines 23-24

furniture, filing and storage cabinets, lighting, flooring, lobby area, and audio visual equipment.[119]

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

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

2. ATS Technical Center Parking Lot

The San Ramon Technology Center requires additional parking spaces to accommodate growth in the number of employees, laboratories, work equipment such as vehicles and test trailers, and materials for testing.[120]

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

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

3. ATS Electric Lab Facility (Performance Labs)

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

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[119] Exh. PG&E-4, p. 3-11, lines 1-10

[120] Exh. PG&E-4, p. 3-11, lines 13-16

technologies and the impact of these technologies on PG&E's system as part of PG&E's integrated laboratory environment.[121]

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

4. Weld Lab Upgrade

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

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

5. Buildings-Normal Operations

PG&E based continued capital expenditures to manage electric distribution buildings for 2013 and 2014 of $614,000 based on 2011 recorded spending.[123]

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

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[121] Exh. PG&E-4, p. 3-10, lines 3-9

[122] PG&E's response to data request DRA-PG&E-051-MKB, Q. 6.c.

[123] Exh. PG&E-4, p. 20-5, lines 7-12

6. San Carlos Service Center

PG&E wants $1.1 million in 2013 to redesign its San Carlos Service Center because it claims to need additional space to accommodate employees during major storms.[124]

In this general rate case, PG&E is seeking capital expenditures of $82 million for three consolidated distribution centers. The purpose of these three centers is to consolidate the thirteen independent distribution centers to provide better overview of each service territory, improve working conditions, provide more accurate and up to date distribution system information, improve disaster recovery capability, provide better customer communication, and provide a foundation for future "Smart Grid" applications.[125]

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

7. Colma Service Center

PG&E wants $898,242 in 2013 to create its Colma Service Center major storm center because it claims to need additional space to accommodate employees during major storms.[126]

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

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[124] Exh. PG&E-4, p. WP 20-15, line 18

[125] Exh. PG&E-4, p. WP 11-26, justification section

[126] Exh. PG&E-4, p. WP 20-15, line 19

better customer communication, and provide a foundation for future "Smart Grid" applications.[127]

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

8. Electric Distribution Building-Mapping

PG&E wants $769,526 in 2013 to create its electric distribution buildings—mapping building upgrades.[128]

In this general rate case, PG&E is seeking capital expenditures of $82 million for three consolidated distribution centers. The purpose of these three centers is to consolidate the thirteen independent distribution centers provide better overview of each service territory, improve working conditions, provide more accurate and up to date distribution system information, improve disaster recovery capability, provide better customer communication, and provide a foundation for future "Smart Grid" applications.[129] Electronic wall mapping is a necessary component of the consolidated distribution center and will give operators shared access to network information.[130]

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

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[127] Exh. PG&E-4, p. WP 11-26, justification section

[128] Exh. PG&E-4, p. WP 20-15, line 20

[129] Exh. PG&E-4, p. WP 11-26, justification section

[130] Exh. PG&E-4, p. WP 11-26, project description section

9. Santa Maria Storm Room

PG&E wants $738,296 in 2013 to create its Santa Maria Service Center major storm center because it claims to need additional space to accommodate employees during major storms.[131]

In this general rate case, PG&E is seeking capital expenditures of $82 million for three consolidated distribution centers. The purpose of these three centers is to consolidate the thirteen independent distribution centers provide better overview of each service territory, improve working conditions, provide more accurate and up to date distribution system information, improve disaster recovery capability, provide better customer communication, and provide a foundation for future "Smart Grid" applications.[132]

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

10. Stockton Service Center Upgrade

PG&E wants $535,288 in 2013 to upgrade its Stockton Service Center because of overcrowding caused by gas and electric employees sharing the same space.[133]

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

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[131] Exh. PG&E-4, p. WP 20-15, line 19

[132] Exh. PG&E-4, p. WP 11-26, justification section

[133] Exh. PG&E-4, p. WP 20-15, line 19

applications.[134] At the time of the completion of the consolidated distribution centers, 130 positions that occupy space in the current local distribution centers will be reduced to 100 positions and these positions will be moved to the new centralized distribution centers.[135] Space for 130 people will be freed up at distribution centers throughout the state.

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

11. Cinnabar Service Center

PG&E wants $234,016 in 2013 to upgrade its Cinnabar Service Center to build individual offices for four supervisors.[136]

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

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[134] Exh. PG&E-4, p. WP 11-26, justification section

[135] Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

[136] Exh. PG&E-4, p. WP 20-15, line 23

[137] Exh. PG&E-4, p. WP 11-26, justification section

[138] Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

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

12. Electric Distribution Buildings-Meter Reading Upgrades

PG&E wants $196,603 in 2013 to upgrade its electric distribution buildings-meter reading space in San Francisco.[139]

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

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

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[139] Exh. PG&E-4, p. WP 20-15, line 24

[140] Exh. PG&E-4, p. WP 11-26, justification section

[141] Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

13. Electric Distribution Buildings-Auburn Helicopter

PG&E wants $175,357 in 2013 to perform an electric distribution buildings-Auburn helicopter hanger conversion.[142]

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

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

14. Additional Security

PG&E wants $1.0 million of funding to finance fencing, install card readers, security cameras, and lighting at five locations a year starting in 2013, and ten locations a year starting in 2015.[145]

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

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[142] Exh. PG&E-4, p. WP 20-15, line 27

[143] Exh. PG&E-4, p. WP 11-26, justification section

[144] Exh. PG&E-4, p. WP 11-30, cost reduction-assumptions section

[145] Exh. PG&E-4, p. WP 20-15, lines 28-36

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

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

15. Escalation

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

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

Table 8-25 shows PG&E's historic Build Information Technology Applications and Infrastructure (MWC 2F) capital expenditures in thousands of nominal dollars[146] and Table 8-26 compares DRA Recommended and PG&E Proposed Build Information Technology Applications and Infrastructure capital expenditures in thousands of nominal dollars.[147]

[146] Exh. PG&E-4, p. WP 5-25, lines 14-32

[147] Exh. PG&E-4, p. WP 5-25, lines 14-32, and Exh. PG&E-4, WP 19-3, line 1

Table 8-25
Pacific Gas & Electric 2014 GRC
Historic Build Information Technologies Applications & Infrastructure Capital Expenditures--MWC 2F
Nominal $000

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 Architechture 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 Alternting 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

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Table 8-26
Pacific Gas & Electric 2014 GRC
Comp of DRA Rec and PG&E Prop Build Information Technologies Applications & Infrastructure --MWC 2F
Nominal $000

Planning Order	Description	DRA Recommended 2012	2013	2014	PG&E Proposed 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 Architechture Review	$ 2,101.0	$ -	$ -	$ -	$ -	$ -
5748017	Automation of Clearance&Switch Processes	$ -	$ -	$ -	$ -	$ -	$ 1,837.6
5748011	Mobile Devices for Add'l Crew Members (C)	$ -	$ -	$ -	$ -	$ -	$ 1,762.0
5748010	App Upgrade (Syclo) 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 Alternting 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

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

1. Workforce Mobilization projects

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

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

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[148] Exh. PG&E-4, pp. WP 2-88 & WP 2-89

[149] Exh. PG&E-4, p. WP 2-86, Project Description section

[150] Exh. PG&E-4, p. WP 2-86, Project Description section

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

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

2. The Electric Distribution-Geographic Information System (ED-GIS (Electric))

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

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

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

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[151] Exh. PG&E-4, p. WP 2-51, Project Description section

[152] Exh. PG&E-4, p. WP 2-51, Justification section

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

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

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

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

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[153] D. 12-12-030, pp. 19 & 20

[154] D. 12-12-030, p. 87

3. Data Historian for Electric Distribution

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

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

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

4. Work Scheduling and Dispatch System Consolidation Project

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

[155] Exh. PG&E-4, p. WP 2-27, Project Description section

scheduling system that can look across all field crews, make real-time availability and resourcing decisions, and supply field crews with the electronic records needed to perform the work.[156]

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

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

5. Outage Reporting & Analysis System Replacement

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

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

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[156] Exh. PG&E-4, p. WP 2-94, Project Description section

[157] Exh. PG&E-4, p. WP 2-31, Project Description section

Historically, PG&E's outage reporting functions has used field reports and customer calls to manually calculate the number of customers affected as a result of damaged equipment. In the absence of actual customer-level outage data, engineers have used network connectivity models and customer assignments to derive reliability outage data, engineers have used network connectivity models and customers assignments to derive reliability metrics such as SAIDI and SAIFI.[158]

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

6. Customer Connections Online

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

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

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[158] Exh. PG&E-4, p. WP 2-31, Justification section

[159] Exh. PG&E-4, p. WP 2-81, Project Description section

7. Estimator Tools Enhanced with Graphic Work Design

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

PG&E feels that the work design tools currently in use need to be improved and that this initiative is expected to yield significant benefits beginning in 2016 following widespread tool deployment and stabilization.[161]

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

8. Emergency Outage Response Technology

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

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[160] Exh. PG&E-4, p. WP 2-62, Project Description section

[161] Exh. PG&E-4, p. WP 2-62, Justification section and p. WP 2-65, Cost and Non-Cost Benefits section

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

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

9. Vegetation Control Application Replacement

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

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[162] Exh. PG&E-4, p. WP 2-22, Project Description section

[163] Exh. PG&E-4, p. WP 2-22, Justification section

[164] Exh. PG&E-4, p. WP 2-102, Project Description section

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

10. Asset Risk Management Tool for Public Safety

PG&E is pursuing a risk-based asset management strategy to enhance public and system safety. This strategy will identify and prioritize public and system safety risks, develop an investment strategy based on prioritized risks, and incorporate findings into future system upgrades and corrective maintenance activities.[165]

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

11. SAP Work Management

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

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

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[165] Exh. PG&E-4, p. WP 2-57, Project Description section

[166] Exh. PG&E-4, p. WP 2-70, Project Description section

12. BuildIT projects under $1 million

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

13. Distribution Management System

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

PG&E's electronic wall mapping application estimate was created using a combination of inputs: 1) PG&E's Concept Estimator tool; 2) a previous project estimate for the development of an electronic wall mapping system at PG&E; and 3) quotes for project components from the vendor.[170]

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[167] Exh. PG&E-4, p. WP 2-13, line 34

[168] Exh. PG&E-4, p. WP 2-15, line 48

[169] Exh. PG&E-4, p. WP 11-26

[170] Exh. PG&E-4, p. WP 11-29

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

[171] Exh. PG&E-4, p. WP 11-22, line 53