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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 Expenses
Part 1 of 2

San Francisco, California
May 3, 2013

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ELECTRIC DISTRIBUTION EXPENSES

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 Operation and Maintenance (O&M) expenses for Test Year (TY) 2014.

Electric distribution O&M expenses are for work activities related to the operation, supervision, and maintenance associated with the electric distribution system, load dispatching, station expenses, overhead and underground lines, poles, street lighting, customer installations, tree trimming, line transformers, and miscellaneous work.

Exhibit DRA-6 addresses other Electric Distribution expense forecasts associated with Electric Mapping and Records Management, Vegetation Management, and Distribution System. This exhibit specifically addresses all other Electric Distribution expense forecasts, and mainly corresponds to Exhibit PG&E-4.

PG&E's O&M activities and costs are grouped with similar types of work into Major Work Categories (MWC). PG&E's forecasts for MWC expenses are expressed in SAP nominal dollars. SAP dollars include certain labor-driven adders such as employee benefits and payroll taxes that are charged to separate Federal Energy Regulatory Commission (FERC) accounts. DRA's recommendations are made by MWC and SAP nominal dollars, which are then translated into the appropriate FERC accounts through the Results of Operations (RO) model.

II. SUMMARY OF RECOMMENDATIONS

PG&E forecasts $365.197 million in Electric Distribution expenses for the following Major Work Categories (MWCs): AB, JV, BF, KA, KB, KC, BK, GA, EV, EW, GC, HX, BH, IF, FZ, and DN. PG&E's forecasts increase their 2011 expenses in every area within Electric Distribution other than emergency response (MWC BH

and MWC IF). The corresponding DRA estimate is $313.543 million, $51.654 million less than PG&E's forecast.

DRA recommends that the Commission adopt:

- DRA's estimate of $4.675 million for PG&E's MWC JV – Electric Operations Technology. DRA's estimate is $7.400 million lower than PG&E's TY forecast.
- DRA's estimate of $1.066 million for PG&E's MWC AB – Electric Distribution Support (Applied Technologies Services). DRA's estimate is $1.085 million lower than PG&E's TY forecast.
- PG&E's forecast of $46.286 million for MWC BF – Patrols and Inspections.
- DRA's estimate of $35.009 million for PG&E's MWC KA – Overhead Maintenance. DRA's estimate is $18.650 million lower than PG&E's TY forecast.
- DRA's estimate of $13.557 million for PG&E's MWC KB – Underground Maintenance. DRA's estimate is $3.696 million lower than PG&E's TY forecast.
- PG&E's forecast of $5.992 million for PG&E's MWC KC – Network Maintenance.
- PG&E's forecast of $2.713 million for PG&E's MWC KC – Network Maintenance.
- DRA's estimate of $12.267 million for PG&E's MWC GA – Pole Test and Treat, Restoration and Joint Utilities Coordination. DRA's estimate is $3.850 million lower than PG&E's TY forecast.
- DRA's estimate of $8.933 million for PG&E's MWC EV – New Business Service Inquiries. DRA's estimate is $1.848 million lower than PG&E's TY forecast.
- PG&E's forecast of $10.450 million for MWC EW – Work at the Request of Others.
- PG&E's forecast of $72.608 million for MWC BH – Electric Emergency Corrective Maintenance.
- DRA's estimate of $41.081 million for MWC IF – Electric Distribution Major Emergency. DRA's estimate is $3.658 million lower than PG&E's TY forecast.
- DRA's estimate of $35.452 million for PG&E's MWC GC – Distribution Substation Maintenance and Operations. DRA's estimate is $4.612 million lower than PG&E's TY forecast.

- DRA's estimate of $21.427 million for PG&E's MWC FZ –Electric Engineering. DRA's estimate is $2.720 million lower than PG&E's TY forecast.
- PG&E's forecast of $2.027 million for MWC HX – Distribution Automation and System Protection.
- PG&E's forecasted offset of $(10.191) million in MWC AB – Electric Distribution Support.

DRA recommends that the Commission reject:

- PG&E's request for a two-way balancing account for MWC IF – Electric Distribution Major Emergency.
- PG&E's request for additional funding for MWC DN Technical Training Curriculum. PG&E did not provide historical costs for training in MWC format; PG&E should have embedded historical costs to address training costs.

Table 5-1 compares DRA's and PG&E's TY2014 forecasts of Electric Distribution expenses addressed in this exhibit:

Table 5-1
Electric Distribution Escalated Expenses for TY2014
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[1] (c)	Amount PG&E>DRA (d=c-b)	Percentage PG&E>DRA (e=d/b)
JV – Maintain IT Apps & Infra	$4,675	$12,075	$7,400	158.29%
AB – Support	$1,066	$2,151	$1,085	101.78%
BF – Patrols and Inspections	$46,286	$46,286	$0	0.00%
KA – E Dist Maint-Overhead	$35,009	$53,659	$18,650	53.27%
KB – E Dist Maint-Underground	$13,557	$17,253	$3,696	27.26%
KC – E Dist Maint-Network	$5,992	$5,992	$0	0.00%
BK – Maintain Other Equip	$2,713	$2,713	$0	0.00%
GA – Poles- Inven/Test & Treat	$12,267	$16,117	$3,850	31.39%
EV – Manage Service Inquiries	$8,933	$10,781	$1,848	20.69%
EW – WRO - Maintenance	$10,450	$10,450	$0	0.00%
BH – Perf Maint to Corr Fail	$72,608	$72,608	$0	0.00%
IF – ED Major Emergency	$41,081	$44,739	$3,658	8.90%
GC – Dist Sub: Maintain & Operate	$35,452	$40,064	$4,612	13.01%
FZ – Opr Distribution Sys – El Eng	$21,427	$24,147	$2,720	12.69%
HX – T&D Automation	$2,027	$2,027	$0	0.00%
DN – Develop & Provide Training	$0	$4,135	$4,135	-
AB – Support	($10,191)	($10,191)	$0	0.00%
Total	$313,543	$365,197	$51,654	16.47%

[1] Exhibit (PG&E-4) WP 1-8

III. GENERAL OVERVIEW

A. PG&E's Request

PG&E developed the Electric Operations Improvements Plan as a guide for Electric Distribution Operations. The plan focuses on public and system safety, employee safety, reliability, compliance, customer satisfaction, and work efficiency.[2] PG&E heavily focused on more advanced technology to achieve its goals, which served as a major cost driver in the TY2014 forecast.

PG&E used various methods to develop its TY forecast for Electric Distribution O&M expenses. Common methods include averaging recorded historical expenses (e.g. 3-year and 5-year averages of historical data), estimating the number of units of work to be performed and then multiplying the units by the estimated unit cost to perform the work, and making adjustments to 2011 actual expenditures based on expected future program costs.

B. Authorized vs. Recorded Expenses/Expenditures

In PG&E's 2011 General Rate Case (GRC), the California Public Utilities Commission (Commission) ordered the utility to provide periodic compliance filings showing authorized and recorded expenses and capital expenditures, by Major Work Category (MWC), for electric distribution, electric generation, and gas distribution.[3]

As such, DRA provides the following historical comparison of authorized versus recorded electric distribution expenses for the MWCs addressed in this exhibit.

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[2] Exhibit (PG&E-4) page 1-1

[3] Decision (D.) 11-05-018, *mimeo*., Ordering Paragraph 42, at pp. 98-99.

Table 5-2
2007-2011 Authorized vs. Recorded Electric Distribution Expenses for Major Work Categories AB, BF, KA, KB, KC, BK, GA, EV, EW, GC, HX, BH, IF, FZ, and DN
(In Thousands of Dollars)

MWC		Year				
		2007	2008	2009	2010	2011
AB	Authorized	$0	$0	$0	$0	$17,530
	Recorded	$800	$1,303	$1,119	$1,442	$1,029
BF[4]	Authorized	$27,334	$28,156	$28,978	$29,800	$40,712
	Recorded	$28,958	$29,595	$27,358	$33,293	$44,874
KA, KB, KC	Authorized	$63,224	$65,125	$67,026	$68,927	$72,665
	Recorded	$67,433	$65,210	$53,032	$54,348	$67,366
BK	Authorized	$4,102	$4,225	$4,348	$4,472	$2,057
	Recorded	$4,904	$5,555	$(1,963)	$2,913	$2,353
GA	Authorized	$16,914	$17,423	$17,931	$18,440	$16,462
	Recorded	$12,756	$12,515	$9,807	$6,382	$6,550
EV	Authorized	$11,219	$11,557	$11,894	$12,231	$13,488
	Recorded	$20,235	$20,065	$13,370	$7,199	$6,194
EW	Authorized	$7,369	$7,590	$7,812	$8,033	$21,294
	Recorded	$11,300	$12,969	$12,670	$6,991	$9,021
GC	Authorized	$26,337	$27,129	$27,920	$28,712	$34,432
	Recorded	$30,952	$31,148	$30,707	$29,677	$33,077
HX	Authorized	$2,182	$2,248	$2,313	$2,158	$1,900
	Recorded	$2,094	$1,566	$1,845	$2,166	$2,081
BH	Authorized	$48,262	$49,713	$50,670	$50,983	$64,618
	Recorded	$60,195	$61,031	$71,048	$72,534	$75,955
IF	Authorized	$10,586	$10,904	$11,180	$11,435	$21,240
	Recorded	$9,264	$40,798	$30,524	$51,797	$80,428
FZ	Authorized	$18,595	$19,154	$19,714	$20,273	$25,062
	Recorded	$17,579	$20,307	$21,277	$19,789	$19,603
DN	Authorized	$0	$0	$0	$0	$0
	Recorded	$0	$0	$0	$0	$0

Source: Authorized 2007-2010 data from Master Data Request, Chapter 24 Question 1. Authorized 2011 data from PG&E's August 3, 2011 Budget Report in Compliance with D.11-05-018. Recorded 2007-2011 data from Exhibit (PG&E-4), Chapter 2, WP 2-1, Chapter 3, WP 3-1, Chapter 5, WP 5-1, Chapter 6, WP 6-1, Chapter 9, WP 9-1, Chapter 10, WP 10-1, Chapter 13, WP 13-1, Chapter 14, WP 14-1, Chapter 17, WP 17-1, Chapter 20, WP 20-1.

[4] Between 2010 and 2011, PG&E adjusted the activities recorded in MWCs BF, KA, KB, KC, and BK. Previous to New: BF – BF/KC; BK-BK; GB-KB; BG-BK/KA/KB/KC

IV. DISCUSSION / ANALYSIS OF ELECTRIC OPERATIONS TECHNOLOGY

Electric Operations Technology is comprised of the technology projects that support PG&E's electric distribution grid, such as the automation of processes that were once manual and paper-based. The projects focus on four technology areas: 1) system operations; 2) asset and records management; 3) work design; and 4) management, and workforce mobilization and scheduling.[5] PG&E forecasts $12.075 million for TY2014 technology expenses, which is an increase of $9.889 million or 452.40% over 2011 expenses of $2.186 million.[6] The corresponding DRA estimate for Electric Operations Technology expenses is $4.675 million, which is $7.400 million less than PG&E's forecast of $12.075 million. DRA's 2014 estimate is $2.489 million greater than PG&E's 2011 recorded expenses of $2.186 million.

The following table summarizes PG&E's request and DRA's recommendation for Electric Operations Technology.

Table 5-3
Electric Distribution Expenses for TY2014
Electric Operations Technology
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[7] (c)
JV – Maintain IT Apps & Infra	$4,675	$12,075

A. MWC JV

PG&E records expenses for Electric Operations technology in Major Work Category (MWC) JV. PG&E developed most project TY2014 forecasts using the

[5] Exhibit (PG&E-4) page 2-1

[6] Exhibit (PG&E-4) WP 2-1

[7] Exhibit (PG&E-4) WP 2-1

Company's application development estimating tool, referred to as the "Concept Estimating Tool."[8]

Table 5-4
2007-2011 Recorded Data for Electric Operations Technology
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
JV – Maintain IT Apps & Infra	$277	$1,506	$2,555	$2,366	$2,186

Source: Exhibit (PG&E-4) WP 2-1.

DRA's recommendations for MWC JV are tied to the recommendations for project funding in Exhibit DRA-8 (Electric Distribution Capital Expenditures, Part 2 of 2). In every case where DRA recommends the Commission reject PG&E's request for capital expenditures, DRA recommends that the Commission also reject the associated project expenses.

PG&E forecasts expenses for twelve different projects in 2014. DRA opposed funding for four of PG&E's twelve projects in MWC JV. DRA reduced forecasted expenses by 14% for six of the projects, which were all developed using the "Concept Estimating Tool."[9] For the remaining project, Customer Connection Online Tools, DRA developed its TY estimate by dividing PG&E's TY2014 forecast in half. DRA discusses each project below.

1. Emergency Response Technology

PG&E is requesting $0.267 million for Emergency Response Technology. The project will upgrade IT infrastructure and telecommunications in Electric Distribution Storm Rooms (DSRs) to allow better coordination between PG&E's emergency response facilities during unplanned outages.[10] DRA's corresponding test year

[8] Exhibit (PG&E-4) page 2-9

[9] DRA recommends in Exhibit DRA-13 that project expenses developed using the "Concept Estimating Tool" be reduced by 14%

[10] Exhibit (PG&E-4) WP 2-23.

estimate is $0.230 million; DRA reduced forecasted expenses for the project by 14% as recommended in Exhibit DRA-13.

2. Data Historian for Electric Distribution

PG&E is requesting $0.206 million for its Data Historian project.[11] The Data Historian software provides central data archiving and analysis for time series data from PG&E's Supervisory Control and Data Acquisition (SCADA) system. This project will replace PG&E's "legacy data historian software application" with a commercially available and industry-standard data historian application.[12] In Exhibit DRA-8 (Electric Distribution Capital Expenditures, Part 2 of 2), DRA recommends that the Commission reject PG&E's request for funding of the Data Historian project. Therefore, DRA recommends that the Commission also reject the associated project expenses.

3. Outage Reporting and Analysis System

PG&E is requesting $0.362 million for Outage Reporting & Analysis System Replacement.[13] The project will replace legacy tools and manual processes used to record outage data and monitor reliability metrics with an automated system that can more efficiently perform these processes. The new project will also integrate newly available SmartMeter and SCADA data.[14] DRA's corresponding test year estimate is $0.311 million; DRA reduced forecasted expenses for the project by 14% as recommended in Exhibit DRA-18 (Shared Services & Information Technology Costs).

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[11] Exhibit (PG&E-4) WP 2-13

[12] Exhibit (PG&E-4) WP 2-33

[13] Exhibit (PG&E-4) WP 2-33

[14] Exhibit (PG&E-4) WP 2-31

4. Electric Distribution Geographic Information System/Asset Management (ED GIS/AM)

PG&E is requesting $1.830 million for the Electric Distribution Geographic Information System/Asset Management (ED GIS/AM) project.[15] The project will convert PG&E's electric distribution asset data into a single, integrated GIS system, as opposed to the isolated legacy systems which PG&E currently uses to record its asset data.[16] The ED/GIS project is a continuation of the Automated Mapping and Facilities Management (AM/FM) project. According to PG&E, the AM/FM project "completed upgrades to legacy systems and map alignment work before the project was completed in favor of the new integrated GIS/SAP approach envisioned for this project."[17]

DRA conducted discovery in order to better understand how funds for the AM/FM project were reallocated after 2011, when PG&E claims the AM/FM project was suspended.

DRA asked:[18]

> "On page 2-26 of Exhibit PG&E-4, PG&E stated, 'PG&E expects to spend the amount forecast for the previous AM/FM project before the end of 2013.' Please explain why PG&E continues to spend money on a project that was brought to a close in September 2011."

PG&E's responded:

> "PG&E suspended work on the AM/FM project in 2011 to assess the effectiveness of the project. The assessment determined that a more robust system was needed and original AM/FM project was closed in September 2011. The AM/FM project was re-launched as separate GIS/AM projects for Electric Distribution, Gas Distribution, Electric Transmission and Gas Transmission. The forecast amounts referenced in footnote 25 (Exhibit (PG&E-4), page 2-26) were included

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[15] Exhibit (PG&E-4), WP 2-13

[16] Exhibit (PG&E-4) WP 2-51.

[17] Exhibit (PG&E-4) WP 2-51

[18] DRA-067-EJ1 question 9f

in PG&E's 2011 GRC forecast and used to cover the cost of the initial phase of the AM/FM (or Base GIS) project through 2011 and will be allocated to the new ED GIS/AM project and the gas distribution GIS project also known as Pathfinder."

DRA opposes additional funding for the ED/GIS project, which previously received ratepayer funding under a different project name. PG&E changed its approach for the project having already received and used ratepayer funds; it is unreasonable that ratepayers be forced to fund this project twice. The reallocation of embedded ratepayer funds from the AM/FM project to the ED GIS/AM project should be sufficient to cover subsequent phases of the project.

5. Asset Risk Management Tool for Public Safety

PG&E is requesting $0.349 million for its Asset Risk Management Tool for Public Safety.[19] The tool will allow PG&E to systematically identify high risk locations within its service area, interpret results, and plan mitigation activities.[20] DRA's corresponding test year estimate is $0.300 million; DRA reduced forecasted expenses for the project by 14% as recommended in Exhibit DRA-18.

6. Graphic Work Design (GWD) Tools

PG&E is requesting $0.801 million for the Graphic Work Designs (GWD) project.[21] The project will replace PG&E's current construction design and estimating toolset with new graphics-based construction visualization and estimation software.[22] DRA's corresponding test year estimate is $0.689 million; DRA reduced forecasted expenses for the project by 14% as recommended in Exhibit DRA-18.

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[19] Exhibit (PG&E-4) WP 2-58

[20] Exhibit (PG&E-4) WP 2-57

[21] Exhibit (PG&E-4) WP 2-64

[22] Exhibit (PG&E-4) WP 2-62

7. Capital Asset and Expense Planning System (CAEPS) Enhancements

PG&E is requesting $0.141 million for the second phase of the Capital Asset and Expense Planning (CAEPS) Enhancements.[23] The tool will facilitate planning, budgeting, staffing, and monitoring work by using historic costs per unit of work. DRA's corresponding test year estimate is $0.121 million; DRA reduced forecasted expenses for the project by 14% as recommended in Exhibit DRA-18.

8. SAP Work Management Enhancements (Plant Maintenance Module) (a)

PG&E is requesting $0.751 million for SAP Work Management Enhancements.[24] The funding will help bring different departments onto the SAP platform, which facilitates work order management processes.[25] DRA's corresponding test year estimate is $0.645 million; DRA reduced forecasted expenses for the project by 14% as recommended in Exhibit DRA-18.

9. Project Management and Reporting Toolset Enhancements

PG&E is requesting $0.500 million for Project Management and Reporting Toolset Enhancements.[26] The project will provide more sophisticated project portfolio management tools to better manage and organize projects across the company. DRA's corresponding test year estimate is $0.430 million; DRA reduced forecasted expenses for the project by 14% as recommended in Exhibit DRA-18.

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[23] Exhibit (PG&E-4) WP 2-68

[24] Exhibit (PG&E-4) WP 2-13

[25] Exhibit (PG&E-4) WP 2-70

[26] Exhibit (PG&E-4) WP 2-15

10. Customer Connections Online (CCO) Tools

PG&E is requesting $3.897 million for CCO Tools.[27] The project will revamp existing, older customer-facing systems to provide new Customer Connections Online (CCO) tools that better allow customers to create and track service requests.[28] DRA's corresponding TY estimate is $1.949 million.

CCO Tools is PG&E's most expensive expense request in Electric Operations Technology. The individual project costs for CCO Tools are higher than every annual recorded expense from 2007-2011 for the entire MWC JV.

PG&E failed to provide sufficient cost-benefit analyses to support the high project costs. When DRA asked PG&E to provide any cost-benefit analyses used in determining the TY2014 forecast, PG&E directed DRA back to Exhibit (PG&E-4) WP 2-84,[29] which provides a vague description of future cost-savings and benefits, none of which PG&E is able to quantify. The customer savings and benefits do not justify the extremely high cost of the project to ratepayers.

PG&E forecasted $0.500 million for 2012 project expenses, but only spent $0.221 million, which is less than half of its 2012 forecast.[30] DRA's TY2014 estimate is $1.949 million, which is half of PG&E's TY2014 forecast of $3.897 and is sufficient to cover the costs of this project.

11. Workforce Mobilization by Field Crew or Work Type

PG&E is requesting $1.858 million for its Workforce Mobilization by Field Crew or Work Type Project.[31] The money is being requested for expenses on the following projects: $0.614 million for Mobile for Division (Locally Headquartered)

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[27] Exhibit (PG&E-4) WP 2-15

[28] Exhibit (PG&E-4) WP 2-81

[29] DRA-067-EJ1 question 15e

[30] DRA-067-EJ1 question 5

[31] Exhibit (PG&E-4) WP 2-15

Crews, $0.150 million for Application Upgrade for Pole Test & Treat Crews, $115,200 for Mobile for General Construction (T-300) Crews, $0.430 million for Distribution Substation Crews, $0.110 million for Additional Crew Members, and $0.440 million for Automation of Clearance and Switching Processes. In Exhibit DRA-8 (Electric Distribution Capital Expenditures, Part 2 of 2), DRA recommends that the Commission reject PG&E's request for funding of Workforce Mobilization projects. Therefore, DRA recommends that the Commission also reject the associated project expenses

12. Work Scheduling and Dispatch System Consolidation

PG&E is requesting $1.113 million for its Workforce Mobilization by Field Crew or Work Type Project.[32] The project will develop a more integrated scheduling system to better manage work crews, their schedules, and their required work; the tool is intended to replace PG&E's current manual tracking processes.[33] In Exhibit DRA-8 (Electric Distribution Capital Expenditures, Part 2 of 2), DRA recommends that the Commission reject PG&E's request for funding of the Work Scheduling and Dispatch System Consolidation project. Therefore, DRA recommends that the Commission also reject the associated project expenses.

B. DRA's Analysis

PG&E fails to provide historical evidence to support the stark increase in expenses over prior years for MWC JV. Historically, Information Technology (IT) expenses have never increased by the amount being proposed by PG&E in this case. The table below shows the annual increase in expenses using 2007-2012 data and compares 2012 recorded expenses to PG&E's TY2014 forecast.

[32] Exhibit (PG&E-4), WP 2-15

[33] Exhibit (PG&E-4), WP 2-94

Table 5-5
Annual Increase in MWC JV Expenses (2007-2012)
(In Thousands of Dollars)

Year	2007	2008	2009	2010	2011	2012	TY2014
Recorded Expense/PG&E's forecast	$277	$1,506	$2,555	$2,366	$2,186	$4,729	$12,075
Annual Increase ($)		$1,229	$1,049	($189)	($180)	$2,543	$7,346

Source: 2007-2011 data from Exhibit (PG&E-4) WP 2-1. 2012 data from DRA-108-CKT question 4

The largest annual increase in MWC JV since 2007 was $2.543 million from 2011 to 2012. For TY2014, PG&E is forecasting an increase of $7.346 million over 2012 expenses. Given the historical data, which reveals PG&E's spending patterns, it is improbable that PG&E will increase expenses by the amount it proposes in this GRC. In addition, PG&E forecasted $6.619 million for 2012 MWC JV expenses in its TY2014 application,[34] but only spent $4.729 million in 2012.[35] PG&E overstated its 2012 forecast by $1.89 million. DRA reasons that PG&E's TY forecast of $12.075 million is also overstated.

The following table provides PG&E's TY2014 request for expenses and DRA's TY recommendation for each individual project within MWC JV.

[34] Exhibit (PG&E-4), WP 2-1

[35] 2012 data from DRA-108-CKT question 4

Table 5-6
Electric Distribution TY2014 by Project
Electric Operations Technology
(In Thousands of Dollars)

	Project Name	PG&E's Proposed (thousands)	DRA Proposed (thousands)
Electric Distribution System Operations	Emergency Response Technology	$267	$230
	Data Historian for Electric Distribution	$206	$0
	Outage Reporting and Analysis System Replacement	$362	$311
Electric Distribution Asset & Records Management	Electric Distribution Geographic Information System/Asset Management (ED GIS/AM)	$1,830	$0
	Asset Risk Management Tool for Public Safety	$349	$300
Electric Distribution Work Design & Management	Graphic Work Design (GWD) Tools	$801	$689
	Capital Asset and Expense Planning System (CAEPS) Enhancements	$141	$121
	SAP Work Management Enhancements (Plant Maintenance Module)	$751	$645
	Project Management and Reporting Toolset Enhancements	$500	$430
	Customer Connections Online (CCO) Tools	$3,897	$1,949
Electric Distribution Workforce Mobilization & Scheduling	Mobile for Division (Locally Headquartered) Crews	$613	$0
	Application Upgrade for Pole Test and Treat Crews	$150	$0
	Mobile for General Construction Crews	$115	$0
	Mobile for Distribution Substation Crews	$430	$0
	Mobile Devices for Additional Crew Members	$110	$0
	Mobile Automation of Clearance and Switching Processes	$440	$0
	Work Scheduling and Dispatch System Consolidation	$1,113	$0
	Total	**$12,075**	**$4,675**

Source: Exhibit (PG&E-4), Workpaper Table 2-11

With the exception of the CCO Tools project, DRA reduced the costs of all projects developed using the "Concept Estimating Tool" by 14% as recommended in Exhibit DRA-18.

It is troubling that PG&E claims so many of its systems are simultaneously out-of-date, inefficient, or unable to support current requirements and that PG&E is only now choosing to update these systems. System and software updates are routine maintenance activities that ratepayers continually fund and PG&E should have embedded costs for IT projects. DRA did not take issue with additional funding for projects it believed had high efficiency for PG&E and high value to ratepayers, especially projects that focused on ratepayer cost savings, reliability, and safety. DRA opposed projects that seemed discretional, ongoing, or had minimal benefits to ratepayers given their high costs. Therefore, DRA recommends its TY estimate of $4.675 million for PG&E's IT expenses within MWC JV in 2014.

V. DISCUSSION / ANALYSIS OF APPLIED TECHNOLOGY SERVICES

PG&E's Applied Technology Services (ATS) is a multidisciplinary team of engineers, scientists, technicians, and support staff that provide support to PG&E's different engineering and operating departments.[36] PG&E forecasts $2.151 million in TY2014 expenses for ATS, which is an increase of $1.199 million or 116.61% over 2012 expenses of $0.952 million.[37]

The corresponding DRA estimate for PG&E's ATS expenses is $1.066 million, which is $1.085 million less than PG&E's TY2014 forecast. DRA's TY estimate is $0.114 million more than PG&E's 2012 recorded expenses of $0.952 million.

The following table summarizes PG&E's request and DRA's recommendation for Applied Technology Services.

[36] Exhibit (PG&E-4) page 3-2

[37] Exhibit (PG&E-4) WP 3-1. 2012 data from DRA-108-CKT question 4.

Table 5-7
Electric Distribution Expenses for TY2014
Applied Technology Services
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[38] (c)
AB – Support	$1,066	$2,151

A. MWC AB

PG&E records expenses for the ATS program in Major Work Category (MWC) AB. Most expenses are charged to the organization or department within PG&E that requests the service from ATS. Expenses for the following programs are charged to ATS: Electric and Magnetic Field (EMF) program, Climate Change Program, ATS Document Library Scanning and Archiving, and the expense portion of the San Ramon Technology Center Facility Upgrades.[39]

Table 5-8
2007-2012 Recorded Data
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011	2012
AB – Support	$719	$771	$834	$1,006	$1,028	$952

Source: 2007-2011 data from Exhibit (PG&E-4) WP 3-1. 2012 data from DRA-108-CKT question 4.

After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's TY expense forecast for the EMF program and the Climate Change program.

[38] Exhibit (PG&E-4) WP 3-1

[39] Exhibit (PG&E-4) page 3-3

1. ATS Document Library Scanning and Archiving

PG&E forecasts $1.000 million in TY2014 expenses for the ATS Document Library Scanning and Archiving project.[40] The project will convert the entire ATS library of reports and records into electronic format.[41] PG&E developed its test year forecast by multiplying the estimated number of documents by the estimated unit cost associated with retrieving, scanning, and special handling of the documents. The forecast includes the cost of a project manager to oversee the project.[42]

DRA conducted discovery to assess PG&E's estimates and found that PG&E was unable support its numbers with thorough documentation or analyses. PG&E's forecast for scanning expenses is $818,000, which constitutes the largest portion of the forecasted $1 million in project expenses. PG&E calculated its forecast for scanning costs by multiplying the estimated number of documents by the estimated image cost for scanning. Scanning costs varied based on the size of the document, with oversized images estimated to cost more. DRA asked PG&E to explain how it developed its scanning costs and provide all supporting documentation and calculations.

DRA asked:[43]

> "Explain in detail how PG&E determined that standard images cost $0.10/image and oversize images cost $1.50/image, and provide a breakdown of costs. Provide all supporting documentation, calculations, and analyses that support PG&E's numbers."

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[40] Exhibit (PG&E-4) WP 3-9

[41] Exhibit (PG&E-4) page 3-6

[42] Exhibit (PG&E-4) WP 3-9

[43] DRA-131-EJ1 question 11b

PG&E responded:

> "The estimated billing rates of $0.10/standard image and $1.50/oversize image was based on an informal proposal from an external vendor and was also based on the experience of PG&E's Gas Operations organization with records scanning projects."

DRA asked:[44]

> "Explain in detail how PG&E determined that 92% of images were standard size and 8% of images were oversize. Provide all supporting documentation, calculations, and analyses that support PG&E's numbers."

PG&E responded:

> "The estimate of the percentage of records that are standard and oversized is based on PG&E's familiarity with the physical records. Most records are a standard size but a portion of them are oversized, including diagrams and other attachments included with the reports. Because of the variety of reports spanning 100 years, it was not feasible to make a physical count of oversized documents."

PG&E's TY2014 forecast for special handling expenses is $80,000. Similar to the scanning portion of this project, PG&E calculated its TY2014 forecast by multiplying the estimated number of documents by the estimated unit cost. DRA asked PG&E to explain how it developed its special handling costs and provide all supporting documentation and calculations.

DRA asked:[45]

> "Explain in detail how PG&E determined that special images cost an extra $0.20/image. Provide all supporting documentation, calculations, and analyses that support PG&E's numbers."

PG&E responded:

> "The estimated special images cost of an extra $0.20/image was based on an informal proposal from an external vendor and was also

[44] DRA-131-EJ1 question 11a

[45] DRA-131-EJ1 question 12b

based on the experience of PG&E's Gas Operations organization with records scanning projects.

DRA asked:[46]

> "Explain in detail how PG&E determined that 10% of images were special handling. Provide all supporting documentation, calculations, and analyses that support PG&E's numbers."

PG&E responded:

> "The percentage of images requiring special handling was estimated based on PG&E's familiarity with the documents in the library. Approximately the first entire row of documents in the main storage room would be considered fragile, which comprises approximately ten percent of total images (these are the oldest records dating back to the 1910s). Reports may also contain actual photos attached to a piece of paper or secured in a plastic sleeve (from before the widespread use of digital photos). The estimate of ten percent is very conservative."

DRA received similar discovery responses when it asked PG&E to explain how the cost for retrieval of documents was developed.

PG&E's TY2014 forecast for project management was $87,000. DRA asked PG&E how it developed its cost estimate for project management and to provide all supporting documentation and calculations.

DRA asked:[47]

> "The unit cost for project management is $125/hr for a contractor. Provide a breakdown of unit cost and explain in detail how PG&E chose this rate. How does this rate compare to industry standards for comparable work? Provide all supporting documentation and calculations."

PG&E responded:

> "The estimated project management billing rate of $125 per hour for a contractor was based on an informal proposal from an external vendor and was also based on the experience of PG&E's Gas Operations

[46] DRA-131-EJ1 question 12a

[47] DRA-131-EJ1 question 13a

organization with records management projects. The $125 per hour billing rate for the retrieval of records is for an experienced project manager with specialized knowledge of all aspects of a records project of this magnitude."

PG&E's responses reveal that the majority of the company's cost estimates are based on informal proposals and PG&E's internal judgment. Significantly, PG&E failed to respond to DRA's request to provide documentation or evidence to support its request and cost estimates. PG&E was unable to provide any solid calculations, paper estimates, or analyses to support its figures, yet the ATS Library project constitutes 89% of the TY2014 increase over 2011 expenses.

DRA considered ratepayer benefits when assessing the ATS Library Project. PG&E stated, "Although this project does not directly result in an ongoing reduction in the cost of maintaining ATS records, there are future benefits from an efficiency standpoint."[48] The efficiencies to which PG&E refers focus mostly on quicker and easier retrieval of ATS documents by PG&E employees,[49] and add little value to ratepayer savings, reliability, or safety. This project is largely discretionary.

DRA opposes funding for the ATS Library project on the basis that it more than doubles expenses in MWC AB from all prior years while providing no hard evidence to substantiate the high project costs.

2. Expense Portion of San Ramon Technology Center Facility Upgrades

The San Ramon Technology Facility (SRTC) upgrade is a new project that focuses on modernizing the common areas of the facility.[50] PG&E forecasts $85,000 for the expense portion of the project.[51]

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[48] Exhibit (PG&E-4) page 3-13

[49] Exhibit (PG&E-4) page 3-13

[50] Exhibit (PG&E-4) page 3-8

[51] Exhibit (PG&E-4) WP 3-26

PG&E does not need additional funding for the SRTC upgrades. Building upgrades and modernizations are ongoing processes. In PG&E's project summary for the SRTC Upgrade, PG&E noted: "PG&E has invested in new labs and testing facilities at this location and the common areas need to be upgraded to support the work performed in these labs."[52] It makes financial sense for ratepayers that PG&E is able to reallocate funding from previous investments and upgrades, such as the new labs and testing facilities mentioned by PG&E, to other locations such as the SRTC facility upgrades. Because there are embedded costs for facility upgrades, DRA recommends no additional funding for the project.

VI. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION MAINTENANCE

The Electric Distribution Maintenance (EDM) Program is comprised of the maintenance activities that uphold PG&E's electric distribution line assets. EDM work includes patrols, inspections, preventive maintenance, and equipment repair for PG&E's overhead, underground, and network facilities.[53]

PG&E forecasts $125.903 million for TY2014 Electric Distribution Maintenance expenses, which is an increase of $11.310 million or 9.9% over 2011 expenses of $114.593 million.[54] EDM expenses are recorded in five Major Work Categories: BF for Patrols and Inspection with a forecast of $46.286 million, KA for Electric Distribution Maintenance – Overhead with a forecast of $2.713 million, KB for Electric Distribution Maintenance – Underground with a forecast of $53.659 million, KC for Electric Distribution Maintenance – Network with a forecast of $17.253 million, and BK – Maintenance of Other Equipment with a forecast of $5.992 million.

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[52] Exhibit (PG&E-4) WP 3-25

[53] Exhibit (PG&E-4) page 5-12

[54] Exhibit (PG&E-4) WP 5-1

Most forecasted expenses in the EDM Major Work Categories were developed by estimating the number of work units to be performed and multiplying them by the estimated unit cost.[55] This method was also used to develop the additional project costs. The corresponding DRA estimate is $103.557 million, which is $22.346 million less than PG&E's forecast of $125.903 million.

Table 5-9 summarizes PG&E's request and DRA's recommendation for the MWCs within Electric Distribution Maintenance.

Table 5-9
Electric Distribution Expenses for TY2014
Electric Distribution Maintenance
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[56] (c)
BF – Patrols and Inspections	$46,286	$46,286
KA – E Dist. Maint-Overhead	$35,009	$53,659
KB – E Dist. Maint-Underground	$13,557	$17,253
KC – E Dist. Maint-Network	$5,992	$5,992
BK – Maint Other Equip	$2,713	$2,713
Total	$103,557	$125,903

A. MWC BF

PG&E records its expenses for patrols and inspections in MWC BF. This is comprised of patrols and inspections of overhead and underground facilities, infrared inspections, inspection and testing of overhead and underground line equipment, post-outage inspections, and other maintenance work.[57] PG&E forecasts $46.286 million in expenses for MWC BF, which is an increase of $1.412 million or $3.5% over 2011 expenses of $44.874 million.[58]

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[55] Exhibit (PG&E-4) page 5-43

[56] Exhibit (PG&E-4) WP 5-1

[57] Exhibit (PG&E-4) page 5-12

[58] Exhibit (PG&E-4) WP 5-1

Table 5-10
2007-2011 Recorded Data for MWC KC
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
BF – Patrols and Inspections	$28,958	$29,595	$27,358	$33,293	$44,874

Source: Exhibit (PG&E-4) WP 5-17

After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's request for $46.286 million in expenses for MWC BK.

B. MWC KA

PG&E records expenses for overhead maintenance in MWC KA. This covers preventive maintenance and equipment repair of overhead facilities such as electric distribution pole equipment and streetlights. PG&E forecasts $53.659 million in TY expenses for MWC KA, which is an increase of $12.576 million or 30.61% over 2011 expenses of $41.083 million.[59] The corresponding DRA estimate for overhead maintenances expenses is $35.009 million.

[59] Exhibit (PG&E-4) WP 5-10

Table 5-11
2007-2011 Recorded Data and 2014 Forecast for MWC KA
(In Thousands of Dollars)

Activity Type	2007	2008	2009	2010	2011	PG&E's TY2014	DRA's TY2014
Overhead Notifications	$26,267	$21,279	$14,049	$15,339	$21,692	$11,726	$11,726
Bird Safe	$1,744	$1,548	$2,241	$2,509	$2,295	$1,881	$1,881
Bird Retrofits	$967	$1,104	$996	$1,162	$1,119	$1,706	$1,706
Overhead COE	$5,775	$5,313	$5,505	$7,669	$7,425	$9,571	$9,571
Streetlight Group Replacements	$1,284	$714	$479	$117	$48	$325	$325
Streetlight Burnouts	$3,920	$4,160	$4,360	$4,559	$6,131	$6,409	$5,930
Radio and Television Interference Investigations	$539	$643	$649	$583	$623	$657	$657
Poles – Insulator Washing	$103	$177	$104	$22	$21	$459	$52
Regs/Recls CM Tag	$1,203	$385	$512	$477	$912	$1,000	$1,000
Transformer Labor Reclassification	-	-	-	-	$974	$1,000	$1,000
Idle Facilities	$32	$17	$6	$8	$2	$3,819	$0
Permit Updates	-	-	-	-	-	$300	$300
Infrared Inspections	-	-	-	-	-	$3,500	$0
Infrared Tags	-	-	-	-	-	$10,000	$0
Total MWC KA	**$46,733**	**$41,404**	**$32,147**	**$33,323**	**$41,083**	**$53,659**	**$35,009**

Source: Exhibit (PG&E-4) WP 5-11. Total MWC KA expenses are escalated for TY2014; individual line items are not.

DRA agrees with PG&E's TY expense forecast for the following items: overhead notifications, bird safe and bird retrofits, overhead critical operating equipment, radio and television interference investigations, regs/recl CM tag, and transformer labor reclassification. The discussion, which follows, pertains to areas where DRA's forecasts differ from PG&E's request.

1. Streetlight Group Replacements and Streetlight Burnouts

PG&E forecasts $0.325 million for streetlight group replacements and $6.409 million for streetlight burnouts. The streetlight group replacements program is considered preventive maintenance because streetlights are proactively replaced before a failure occurs while the streetlight burnouts program is corrective

maintenance because streetlights are replaced after they have failed.[60] DRA asked PG&E to explain why expenses for streetlight burnouts increased from 2007-2011.

DRA asked:[61]

> "Line 26, WP 5-10 'Total Cost of Streetlight Burnouts' – Please explain in detail the continual increase in total cost of streetlight burnouts inspected from 2007-2011. In particular, explain why annual recorded expenses for 2011 are substantially higher than annual recorded expenses for 2007-2010."

PG&E responded:

> "PG&E understands this question to refer to Line 27 of Workpaper Table 5-7 on page WP 5-10. The total cost of Streetlight Burnouts (which is a corrective maintenance replacement program, not an inspection program) increased in the recorded years 2007-2011 primarily due to an increase in the number of units (e.g., bulbs replaced) and an increased focus on replacing the bulbs in a more timely manner. Unit volumes increased throughout the 2007-2011 period (with 2008 having a 15 percent increase over the prior year, 2009 a 2 percent increase, 2010 a 6 percent increase, and 2011 a 10 percent increase). The main reason for the increase in unit volume was due to reduction in the amount of proactive streetlight replacements completed as part of the Streetlight Group Replacement program which is shown in line 26 of WP 5-10."

PG&E's response, supported by historical numbers, shows that there is an inverse relationship between streetlight replacements (preventive maintenance) and streetlight burnouts (corrective maintenance). The following tables provide the number of streetlight group replacements and streetlight burnouts from 2007 to 2012 and the associated costs.

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[60] Exhibit (PG&E-4) page 5-19

[61] DRA-128-EJ1 question 20

Table 5-12
Streetlight Group Replacements and Streetlight Burnouts
2007-2011 Recorded/PG&E's and DRA's TY2014 Forecast
(In Thousands of Dollars)

	2007	2008	2009	2010	2011	PG&E's TY2014	DRA's TY2014
Number of Group Replacements	19,378	13,294	4,472	1,208	739	5,000	5,000
Number of Burnouts	14,072	16,556	16,886	17,965	19,913	19,729	18,255
Cost per Group Replacement	$66	$54	$107	$97	$65	$65	$65
Cost per Burnout	$279	$251	$258	$254	$308	$325	$325
Total Cost of Streetlight Group Replacements (1000's)	**$1,483**	**$785**	**$513**	**$122**	**$48**	**$325**	**$325**
Total Cost of Streetlight Burnouts (1000's)	**$3,920**	**$4,160**	**$4,360**	**$4,559**	**$6,131**	**$6,409**	**$5,933**

Source: Exhibit (PG&E-4) WP 5-10

As the number of streetlight replacements and associated costs decreased from 2007-2011, the number of annual burnouts and associated costs increased from 2007-2011.

PG&E is forecasting 5,000 streetlight replacements starting in 2012 and continuing into the TY; this is 4,261 units or 576.59% greater than the 2011 amount of 739 units. PG&E is forecasting 19,729 burnouts in 2014; this is 183 units or 0.9% less than the 2011 amount of 19,913 units. PG&E stated that the reduction in streetlight replacements led to an increase in streetlight burnouts over the past five years; alternatively, as PG&E increases its number of replacements in the 2012-2014 timeframe, the number of streetlight burnouts and associated costs should decline more significantly than 183 units.

DRA accepts PG&E's forecast for 5,000 streetlight group replacements, and the associated costs of $0.325 million, with the expectation that the number of streetlight burnouts should notably decline. DRA's forecast of streetlight burnouts is 18,255 units, which DRA developed by using a 3-year average (2009-2011) of streetlight burnouts per year.[62] DRA developed its TY estimate of $5.930 million for

[62] See Table 5-12 for recorded 2009, 2010, and 2011 number of units.

streetlight burnouts by multiplying 18,255 units by PG&E's forecasted unit cost of $325, which is a higher unit cost than all recorded years since 2007. DRA's TY estimate of $5.930 million for streetlight burnouts is reasonable and should be adopted by the Commission.

2. Insulator Washing

PG&E forecasts $0.459 million for TY2014 insulator washing expenses.[63] PG&E's requested increase is 2086% over 2011 expenses of $0.021 million. DRA asked for additional information on PG&E's request.

DRA asked:[64]

> "Line 29, WP 5-10 'Total Cost of Poles – Insulator Washing' – Please provide a detailed explanation for the TY2014 forecast of $458,850 including an explanation as to why forecasted expenses are higher than historical annual expenses for 2007-2011. Provide all supporting documentation and calculations."

PG&E responded:

> "The purpose of insulator washing is to remove contamination on the surface of electric insulators before the insulation fails. A breakdown in the insulation can result in an outage, pole fire, or radio and television interference. Recorded costs for insulator washing between 2007 and 2011 fluctuated and were relatively low in 2010 and 2011. The fluctuations in the recorded costs reflected annual differences in number of insulators washed. PG&E's mission is to provide safe and reliable service to its customers. Since the process of insulator washing is a component of maintenance, and it enables PG&E to prevent contamination from building up to the point of causing outages or pole fires, it is imperative that it be reinstated and enhanced. Therefore, PG&E's 2014 forecast for insulator washing is higher than 2007-2011 recorded amounts because PG&E forecasts washing more insulators. In prior years, insulator washing was performed only in limited areas (where the insulators are exposed to corrosion from the marine layer). PG&E's 2014 forecast contemplates expanding the program throughout PG&E's service area. Please refer to Exhibit

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[63] Exhibit (PG&E-4) WP 5-10

[64] DRA-128-EJ1 question 22

(PG&E-4), Chapter 5, page 5-22, lines 2 to 9 for additional information."

PG&E's request is excessive and should be denied. PG&E did not provide sufficient documentation or calculations to demonstrate that it needs additional funding for this routine activity. DRA's corresponding TY estimate is $0.052 million, which was developed by using a 3-year average (2009-2011)[65] of recorded adjusted expenses for insulator washing.[66]

3. Idle Facilities

PG&E forecasts $3.819 million in expenses for the Idle Facilities project. In Exhibit DRA-8 (Electric Distribution Capital Expenditures, Part 2 of 2), DRA recommends that the Commission reject PG&E's request for funding of the Idle Facilities project. Therefore, DRA recommends that the Commission also reject the associated project expenses.

DRA's corresponding TY estimate for routine maintenance of idle facilities is $5,650. DRA developed its TY estimate by taking a 3-year average (2009-2011) of recorded expenses for idle facilities.[67]

4. Infrared Inspection and Tags

PG&E forecasts $13.500 million in expenses for its Infrared Inspection and Tags project. In Exhibit DRA-8 (Electric Distribution Capital Expenditures, Part 2 of 2), DRA recommends that the Commission reject PG&E's request for funding of the

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[65] DRA took an average of 2009, 2010, and 2011 expenses, expressed in 2011 dollars. DRA totaled forecasts for all line items within a MWC before escalating to 2014 nominal dollars. PG&E did not escalate individual line items. DRA employs this methodology in every instance within this exhibit where DRA bases its TY forecast on a multi-year average.

[66] 2009 recorded expenses = $110,819; 2010 recorded expenses = $23,080; 2011 recorded expenses = $21,024. The 3-year average is $51,641. Recorded expenses in 2011 dollars from DRA-128-EJ1 question 18.

[67] 2009 recorded expenses = $6,580; 2010 recorded expenses = $8,781, 2011 recorded expenses = $1,589. The 3-year average is $5,650. Recorded expenses in 2011 dollars from DRA-128-EJ1 question 18.

Infrared Inspection and Tags project. Therefore, DRA recommends that the Commission also reject the associated project expenses.

C. MWC KB

PG&E records expenses for underground maintenance of the electric distribution system in MWC KB. This includes underground notifications, critical operating equipment, bar code enclosures, oil switch replacements, and other underground maintenance work.[68] PG&E forecasts $17.253 million in expenses for MWC KB.[69] The corresponding DRA estimate for underground maintenance expenses is $13.557 million.

Table 5-13
2007-2011 Recorded Data and 2014 Forecast for MWC KB
(In Thousands of Dollars)

Activity Type	2007	2008	2009	2010	2011	PG&E's TY2014	DRA's TY2014
Underground Notifications	$14,029	$11,150	$11,654	$10,688	$15,189	$7,983	$7,983
Underground COE	$1,466	$1,720	$1,650	$2,174	$2,280	$3,484	$3,484
Underground Oil Switch Replacements	-	-	-	-	-	$1,500	$0
Transformer Labor Reclassification	-	-	-	-	$97	$130	$130
BART Cable Repair	-	-	$54	$18	-	$131	$27
Major Notifications	$65	$13	$159	$171	$665	$1,278	$1,278
Elbows/Splices Repl.	$195	$116	$240	$428	$285	$325	$325
UG Barcode Enclosures	-	-	-	-	-	$2,000	$0
Total MWC KB	**$16,815**	**$13,146**	**$13,670**	**$13,555**	**$18,354**	**$17,253**	**$13,557**

Source: Exhibit (PG&E-4) WP 5-11. Total MWC KB expenses are escalated for TY2014; individual line items are not.

DRA agrees with PG&E's TY expense forecast for the following items: Underground Notifications, Underground COE, Transformer Labor Reclassification, Major Notifications, and Elbows/Splice Replacement. The discussion, which follows, pertains to areas where DRA's forecasts differ from PG&E's request.

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[68] Exhibit (PG&E-4) page 5-25

[69] Exhibit (PG&E-4) WP 5-1

1. Underground Oil Switch Replacements

PG&E forecasts $1.500 million in expenses for its Underground Oil Switch Replacement project. In Exhibit DRA-8 (Electric Distribution Capital Expenditures, Part 2 of 2), DRA recommends that the Commission reject PG&E's request for funding of the Underground Oil Switch Replacement project. Therefore, DRA recommends that the Commission also reject the associated project expenses.

2. Bart Cable Repair

PG&E forecasts $131,250 in expenses for Bart Cable Repair. The corresponding DRA estimate is $25,648. DRA asked PG&E how it developed its TY forecast for BART cable repairs.

DRA asked:[70]

> "On WP 5-12, PG&E stated, 'Project cost is based on historical costs from 2008-2010.' PG&E has no historical costs for 2008; expenses for 2009 and 2010 are respectively $54,703 and $17,790. Provide a detailed explanation for how the TY2014 forecast of $131,250 was developed using historical costs. Provide all supporting documentation and calculations."

PG&E responded:

> "The complexity and cost of BART cable repair work are variable because they are dependent on the mixture of work required to mitigate a major failure. PG&E's 2014 forecast represents a base amount to make repairs. Due to the unforeseen nature of what this work could entail, these costs were estimated based on PG&E's professional judgment as to the potential repair cost for underground BART cable."

According to PG&E, "Bart cable repair work is reactive, i.e., PG&E only performs this work when a BART cable fails or is damaged."[71] No repairs were needed in 2007, 2008, or 2011, and repairs in 2009 and 2010 were substantially

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[70] DRA-128-EJ1 question 28b

[71] DRA-128-EJ1 question 28a

lower than PG&E's TY2014 forecast. PG&E does not provide any documentation or support to explain why additional funding is needed for Bart Cable Repairs. DRA developed its TY estimate of $25,648 by using a 3-year average of recorded expenses (2009-2011), expressed in 2011 dollars.[72]

3. Underground Barcode Enclosures

PG&E forecasts $2.0 million for its Underground (UG) Barcode Enclosures Program.[73] The UG Barcode Enclosures Program will establish a bar code scanning system that allows PG&E to identify data associated with underground enclosure equipment.[74]

DRA asked PG&E for more information about the program and discovered that the implementation of PG&E's UG Barcode Enclosures Program and the associated project benefits are dependent on the successful adoption of mobile technology by PG&E.

DRA asked:[75]

> "Please elaborate on how the UG Bar Code Scanning System will work and its impact on PG&E's future services and functions."

PG&E responded:

> "In conjunction with its regular cycle of underground inspections, PG&E will install a label with a bar code inside each of its primary underground facilities (enclosures, vaults and pad-mounts). Once the bar code is installed, PG&E will be able to electronically track future inspection cycles by requiring inspectors equipped with mobile technology to scan the bar code as part of their inspection. Having a bar code associated with each facility will also allow PG&E to improve

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[72] 2009 recorded expenses = $58,501; 2010 recorded expenses = $18,442, 2011 recorded expenses = $0. The 3-year average is $25,648. Recorded expenses in 2011 dollars from DRA-128-EJ1 question 27.

[73] Exhibit (PG&E-4) WP 5-48

[74] Exhibit (PG&E-4) WP 5-47

[75] DRA-128-EJ1 question 32a

the accuracy of its underground asset registry by making it possible to tie equipment inventories to particular locations by means of the bar code. The bar code will also allow PG&E to take advantage of other advantages associated with mobile technology, such as data accuracy, outage investigations efficiencies, and timely data input by avoiding the need to enter information on paper forms and/or refer to paper maps."

PG&E set the project start date for 2012. PG&E forecasted that it would install bar codes for 60,000 enclosures in 2012 for a total cost of $600,000.[76] DRA asked PG&E about the amount of work completed in 2012 for this project.

DRA asked:[77]

"Identify the number of enclosures that had a bar code installed in 2012 and the associated expense for each unit. Provide supporting documentation."

PG&E responded:

"No bar codes were installed on underground facilities in 2012. The mobile technology that will be used in conjunction with the underground bar codes is still under development and has not been implemented yet. PG&E plans to initiate the bar coding process in conjunction with the roll out of the mobile technology, which PG&E currently expects will occur in 2013."

In its 2012 forecast, PG&E misjudged the period and associated costs for the project, which is subject to the roll out of mobile technology.

DRA considered the cost savings and benefits of the UG Barcodes Enclosures Project and asked PG&E for any cost-analyses associated with the project.[78] PG&E stated, "There are no cost reductions or avoidances associated with this project. The primary purpose of the project is improved asset inventory knowledge and

[76] Exhibit (PG&E-4) WP 5-47

[77] DRA-128-EJ1 question 32b

[78] DRA-128-EJ1 question 32j

management."[79] The project has little to no ratepayer value. PG&E provided no additional documentation or analyses to substantiate its request of $2.0 million.

It is premature to ask for $2.0 million of ratepayer funding for a project relying so heavily on technology that is still in development, especially when there are no cost reductions or avoidances associated with the project. It is not the appropriate time to implement this largely discretional and expensive project. DRA recommends that the Commission deny PG&E's request for funding at this time.

D. MWC KC

PG&E records its expenses for network activities and projects in MWC KC. This includes network notifications, transformer oil sampling and oil replacement, network protector maintenance, and other maintenance work.[80] PG&E forecasts $5.992 million in expenses for MWC BK.[81]

Table 5-14
2007-2011 Recorded Data for MWC KC
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
KC – E Dist. Maint-Network	$3,884	$10,660	$7,214	$7,560	$7,930

Source: Exhibit (PG&E-4) WP 5-1

After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's request for $5.992 million in expenses for MWC BK.

E. MWC BK

PG&E records its expenses for Distribution Line Equipment Overhauls in MWC BK. Repairs and overhauls for distribution line equipment extend the useful service life of equipment such as transformers, voltage regulators, circuit reclosers,

[79] Exhibit (PG&E-4) WP 5-49

[80] Exhibit (PG&E-4) page 5-27

[81] Exhibit (PG&E-4) WP 5-1

capacitor banks, and line switches.[82] PG&E forecasts $2.713 million in TY expenses for MWC BK.[83]

Table 5-15
2007-2011 Recorded Data for MWC BK
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
BK – Maint Other Equip	$4,904	$5,555	$(1,963)	$2,913	$2,353

Source: Exhibit (PG&E-4) WP 5-1

After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's request for $2.713 million in expenses for MWC BK.

VII. DISCUSSION / ANALYSIS OF POLE TEST AND TREAT, RESTORATION, AND JOINT UTILITIES COORDINATION

PG&E's Pole Test and Treat, Restoration and Joint Utilities Coordination programs maintain PG&E's expansive system of distribution poles. PG&E forecasts $16.177 million for TY2014 program expenses, which is an increase of $9.567 million or 146.06 % over 2011 expenses of $6.550 million.[84] DRA's estimate for PG&E's pole-related expenses is $12.267 million, which is $3.85 million less than PG&E's forecast of $16.117 million. DRA's TY estimate is $5.717 million more than PG&E's 2011 recorded adjusted expenses of $6.550 million.

[82] Exhibit (PG&E-4) page 5-33

[83] Exhibit (PG&E-4) WP 5-1

[84] Exhibit (PG&E-4) page 6-1

The following table summarizes PG&E's request and DRA's recommendation for MWC GA – Pole Test and Treat, Restoration, and Joint Utilities Coordination.

Table 5-16
Electric Distribution Expenses for TY2014
Pole Test and Treat, Restoration, and Joint Utilities Coordination
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[85] (c)
GA – Poles- Inven/Test & Treat	$12,267	$16,117

A. MWC GA

PG&E records expenses for its Pole Test and Treat, Restoration and Joint Utilities Coordination Programs in Major Work Category (MWC) GA. PG&E developed its forecast based on the forecast units of work and the unit costs to perform the work.[86]

Table 5-17
2007-2011 Recorded Data for MWC GA
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
GA – Poles- Inven/Test & Treat	$12,756	$12,515	$9,807	$6,382	$6,550

Source: Exhibit (PG&E-4) WP 6-1.

All poles in PG&E's electric distribution system are tested and treated on a continuous 10-year cycle. PG&E inspected 2.2 million poles during its first 10-year cycle from 1995-2004 and started its second cycle in 2005.[87] The following table shows the number of poles PG&E inspected annually since 2005, the beginning of PG&E's second 10-year cycle.

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[85] Exhibit (PG&E-4) WP 6-1

[86] Exhibit (PG&E-4) page 6-13

[87] Exhibit (PG&E-4) page 6-3

Table 5-18
2005-2012 Poles Inspected Annually and TY2014 Forecast

2005	2006	2007	2008	2009	2010	2011	2012	PG&E's TY2014 Forecast	DRA's TY2014 Forecast
239,512	206,230	247,412	246,942	165,144	189,234	218,519	258,868	312,500	235,000

Source: 2005-2011 data from DRA-033-EJ1 question 1. 2012 data from DRA-172-EJ1 question 1.

PG&E stated that its 2014 expense forecast is $9.6 million higher than 2011 recorded costs "due to an increase in the forecast number of poles requiring work between 2012-2014 because the Company inspected fewer poles during 2009-2011 than prior years."[88] In order to maintain its 10-year cycle, PG&E plans to increase the number of poles inspected to 312,500 in 2014.

PG&E stated the reduction in pole inspections is "due to the reallocation of resources to other activities (e.g., emergency recovery)."[89] PG&E is responsible for crucial ongoing maintenance activities even if it chooses to reallocate its resources. DRA asked PG&E to provide a list of the resources that was reallocated from MWC GA. PG&E was unable to provide this information.

DRA asked:[90]

> "Provide a detailed and itemized list of the resources (labor and non-labor dollars) that was reallocated from MWC GA to other areas within PG&E."

PG&E responded:

> "PG&E tracks reallocation of resources at the Major Work Category (MWC) level in terms of whether more or less than forecast was spent

[88] Exhibit (PG&E-4) page 6-1

[89] Exhibit (PG&E-4) page 6-8

[90] DRA-033-EJ1 question 4

within a particular MWC, not as an "itemized list of resources (labor and non-labor dollars)."

PG&E's reduction in pole inspections from 2009-2011 is a result of deferred maintenance. PG&E routinely receives funding for ongoing and essential maintenance activities including maintenance on PG&E's system of electric distribution poles. In the 2011 GRC, PG&E projected $16.462 million in expenses for MWC GA,[91] of which the entire amount was adopted by the CPUC.[92] PG&E's recorded expenses for 2011 were $6.550 million. PG&E's underspending of its 2011 forecast and Commission-authorized funding in MWC GA by $9.612 million was a discretionary decision of PG&E and has directly resulted in the current delayed pole test and treat work.[93] This is not a one-time occurrence; PG&E has annually underspent its Commission-authorized expenses for MWC GA by millions of dollars for the past five years (2007-2011).[94]

Regarding deferred maintenance the Commission has stated the following:[95]

> For us to authorize Edison's recovery of deferred maintenance expense would establish an undesirable precedent, whereby the utility is effectively guaranteed that it can earn (or exceed) its authorized rate of return, regardless of its operating efficiency or inefficiency, simply by curtailing current maintenance activities, in the assurance that they could be refinanced later through recovery of deferred maintenance expenses in a succeeding rate case. This would create a perverse incentive for the utility to defer needed maintenance in the future. Consequently, we will disallow recovery of the $34.6 million requested for deferred maintenance activities in 1983 and 1984. Our disallowance of this expense for test year ratemaking purposes does not relieve Edison of its responsibility to maintain the operating

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[91] DRA-172-EJ1 question 2

[92] DRA-172-EJ1 question 3

[93] DRA-033-EJ1 question 4

[94] See Table 5-2 "2007-2011 Authorized vs. Recorded Electric Distribution Expenses" of this exhibit

[95] 10 CPUC 2d 155,186; D.82-12-055.

efficiency of its utility plant in a timely manner. Indeed, we expect Edison to fulfill that responsibility more conscientiously in the future.

In its decision in SCE's TY 2009 GRC, the Commission stated:[96]

> In the past we have found circumstances, such as the unanticipated scope of Year 2000 (Y2K) projects, to justify deferral of certain maintenance work. The circumstances surrounding Y2K and the related Y2K projects were one-time events and, as such, unique. In contrast, we do not find customer and load growth, even when unanticipated, to create unique circumstances. Load growth and customer growth are routine aspects of any rate case. If the adopted forecast overestimates expenses, we do not ask a utility to return funds to ratepayers. Similarly, if an adopted forecast underestimates expenses, we do not go back and give the utility funds to complete projects that should have been addressed in the prior GRC cycle. In short, errors in forecasting occur and we do not go back and fix those errors.
>
> Consistent with our policy regarding deferred maintenance, in certain instances in this decision, we adopt reductions to SCE's forecast for operation and maintenance and capital expenditures to reflect our finding that unanticipated load and customer growth does not justify SCE's decision to, among other things, defer maintenance.

Ratepayers should not be charged twice for routine and on-going maintenance work that was deferred by PG&E. PG&E's shareholders, and not ratepayers, are responsible for additional costs associated with deferred maintenance.

1. Pole Inspections

PG&E forecasts that it will inspect 312,500 poles in 2014,[97] which is 93,981 poles or 43% higher than the 218,519 pole inspections conducted in 2011.[98] There is no historical data to justify PG&E's increase in pole inspections other than a deferral of inspections that should have been conducted in prior years. Since the

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[96] D.09-03-025, pp 4-5.

[97] Exhibit (PG&E-4) WP 6-7

[98] DRA-033-EJ1 question 1

start of PG&E's second 10-year inspection cycle in 2005, the greatest number of pole inspections was 258,868 poles in 2012 (see Table 5-18), which was still significantly higher than previous years.[99] In addition, both the 2012 number of poles and associated expenses for MWC GA were less than that forecasted by PG&E in the 2014 GRC Application.[100]

DRA also reviewed PG&E's first 10-year inspection cycle from 1995-2004. The following table provides the number of poles inspected annually from 1995-2005.

Table 5-19
1995-2005 Poles Inspected Annually

1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
131,829	168,033	293,423	264,745	256,409	199,407	213,829	263,645	187,701	256,405	58,200

Source: DRA-172-EJ1 question 6.

Only once, in 1997, did PG&E exceed an annual inspection of 264,745 poles during its first 10-year inspection cycle from 1995-2004. PG&E was also not able to "finish its first inspection cycle until a few months into the year 2005."[101] PG&E has demonstrated that there is no historical grounding for an unrealistic TY forecast of 312,500 pole inspections.

B. DRA's Analysis

DRA opposes PG&E's TY2014 request for $16.777 million, the amount PG&E forecasts it needs in order to inspect 312,500 poles in 2014. As noted, the request is a consequence of deferred maintenance by PG&E. Despite receiving ample

[99] DRA-033-EJ1 question 1

[100] Exhibit (PG&E-4) WP 6-7

[101] DRA-172-EJ1 question 6

funding from ratepayers in previous years for MWC GA,[102] there is an extreme backlog of poles that need to be inspected in order for PG&E to remain on its 10-year cycle.

DRA proposes a TY2014 forecast of $12.267 million, the amount DRA estimates PG&E needs in order to inspect 235,000 poles in 2014. PG&E identified the number of poles that it plans to inspect in its second 10-year cycle as approximately 2.35 million; the number is generous and includes "inspections that cover new and removed poles" in addition to the "approximately 2.2 million wood poles in the PG&E system."[103] In order to maintain a 10-year inspection cycle, PG&E should annually inspect 235,000 poles.[104] This figure represents a normal test year figure that should be funded by ratepayers in TY2014. By providing sufficient funding for 235,000 pole inspections in 2014, DRA ensures that ratepayers only pay once for routine maintenance; shareholders should be responsible for expenses associated with backlogged poles and deferred maintenance. DRA's forecast for 235,000 poles is also much more realistic than PG&E's forecast of 312,500 poles based on the historical number of pole inspections, and represents a normalized test year forecast.

DRA developed its forecast by multiplying 235,000 poles by PG&E's forecast unit cost to perform a pole inspection. A percentage of the 235,000 poles have additional costs associated with strength and load calculations and pole restoration; DRA multiplied the number of poles requiring strength and load calculations and pole restoration by the corresponding unit costs.[105] DRA accepted all assumptions by PG&E other than annual pole inspections.

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[102] DRA-172-EJ1 question 3

[103] DRA-223-EJ1 question 1

[104] 2.35 million poles divided by 10 years is 235,000 poles per year

[105] DRA developed its test year estimate using active Workpaper Table 6-7 provided by PG&E in response to DRA-172-EJ1 question 5. DRA input 235,000 poles under "Test & Treat Poles - Current Year" in order to forecast the number of pole inspections, strength and load calculations, and pole

(continued on next page)

VIII. DISCUSSION / ANALYSIS OF NEW BUSINESS and WORK AT THE REQUEST OF OTHERS

The New Business (NB) and Work at the Request of Others (WRO) program consists of work that PG&E performs at the request of its customers and other facilities.[106] PG&E forecasts $21.231 million for TY2014 NB/WRO expenses, which is an increase of $6.016 million or 39.54% over 2011 expenses of $15.215 million.[107] The NB/WRO program is recorded in two Major Work Categories (MWCs): EV for New Business with a forecast of $10.781 million, and NB for Work at the Request of Others with a forecast of $10.450 million.[108] The corresponding DRA estimate for NB/WRO expenses is $19.393 million, which is $1.848 million less than PG&E's TY forecast of $21.231 million.

The following table summarizes PG&E's request and DRA's recommendation for the MWCs within New Business and Work at the Request of Others.

Table 5-20
Electric Distribution Expenses for TY2014
New Business and Work at the Request of Others
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[109] (c)
EV – Manage Service Inquiries	$8,933	$10,781
EW – WRO- Maintenance	$10,450	$10,450
Total	$19,383	$21,231

(continued from previous page)
restorations, and the corresponding costs. DRA accepted all assumptions by PG&E other than annual pole inspections.

[106] Exhibit (PG&E-4) page 9-1

[107] Exhibit (PG&E-4) WP 9-1

[108] Exhibit (PG&E-4) WP 9-1

[109] Exhibit (PG&E-4) WP 9-1

A. MWC EV

PG&E records expenses for new business in MWC EV. New Business consists of the work required to connect new customers to both the electric and gas distribution system as well as provide additional load to existing customers.[110] PG&E forecasts $10.781 million for TY2014 NB/WRO expenses, which is an increase of $4.587 million or 74.06% over 2011 expenses of $6.194 million.[111] PG&E organizes work within MWC EV into two MAT codes: MAT EVA for Service Inquiry for New Customers and MAT EVB for OK to Serve for Existing Customers.

Table 5-21
2007-2012 Recorded Data
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011	2012
EV – Manage Service Inquiries	$20,235	$20,065	$13,370	$7,199	$6,194	$6,838

Source: Exhibit (PG&E-4) WP 9-1.

The corresponding DRA estimate for MWC EV is $8.933 million, which is $1.848 million less than PG&E's 2011 forecast of $10.781 million. DRA's TY estimate is $2.739 million or 44.22% higher than PG&E's 2011 recorded expenses of $6.194 million, and $2.095 million or 30.64 % higher than PG&E's 2012 recorded expenses of $6.838 million.

1. MAT EVA – New Business Service Inquiry

MAT EVA records expenses for new customer connections. PG&E forecasts $5.500 million for TY2014 EVA expenses, which is an increase of $2.679 million or 94.96% over 2011 expenses of $2.821 million.[112] PG&E's forecast is driven by the total number of service applications anticipated in 2014. PG&E's forecast for service applications is calculated using the total forecasted gas and electric connects

[110] Exhibit (PG&E-4) page 9-1

[111] Exhibit (PG&E-4) WP 9-2

[112] Exhibit (PG&E-4) WP 9-8

divided by the average ratio of connects to applications over the past three years.[113] PG&E used new building permit and housing start forecast data from Moody's Investor Service (Moody's)/Economy.com and IHS Global Insight to forecast new residential and non-residential connections in the distribution system.[114]

The corresponding DRA estimate for MAT EVA is $4.900 million. DRA developed its forecast using the 2012 ratio of connects to applications. PG&E's forecasted ratio of connects to applications is 2.9, signifying that for every 2.9 gas or electric connections made to the distribution system, PG&E anticipates there will be 1 service application processed. PG&E developed the ratio of 2.9 using a 3-year average of connects to applications (2009-2011). DRA's corresponding ratio of connects to application is 3.3, which is the 2012 ratio of connects to applications. This number is appropriate because it reflects the most recent data and market conditions.

DRA's forecast of $4.900 million for MAT EVA is $2.079 million or 73.70% greater than PG&E's 2011 recorded adjusted expenses of $2.821 and is sufficient for PG&E to address an increase in business service inquiries.

2. MAT EVB – Ok to Serve

MAT EVB work records expenses for existing customers who need additional load or upgraded services. The base forecast for MAT EVB uses the average annual percent change in PG&E's electric customer base.[115] DRA agrees with PG&E's forecast of $3.100 million in expenses for base MAT EVB work that is not associated with PEV expenditures.

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[113] Exhibit (PG&E-4) page 9-11

[114] Exhibit (PG&E-4) page 9-5

[115] Exhibit (PG&E-4) page 9-12

3. MAT EVB – Ok to Serve/ PEV Related

PG&E separately forecasts expenses associated with added load service requests involving the purchase of Plug-in-Electric Vehicles (PEVs). PG&E forecasts $1.900 million for PEV-related work, which is $1.600 million or 533.33% greater than the 2011 recorded adjusted expense of $0.300 million.[116] The forecast for MAT EVB was developed by multiplying the number of PEV applications processed by the estimated cost to process each application. In order to do so, PG&E developed TY2014 forecasts for the following items: PEV sales, application rate, and cost-per-application processing.[117]

The corresponding DRA estimate for MAT EVB is $0.700 million. Table 5-22 shows 2011 PEV data and compares PG&E's TY2014 forecast to DRA's TY2014 forecast.

Table 5-22
Recorded 2011 PEV Data and TY2014 Forecast
(Expenses in Thousands of Dollars)

	2011	PG&E's TY2014	DRA's TY2014
Number of PEV Sales	3,000	6,300	6,000
Application Rate	40%	100%	40%
PEV Applications Processed	1,200	6,300	2,400
Cost-per-application processing	$0.30	$0.30	$0.30
Total MAT EVB	**$360**	**$1,900**	**$700**

Source: 2011 Data and PG&E's TY2014 forecast from Exhibit (PG&E-4) WP 9-10. No PEV data prior to 2011 was provided.

DRA adjusted PG&E's forecasted application rate. PG&E forecasted that 100% of PEV consumers would start contacting PG&E directly upon purchase of an electric vehicle and therefore, the number of PEV Applications processed would be the same as the number of PEV Sales. DRA asked PG&E to explain why the

[116] Exhibit (PG&E-4) WP 9-10

[117] Exhibit (PG&E-4) WP 9-10

application rate for PEV load requests was forecasted to increase in 2012 and to identify the 2012 application rate.

DRA asked:[118]

> "On WP 9-10, PG&E stated: 'Early PEV sales data indicate that only 40% of consumers were contacting PG&E directly upon purchase of an electric vehicle. Starting in late 2011, PG&E started a process with auto manufacturers and sales outlets to identify all PEV consumers for load checks, increasing the load check rate to 100% of sales.' Please elaborate on this process and identify the load check rate in 2012."

PG&E responded:

> "Starting in 2012, PG&E reached agreements with both General Motors and Nissan to provide customer information on electric vehicle sales, but with an opt-out provision for customers who do not wish to have this information released. Even with this additional information source, PG&E only identified 38 percent of all electric vehicle sales in 2012 on which to perform load checks (2,264 assessments on 6,000 vehicle purchases). PG&E continues to pursue additional avenues, including California Department of Motor Vehicle information, to identify new electric vehicles and ownership transfers to improve load assessment rates."

PG&E's agreements with General Motors and Nissan did not increase the application rate to 100% as PG&E anticipated. The application rate lowered from 40% in 2011 to 38% in 2012. While "PG&E continues to pursue additional avenues… to identify new electric vehicles and ownership transfers to improve load assessment rates," it is not clear what these additional avenues are, when they will be implemented, or how effective they will be. There is currently no evidence that the application percentage will change over the next couple of years. Therefore, DRA uses the 40% application rate in developing its TY forecast.

DRA also made a minor adjustment to PG&E's forecasted PEV sales. PG&E forecasted the 2014 number of PEV sales to be 6,300 PEVs; the sales data was

[118] DRA-181-EJ1 question 10

supplied by PG&E's Emerging Market and Technologies Department.[119] DRA asked PG&E to identify the number of PEV sales in 2012. PG&E estimated, based on Clean Vehicle Rebate Project reported rebates, that 2012 PEV sales in PG&E's service was 6,000 PEVs.[120] Despite uncertainty in the PEV market, DRA uses 6,000 PEV sales in developing its TY2014 forecast.

The growth of the PEV market and associated costs remains largely uncertain. PG&E provided DRA with a copy of the "Joint IOU Electric Load Research Final Report," which was filed on December 28, 2012.[121] The report was compiled in response to D.11-07-029, which ordered PG&E, San Diego Gas & Electric (SDG&E), and Southern California Edison (SCE) to evaluate service upgrade costs associated with the PEV load.[122] Data supporting the report was tracked from June 2011 to October 2012.

The report concluded that thus far there is little evidence that added PEV load increases service upgrade costs. The report stated: "Through monitoring service upgrade costs due to new PEV load, the IOUs have determined the costs are currently insignificant". In regards to PG&E, "PG&E acknowledges that the PEV customer specific costs to date have been *de minimus,* but believes that it is too early to understand what the potential magnitude of upgrade costs might be given further EV penetration."[123] There is little indication that PEV-related costs will increase drastically over the next few years. DRA's forecast of $0.700 million, which more than doubles PG&E's recorded expenses from 2011, is reasonable and should be adopted by the Commission.

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[119] Exhibit (PG&E-4) WP 9-10

[120] DRA-181-EJ1 question 11a

[121] DRA-181-EJ1 question 11b

[122] "Joint IOU Electric Vehicle Load Research Final Report" filed on December 28, 2012. R.09-08-009 Ordered in D.11-07-029. Page 3.

[123] "Joint IOU Electric Vehicle Load Research Final Report" filed on December 28, 2012. R.09-08-009 Ordered in D.11-07-029. Page 4.

B. MWC EW

PG&E records expenses for Work at the Request of Others (WRO) in MWC EW. WRO is work required by tariffs and franchise agreements and covers relocations, interconnection services, and pre-parallel inspections.[124] PG&E forecasts $10.450 million for TY EW expenses, which is an increase of $1.429 million or 15.84% over 2011 expenses of $9.021 million.[125]

Table 5-23
2007-2011 Recorded Data for MWC EW
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
EW – WRO- Maintenance	$11,300	$12,969	$12,670	$6,991	$9,021

Source: Exhibit (PG&E-4) WP 9-1.

After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's TY2014 forecast for MWC EW.

IX. DISCUSSION / ANALYSIS OF ELECTRIC EMERGENCY RECOVERY

The Electric Emergency Recovery Program (EER) responds to emergency outages, ranging from routine emergencies that result from equipment failures to major emergencies that arise from severe storms and other disasters. PG&E forecasts $117.347 million for TY2014 EER expenses.[126] The corresponding DRA estimate for Electric Emergency Recovery expenses is $113.689 million, which is $3.657 million less than PG&E's forecast of $117.346 million.

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[124] Exhibit (PG&E-4) page 9-13

[125] Exhibit (PG&E-4) WP 9-1

[126] Exhibit (PG&E-4) WP 10-1

Electric Emergency Recovery expenses are recorded in two Major Work Categories: BH for Corrective Maintenance – Expense with a forecast of $72.608 million and IF for Major Emergencies – Expense with a forecast of $44.739 million. The following table summarizes PG&E's request and DRA's recommendation for the MWCs within Electric Emergency Recovery.

Table 5-24
Electric Distribution Expenses for TY2014
Electric Emergency Recovery
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[127] (c)
BH – Perf Maint to Corr Fail	$72,608	$72,608
IF – ED Major Emergency	$41,081	$44,739
Total	$113,689	$117,347

A. MWC BH – Corrective Maintenance Expense

MWC BH records corrective maintenance expenses associated with routine outages. PG&E forecasts $72.608 million in expenses for MWC BH. PG&E developed its forecast by taking an average of 2009-2011 recorded costs. Additionally, EER is forecasting a 5 percent shift of expenditures from expense to capital due to implementing Mobile Connect.[128]

Table 5-25
2007-2011 Recorded Data for MWC BH
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
BH – Perf Maint to Corr Fail	$60,195	$61,031	$71,048	$72,534	$75,955

Source: Exhibit (PG&E-4) WP 10-1.

[127] Exhibit (PG&E-4) WP 10-1

[128] Exhibit (PG&E-4) page 10-15

After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's TY forecast for MWC BH.

B. MWC IF

MWC IF records expenses associated with major emergencies. PG&E forecasts $44.739 million in expenses for MWC IF. PG&E developed its forecast by taking a 5-year average of 2007-2011 recorded costs.[129] According to PG&E, recorded expenses for 2007-2011 have been adjusted to remove authorized recovery costs related to the Catastrophic Event Memorandum Account (CEMA). CEMA allows PG&E to recover costs for government declared state of emergencies and this cost recovery mechanism is separate from the GRC.[130]

The corresponding DRA estimate for major emergencies expenses is $41.081 million. In its forecast, PG&E did not adjust the recorded expenses to remove CEMA related-costs associated with Application (A.) 11-09-014. Although the Commission has not issued a final decision, all involved parties reached a settlement. The Settling Parties agreed to a CEMA-related cost recovery of $17.844 million.[131] DRA developed its TY forecast of $41.081 million by removing these CEMA-related costs from the 2007-2011 recorded expenditures, shown in Table 5-25, before taking a 5-year average of 2007-2011 costs. DRA's forecast for MWC IF is reasonable and should be adopted by the Commission, because it ensures that there is no double recovery of costs through the CEMA mechanism and the GRC.

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[129] Exhibit (PG&E-4) page10-20

[130] Exhibit (PG&E-4) page10-20

[131] A.11-09-0014 Application of Pacific Gas and Electric Company to Recover Costs Recorded in the Catastrophic Event Memorandum Account Pursuant to Public Utilities Code Section 454.9 Associated with Certain Declared Disasters Between August 2009 and March 2011

Table 5-26
2007-2011 Recorded Data for MWC IF
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
IF – ED Major Emergency	$9,264	$40,798	$30,524	$51,797	$80,428

Source: Exhibit (PG&E-4) WP 10-1. These figures do not incorporate the $17.844 million adjustment made by DRA in its test year forecast.

1. PG&E's Request for a Two-Way Balancing Account

PG&E is proposing a two-way balancing account for MWC IF to recover costs for major emergencies that do not qualify for cost recovery through the Catastrophic Event Memorandum Account mechanism.[132] DRA recommends that the Commission deny PG&E's request for a two way balancing account to recover non-CEMA related emergency costs. The Commission has a procedure established for PG&E to make its request for recovery of extraordinary incremental costs related to catastrophic events. Establishing another balancing account for recovery of expenses associated with emergencies that do not qualify for CEMA cost recovery is unnecessary and unreasonable because it would offer a "blank check" to PG&E at ratepayers' expense.

X. DISCUSSION / ANALYSIS OF SUBSTATION ASSET STRATEGY

Substation Asset Strategy refers to the maintenance of PG&E's 770 distribution substations, consisting of transformers, voltage regulation equipment, protective devices, automation equipment, and bus structure equipment.[133] PG&E forecasts $40.064 million for Substation Asset Strategy expenses for TY2014, which

[132] Exhibit (PG&E-4) page 10-21

[133] Exhibit (PG&E-4) page 13-1

is an increase of $6.988 million or 21% over 2011 expenses of $33.077 million.[134] The corresponding DRA estimate is $35.452 million, which is $4.612 million less than PG&E's forecast of $40.064 million, and $2.375 million higher than 2011 recorded expenses.

The following table summarizes PG&E's request and DRA's recommendation for the MWCs within Substation Asset Strategy. PG&E's forecast includes expenses for corrective maintenance, preventive maintenance, and substation support activities.

Table 5-27
Electric Distribution Expenses for TY2014
Substation Asset Strategy
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[135] (c)
Corrective Maintenance	$10,372	$14,142
Preventive Maintenance	$16,505	$16,505
Substation Support Activities	$7,697	$8,425
GC – Dist. Sub: Maintain and Operate	$35,452	$40,064

A. MWC GC

PG&E records expenses for Substation Asset Strategy in Major Work Category (MWC) GC.

Table 5-28
2007-2011 Recorded Data for MWC GC
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
GC – Dist. Sub: Maintain & Operate	$30,952	$31,148	$30,707	$29,677	$33,077

Source: Exhibit (PG&E-4) WP 13-1

[134] Exhibit (PG&E-4) WP 13-1

[135] Exhibit (PG&E-4) WP 13-1

1. Corrective Maintenance

Corrective Maintenance includes the repair of failed equipment.[136] PG&E forecasts $14.142 million in expenses for corrective maintenance, which is an increase of $3.521 million or 33.15% over 2011 expense levels.[137] The forecast was developed by multiplying the forecasted number of notifications by the forecasted cost per notification.[138] The corresponding DRA estimate for corrective maintenance expenses is $10.372 million.

During discovery, DRA identified errors with PG&E's cost per notification for 2011, on which PG&E's TY2014 forecast is based.

DRA asked:[139]

> "The 2011 unit cost for corrective maintenance is '$4.131' in PG&E's response to Question 2 of DR-DRA-016; the 2011 unit cost is '$4.600' on WP 13-7. Please clarify the discrepancy. Note that PG&E uses the last year recorded (2011) as the basis for the TY2014 cost per notification."

PG&E's responded:

> "The discrepancy is due to an error in the spreadsheet used in the forecast and provided as a workpaper. That spreadsheet did not have the most up-to-date information for the number of corrective notifications recorded in 2011. The correct total number of maintenance notifications recorded in 2011 is 2,571, not 2,265, and the correct unit cost is $4.131 thousand. PG&E will correct this in the upcoming errata filing."

Using the corrected information, DRA noted that the cost per notification for corrective maintenance declined notably from $4,131 in 2011 to $3,446 in 2012. In order to take into account fluctuations in cost-per-notification throughout the years,

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[136] Exhibit (PG&E-4) page 13-6

[137] Exhibit (PG&E-4) page 13-1

[138] Exhibit (PG&E-4) WP 13-7

[139] DRA- EJ1-191 question 2

DRA developed its forecast using a four-year average of recorded unit costs (2009-2012).[140] DRA agrees with PG&E's forecasted increase in number of notifications. DRA developed its forecast of $10.372 by multiplying the four-year average of recorded unit costs by PG&E's forecasted number of notifications. Table 5-27 shows PG&E's number of notifications, cost per notification, and total corrective maintenance expenses from 2007-2012 as well as the TY2014 forecast for PG&E and DRA.

Table 5-29
Corrective Maintenance
2009-2012 Number of Notifications & Cost per Notification
PG&E's & DRA's TY2014 Forecast
(Expenses Shown in Thousands of Dollars)

	2009	2010	2011	2012	PG&E's TY2014	DRA's TY2014
Number of Notifications (in thousands)	2,451	2,234	2,571	3,235	3,074	3,074
Cost per Notification	$2.754	$3.166	$4.131	$3.446	$4.600	$3.374
Corrective Maintenance Total	**$6,750**	**$7,072**	**$10,621**	**$11,148**	**$14,142**	**$10,372**

Source: 2009-2011 data from Exhibit (PG&E-4) WP 13-7. 2012 Data from DRA-191-EJ1 question 1.

DRA's forecast of $10.372 million for corrective maintenance expenses is reasonable because it was developed using historical unit costs, but also takes into account PG&E's expected increase in corrective maintenance notifications.

2. Preventive Maintenance

Preventive Maintenance includes inspections, switching and restoring service to customers, calibration and adjustment, and other routine maintenance work performed on PG&E's substations. PG&E forecasts $16.505 million in TY expenses for preventive maintenance. PG&E developed its forecast by multiplying the number of planned units in 2012 times a 2-year average of cost.[141] After reviewing PG&E's

[140] See Table 5-28. Unit cost prior to 2009 was not provided.

[141] Exhibit (PG&E-4) page 13-6

testimony, workpapers, and discovery responses, DRA agrees with PG&E's request of expenses for preventive maintenance.

3. Substation Support Activities

Substation Support Activities include all other projects or staff that support PG&E's substation system including SAS engineering staff, system funded projects, miscellaneous materials and contracts, and vegetation management.[142] PG&E is forecasting $8.550 million in TY expense for substation support activities. PG&E forecasted most TY expenses for substation support activities using a 3-year average (2009-2011) of recorded adjusted costs for each activity.[143] The corresponding DRA estimate is $7.697 million.

PG&E forecasts $2.500 million for System Funded Projects, one of PG&E's substation support activities. System funded projects include lease payments, facility costs, license fees, various studies, transformer relocation costs, and other work.[144] PG&E developed its TY forecast for System Funded project by taking a 3-year average (2009-2011) of recorded costs and adding $0.900 million for incremental costs over 2011 recorded expenses. PG&E's forecast of $2.500 million for system funded projects is 89.97% over 2011 recorded costs of $1.316 million.

PG&E forecasts an incremental increase of $0.500 million for the relocation of two transformers ($0.250 million per transformer) as part of TY expenses for System Funded Projects. PG&E currently has approximately 18 transformers in storage and plans to relocate two transformers per year starting in 2012.[145] DRA asked PG&E to explain why PG&E needs additional funding for transformer relocations starting in 2012 and continuing into the TY.

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[142] Exhibit (PG&E-4) WP 13-7

[143] Exhibit (PG&E-4) WP 13-7

[144] DRA-EJ1-191 question 5

[145] DRA-EJ1-016 question 10

DRA asked:[146]

> "PG&E stated that it "currently has approximately 18 transformers in storage that the Company can use for future projects." Why has PG&E waited until now to relocate its transformers at two relocations per year?"

PG&E's responded:

> "PG&E believes it is not economical to maintain a large inventory of surplus transformers in storage. The condition of a used transformer may deteriorate over time if not in-service, due to factors such as the settling of oil. The level of surplus transformers has increased as transformers are replaced in order to increase capacity. PG&E anticipates relocating surplus transformers on an annual basis as a part of regular business practice."

Historically, PG&E has not conducted transformer relocations at the rate being proposed in this GRC. PG&E only relocated one transformer in the 2009-2011 time period, a process which PG&E claims is not even complete. When DRA asked PG&E for information about this relocation, PG&E stated: "The total cost, including 2013 year-to-date, is $85,592. The reassembly, refilling of oil and dress and testing of the transformer have not yet been performed. This relocation is not representative of transformer relocation costs because the "relocation" is not yet complete. Aside from the aforementioned costs, there were no other costs recorded or reallocated."[147]

Transformer relocations are low priority work for PG&E and PG&E did not provide sufficient supporting documentation or cost benefit analyses to substantiate its request. DRA opposes additional funding for transformer relocations based on the fact that PG&E has only performed one relocation over a three-year period.

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[146] DRA-EJ1-191 question 7c

[147] DRA-EJ1-191 question 7b

DRA asked PG&E about other incremental funding forecasted in TY expenses for system funded projects.

DRA asked:[148]

> "Identify, explain, and justify all costs, other than transformer relocation costs that were added to the 3-year average."

PG&E's responded:

> "In addition to the transformer relocations, PG&E included $400,000 in the forecast to support programmatic substation reliability improvement activities. The amount is based on PG&E's engineering judgment. There is no specific calculation associated with the value. PG&E anticipates it will use this portion of the funding forecast for emergent work such as supplemental circuit breaker maintenance to reduce breaker failure rates, seismic studies for critical substation facilities and, to develop restoration plans for critical substation facilities."

PG&E did not provide sufficient documentation or analyses to support its request for $0.400 million, nor did it provide a breakdown of costs. The request for system funded projects is excessive and the Commission should deny this request.

DRA developed its corresponding TY estimate of $1.647 million for system funded projects by taking a 3-year average (2009-2011) of recorded expenses expressed in 2011 dollars,[149] and recommends that the Commission adopt it.

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[148] DRA-EJ1-016 question 10b

[149] 2009 recorded expenses = $1,847; 2010 recorded expenses = $1,777, 2011 recorded expenses = $1,316. The 3-year average is $1,647. Recorded expenses in 2011 dollars from DRA-255-EJ1 question 1.

XI. DISCUSSION / ANALYSIS OF ELECTRIC ENGINEERING – DISTRIBUTION PLANNING, OPERATIONS, and POWER QUALITY

PG&E's Electric Engineering program consists primarily of electric distribution engineers who support a variety of asset management and operating activities. PG&E forecasts $24.147 million for Electric Engineering – Distribution Planning, Operations, and Power Quality expenses for TY2014, which is an increase of $4.544 million or 23% over 2011 expenses of $19.603 million.[150] The corresponding DRA estimate for Electric Engineering expenses is $21.427 million, which is $2.720 million less than PG&E's forecast of $24.147 million, and $1.824 million over 2011 recorded expenses.[151]

The following table summarizes PG&E's request and DRA's recommendation for Electric Engineering – Distribution Planning, Operations, and Power Quality.

Table 5-30
Electric Distribution Expenses for TY2014
Electric Engineering – Distribution Planning, Operations, and Power Quality
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[152] (c)
FZ – Opr Distribution Sys -El Eng	$21,427	$24,147

A. MWC FZ

PG&E records expenses for Electric Engineering in MWC FZ under MAT FZA, FZB, FZC, FZD, and FZE. PG&E's forecast for the Electric Engineering

[150] Exhibit (PG&E-4) WP 14-1

[151] DRA totaled its forecasted 2014 expenses for MAT FZA, FZB, FZC, FZD, and FZE and then escalated. DRA did not escalate its forecasts for individual MATs

[152] Exhibit (PG&E-4) WP 14-1

Program was developed using 2011 actual expenditures and making upward adjustments for incremental expected future program costs.[153]

Table 5-31
2007-2011 Recorded Data for MWC FZ
(In Thousands of Dollars)

Description	2007	2008	2009	2010	2011
MAT FZA	$15,291	$17,605	$18,829	$18,460	$17,173
MAT FZB	$1,653	$1,966	$2,084	$1,146	$1,177
MAT FZC	$11	$44	$52	$18	$8
MAT FZD	$455	$298	$300	$257	$239
MAT FZE	-	-	-	-	$572
FZ – Opr Dist. Sys - El Eng	$17,579	$20,307	$21,277	$19,789	$19,603

Source: Exhibit (PG&E-4) WP 14-2

DRA developed its TY estimate of $21.427 million by using 2011 actual expenditures and making adjustments to PG&E's expected future program costs for each MAT.

1. MAT FZA: Distribution Engineering - Distribution Planning Operation and Power Quality

FZA records the expense-related costs of the Electric Distribution Engineers who work on electric distribution system planning and operations, as well as costs related to training and any special technical studies.[154] PG&E's TY estimate for MAT FZA expenses is $18.793 million. The corresponding DRA estimate is $18.093 million.

[153] Exhibit (PG&E-4) page 14-5

[154] DRA-025-EJ1 question 1

Table 5-32
PG&E's and DRA's forecast for MAT FZA expenses
(In Thousands of Dollars)

	PG&E's[155] TY2014	DRA's TY2014
Normal Operating Activities	$17,173	$17,173
2 Additional Entry Engineers	$200	$200
3 Power Quality Engineers and 1 Supervisor Realignement to MWC FZA	$720	$720
Increase in Operations Related Activities	$700	$0
Total FZA	$18,793	$18,093

PG&E requested funding for 2 additional entry engineers, the realignment of 3 Power Quality Engineers and 1 Supervisor to MWC FZA, and an increase in operations related activities. DRA does not object to PG&E's request for 2 additional entry engineers or the realignment of the 3 engineers and 1 supervisor.

PG&E requested an additional $700,000 over 2011 recorded costs to fund an increase in operations related activities.[156] DRA asked PG&E to provide a more detailed breakdown of the activities and associated costs.

DRA asked:[157]

> "On Line 20 of WP 14-13, PG&E stated: 'Recent initiatives such as investigation of downed power lines will drive an increase in expense related activities for planning engineers." Please provide a detailed explanation of all the initiatives and driving factors leading to an increase in TY2014 forecasted expenses for operations related activities (Line 10, WP 14-13). Provide a detailed breakdown of the additional costs that PG&E forecasted and include all supporting calculations and documentation.'"

[155] Exhibit (PG&E-4) WP 14-13

[156] Exhibit (PG&E-4) WP 14-13

[157] DRA-025-EJ1 question 6

PG&E responded:

> "Wires Down Initiative – As part of PG&E's efforts to reduce the number of wire-down events (which pose a potential public safety hazard, see Exhibit (PG&E-4), Chapter 1, p. 1-6, lines 13-25), the Company's Electric Distribution Engineers are investigating outages involving an overhead wire coming down to identify the contributing causes, pre-existing conditions, and probable root cause. The field investigation information is captured in a data base, and potential mitigating actions are taken or identified.
>
> There are approximately 1,500 cases of wires down every year. PG&E estimates Electric Distribution Engineer field investigation costs per occurrence at $300 per investigation (which represents approximately two-to-three hours of time). The product of these two values is $450,000 per year. PG&E has not incurred significant costs for this initiative in 2012, but will begin to incur significant costs in 2013 that will continue through 2014.
>
> The remainder of PG&E's forecast, which increases by $200,000 in 2014, was based on engineering judgment for other initiatives PG&E is likely to pursue. There were no further detailed calculations or breakdown of costs or supporting documentation used to develop this forecast."

DRA asked PG&E to clarify its response because costs associated with the increase in operations related activities did not total the forecasted $700,000.

DRA asked:[158]

> "In Answer 6 of DR-025-EJ1, PG&E forecasts $700,000 for an "increase in operations related activities." PG&E identifies $450,000 for the 'Wires Down Initiative' and $200,000 for "other initiatives PG&E is likely to pursue." Please identify for what purpose PG&E is forecasting the extra $50,000 in operations related activities."

PG&E's responded:

> "In investigating its response to this question, PG&E discovered that the $50,000 discrepancy noted by DRA was for work that had been considered but not included in the forecast. The $50,000 was

[158] DRA-202-EJ1 question 11

erroneously included in PG&E's response to Question 6 of DR-025. PG&E filed an errata correcting its forecast to $650,000 on March 19, 2013."

DRA opposes additional funding of $200,000 for "other initiatives PG&E is likely to pursue." Ratepayer funding should not be forecast for unidentified initiatives with no breakdown of costs or analyses. PG&E has embedded costs from ongoing or completed initiatives that it can reallocate if necessary. This reallocation of costs would more realistically reflects PG&E's relatively flat spending history in MAT FZA.

DRA asked PG&E further questions about the $450,000[159] for the Wires Down initiative.

DRA asked:[160]

"Does PG&E routinely investigate outages involving down wires? If yes, identify the costs incurred per each occurrence in 2011 and explain why PG&E needs additional funding for routine investigations. If no, explain in detail how long PG&E has been aware of the problem and why PG&E has waited until 2013 to implement the "Wires Down Initiative." Provide all supporting documentation, calculations, and analyses."

PG&E's responded:

"PG&E instituted a formal wires down investigation process using distribution planning engineers in 2012; these formal investigations were not routinely performed in 2011. Although it did not have a formal investigation process in place before 2012, PG&E has always responded to wires down incidents by isolating the down wires, and making repairs quickly.

By contrast, the wires down initiative launched in 2012 is directed at proactively identifying problems associated with either the conductor, connectors, or specific design issues that may be a contributing factor to the causes of downed wires, and is a new initiative to address public and system safety as part of the Electric Operations Improvement Plan. These assessments will enable PG&E to address specific issues discovered to mitigate any future occurrences. More details regarding

[159] Corrected from $500,000 in DRA-202-EJ1 question 11

[160] DRA-202-EJ1 question 10

the wires down initiative can be found in Exhibit (PG&E-4), Chapter 1, page 1-6, lines 15-27, Exhibit (PG&E-4), Chapter 5, page 5-22, lines 10-23, and Exhibit (PG&E-4), Chapter 15, page 15-12, lines 17-23."

PG&E did not provide sufficient documentation, calculations, or analyses to support its request. According to PG&E, there are approximately 1,500 cases of wires down each year, which signifies that the activity is not new. PG&E can reallocate embedded funds from current wire down maintenance to wire down investigations.

DRA opposes PG&E's request for an incremental $700,000 to fund its proposed increase in operations related activities.

2. MAT FZB: Voltage Problem and Electro-Magnet Field (EMF)

MAT FZB records the expense-related costs associated with field personal that trouble-shoot and investigate customer voltage complaints, SmartMeter voltage investigations.[161] PG&E's TY estimate for MAT FZB expenses is $1.800 million. PG&E is requesting additional funds for "recording volt meter installation and removals cost realignment" and "smart meter high/low voltage investigations." The corresponding DRA estimate for MAT FZB expenses is $1.221 million.

Table 5-33
PG&E's and DRA's forecast for MAT FZB expenses
(In Thousands of Dollars)

	PG&E's TY2014[162]	DRA's TY2014
Normal Operating Activities	$1,177	$1,177
Recording Volt Meter Installation and Removals Cost Realignment	$375	$0
Smart Meter High/Low Voltage Investigations	$248	$44
Total FZB	$1,800	$1,221

[161] DRA-025-EJ1 question 7

[162] Exhibit (PG&E-4) WP 14-14

DRA asked PG&E to track the cost realignment for recording volt meter installation and removals.

DRA asked:[163]

> "Line 2, WP 14-14 "Recording Volt Meter Installation and Removals Cost Realignment" – Describe the need to realign these expenses to MWC FZB. Reference the specific location in the work papers from where the costs are removed for realignment."

PG&E responded:

> "There is no specific reference in the workpapers showing the removal of these costs from MWC BH. PG&E will adjust its expense forecast though an errata at an appropriate point in the proceeding to reflect this shift of $375k."

DRA opposes PG&E's request for $375,000 in additional funding for the realignment because PG&E cannot identify the removal of costs for recording of volt meter installations from MWC BH where it was previously charged. PG&E's response indicates that the historical expenses for this activity are still embedded within MWC BH and were not adjusted out. In order to prevent the duplication of costs, DRA rejects realignments that cannot be tracked by PG&E.

DRA conducted discovery to assess the progress of voltage investigations conducted as a result of increasing SmartMeter data. PG&E states, "due to the implementation of SmartMeters, more data regarding customer service voltage is available and allows for greater detail of high or low voltage situations that previously may have gone undetected."[164] PG&E forecasted $113,000 for the increase in high/low voltage investigations in 2012 and an additional $135,000 in 2013. These numbers are used as the basis for the 2014 forecast.

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[163] DRA-025-EJ1 question 9

[164] Exhibit (PG&E-4) WP 14-14

DRA asked:[165]

> "Identify the number of voltage investigations that occurred in 2012, the cost per investigation, and the overall 2012 recorded costs for Smart Meter High/Low Voltage Investigations (in nominal and base year 2011 dollars)."

PG&E responded:

> "PG&E conducted 748 voltage investigations in 2012 for a total cost of $1,277,000, or an average of $1,707 per investigation. The 2012 recorded cost for Smart Meter High/Low Voltage Investigation was $22,080. Costs in base year 2011 dollars are $1,661 per investigation, and $21,488 for Smart Meter High/Low Voltage Investigations."

PG&E only spent an additional $22,080 in 2012 as a result of Smart Meter data in contrast to its forecast of $135,000. PG&E overstated its 2012 forecast by $157,080. DRA believes that PG&E's TY forecast is also overstated.

DRA recommends that the Commission adopt its TY forecast of $44,160 for Smart Meter High/Low Voltage Investigation. DRA relies on the 2012 recorded expenses of $22,080 and then doubles it to account for increases in investigations in 2013 and 2014.

3. MAT FZC: Overload and Idle Transformer Investigations

MAT FZC records the expense-related costs of Electric Estimators and Mapping personnel who perform over loaded and idle transformer investigations.[166] PG&E's TY estimate for MAT FZC is $0.200 million. DRA's corresponding TY estimate is $0.080 million.

[165] DRA-202-EJ1 question 15

[166] DRA-025-EJ1 question 1

Table 5-34
PG&E's and DRA's forecast for MAT FZC expenses
(In Thousands of Dollars)

	PG&E's TY2014[167]	DRA's TY2014
Normal Operating Activities	$8	$8
Overloaded Transformer Replacement Reviews	$192	$0
Total FZC	$200	$8

PG&E is forecasting an additional $0.192 million over 2011 recorded expenses for overloaded transformer replacement reviews. DRA asked PG&E to provide additional information for its request.

DRA asked:[168]

> "In Answer 13 of DR-025-EJ1, PG&E stated: 'With SmartMeter devices, a more accurate result of transformer loading can be obtained. Therefore, transformers with SmartMeter customers connected that indicate overload are being much more aggressively reviewed and prioritized for replacement.' Please provide the documentation, calculations, or studies that show an increase in overloaded transformer reviews due to SmartMeter data."

PG&E's responded:

> "PG&E did not proactively perform transformer reviews based on SmartMeter™ data in 2012, and therefore has no such documentation, calculations or studies. However, PG&E maintains its policy of more aggressive review and replacement (if necessary) of such transformers, and therefore expects the number of reviews in 2013/2014 to increase consistent with PG&E's GRC forecast."

As was the case for smart meter voltage investigations in MAT FZB, PG&E overestimated its ability to and the speed at which it will integrate Smart Data into its electric distribution operations and maintenance. In addition, PG&E did not provide

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[167] Exhibit (PG&E-4) WP 14-15

[168] DRA-202-EJ1 question 19

any documentation or analyses to support its request. DRA opposes additional funding for MAT FZC, and therefore recommends that the Commission adopt a forecast of $0.080 million, which is PG&E's 2011 recorded adjusted expenses.

4. MAT FZD: Phase Balancing and Crew Required Fuse Replacements

MAT FZD records the expense-related costs of field personnel who perform phase balancing work and fuse replacement work.[169] PG&E's TY estimate for MAT FZD is $1.515 million. DRA's corresponding TY estimate is $0.337 million.

Table 5-35
PG&E's and DRA's forecast for MAT FZD expenses
(In Thousands of Dollars)

	PG&E's TY2014[170]	DRA's TY2014
Normal Operating Activities	$239	$239
Overloaded Transformer Replacement Reviews	$1,276	$98
Total FZD	$1,515	$337

PG&E's requested an additional $1.276 million over 2011 recorded expenses of $0.239 million for identified phase balancing. For the initial phase of the project, PG&E forecasted conducting 43 phase balancing projects in 2012 for a cost of $1.076 million. DRA conducted discovery to identify the number of phase balancing projects completed in 2012.

DRA asked:[171]

> "Identify the number of phase balancing projects occurring in 2012, the cost per phase balancing project, and the overall 2012 recorded costs for identified phase balancing (in nominal and base year 2011 dollars)."

[169] DRA-025-EJ1 question 1

[170] Exhibit (PG&E-4) WP 14-16

[171] DRA-202-EJ1 question 15

PG&E responded:

> "In 2012, PG&E initiated five phase balancing projects, of which four were completed. Costs were $97,500. Costs in 2011 base year dollars were $94,886."

There is not sufficient documentation or cost-benefit analyses to justify an increase of $1.276 million over 2011 expenses for identified phase balancing. PG&E significantly overstated the number of phase balancing projects it would complete in 2012. It is more likely that PG&E annually completes four to five phase balancing projects. DRA proposes an additional $0.098 million over 2011 expenses for identified phase balancing. DRA recommends that the Commission adopt a forecast of $0.337 million.

5. MAT FZE: Device Setting Changes/Downloads; Seasonal and Emergency Load Transfers; Troublemen Required Fuse Replacements; Back to Normal Switching

MAT FZE records the expense-related costs of field personnel who support a variety of critical field tasks.[172] PG&E's TY estimate for MAT FZE expenses is $1.207 million. After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's request.

[172] DRA-025-EJ1 question 1

XII. DISCUSSION / ANALYSIS OF DISTRIBUTION AUTOMATION and SYSTEM PROTECTION

The Distribution Automation and System Protection program covers the installation, upgrade, and replacement of remotely controlled automation and protection equipment in substations and feeder circuits.[173] PG&E records expenses for Distribution Automation and System Protection in MWC HX. The following table summarizes PG&E's request and DRA's recommendation for MWC HX.

Table 5-36
Electric Distribution Expenses for TY2014
Distribution Automation and System Protection
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[174] (c)
HX – T&D System Automation	$2,027	$2,027

PG&E forecasts $2.027 million for TY2014 expenses.[175] After reviewing PG&E's testimony, workpapers, and discovery responses, DRA agrees with PG&E's TY forecast.

XIII. DISCUSSION / ANALYSIS OF ELECTRIC DISTRIBUTION SUPPORT ACTIVITIES

Electric Distribution Support Activities include training curriculum creation and revision and other distribution support expenses. PG&E forecasts $(6.056) million for TY2014 expenses. The program is recorded in two Major Work Categories (MWCs): DN for Technical Training Curriculum with a forecast of $4.135 million and MWC AB with a forecast of $(10.191) million. The corresponding DRA estimate for

[173] Exhibit (PG&E-4) page 17-1

[174] Exhibit (PG&E-4) WP 17-1

[175] Exhibit (PG&E-4) WP 17-1

Electric Distribution Support Activities is $(10.191) million, which is ($4.135) million greater than PG&E's TY forecast of $(6.056) million.

The following table summarizes PG&E's request and DRA's recommendation for the MWCs within Electric Distribution Support Activities.

Table 5-37
Electric Distribution Expenses for TY2014
Electric Distribution Support Activities
(In Thousands of Dollars)

Description (a)	DRA Recommended (b)	PG&E Proposed[176] (c)
DN – Develop & Provide Training	$0	$4,135
AB - Support	$(10,191)	$(10,191)
Total	$(10,191)	$(6,056)

A. MWC DN

PG&E records expenses for the Technical Training Curriculum in Major Work Category (MWC) DN. The expenses cover new training materials and course curriculums provided to PG&E employees.[177] PG&E developed its forecast by multiplying the estimated course length by the estimated contract rate for each course.[178]

There are no recorded historical expenses for MWC DN. DRA asked PG&E to provide historical annual expenses for PG&E's training curriculum.

DRA asked:[179]

> "There are no recorded historical costs for MWC DN: Technical Training Curriculum. Please explain where PG&E currently records

[176] Exhibit (PG&E-4) WP 20-8

[177] Exhibit (PG&E-4) page 20-2

[178] Exhibit (PG&E-4) WP 20-8

[179] DRA-150-EJ1 Question 1

costs for training materials and course curriculums. List the annual costs incurred from 2007-2011 (provide 2012 when available)."

PG&E responded:

"PG&E has not recorded historical costs for developing training materials and course curriculums in MWC DN. Expenditures have been recorded to both Provider Cost Centers (PCCs) and order numbers in either the Electric Operations and/or Human Resources organization. This is why there are no recorded costs for MWC DN in the workpapers for MWC DN. This is still currently the practice, with Human Resources providing curriculum oversight and some training development and training maintenance. Each Line of Business supported by PG&E Academy, including Electric Operations, funds all other training development.

With respect to the annual costs incurred from 2007-2012 PG&E has identified the courses and estimated the costs. The courses and values for 2007-2011 were provided in response to data request DRA 84, question 5(g), Supplement 01. Attachment GRC2014-Ph-I_DR_DRA_150-Q01Atch01 provides the same information from DRA 84, question 5(g) plus 2012 data. Note that the Development tab from this attachment provides the requested information."

Although PG&E is requesting $4.135 million by Major Work Category, PG&E provides training curriculum expenses in a different format than by MWC. This makes it unnecessarily difficult to track expenses associated with training. With no reliable historical data to evaluate, there is no way to ensure that a duplication of efforts and expenses does not occur or assess why PG&E is requesting additional funding for a routine, ongoing expense.

DRA considers training curriculum expenses to be routine and ongoing because PG&E is constantly updating and revising old courses, as well as implementing new courses. PG&E provided a list of PG&E's training courses from 2007-2012 and the dates that each course was last delivered.[180] Several courses were last delivered prior to 2012 while many are still continuing, thereby illustrating that there are embedded costs from ongoing, obsolete, and completed courses.

[180] DRA-150-EJ1 question 1

PG&E provided no evidence or explanation as to why current embedded costs for these programs are not sufficient to cover training of PG&E's work force. PG&E is responsible for reallocating ratepayer funds from outdated and ongoing courses into the newly proposed course programs and making appropriate downward adjustments to the MWCs. PG&E made no adjustments to existing MWCs where historical training expenses are recorded. Therefore, DRA recommends that the Commission reject PG&E's request for $4.135 million.

B. MWC AB

PG&E records expenses for miscellaneous support activities in Major Work Category (MWC) AB such as membership to the Edison Electric Institute (EEI). PG&E also uses MWC AB to record a credit representing PG&E productivity improvements. DRA recommends in Exhibit DRA-2 (Summary of Earnings) that PG&E's forecast of $(10.191) million for productivity improvements be accepted.